

# Accessing data on the Census Data API

**November 6, 2023**

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U.S. Census Bureau

# Today's Agenda

## API Background and Basics

## API Examples

- Population for all Counties in California
- Getting data from multiple tables
- Accessing 2005 ACS data
- Dual vintage PUMAs and the Microdata API

## Resources

# Application Programming Interfaces

Free, publicly accessible, open source services

## Census Data API

- Raw statistical data from programs and surveys across the Bureau

## Geocoder

- Translates addresses and other location formats into latitude/longitude parameters

## TIGERweb Services

- Census area boundaries and shapes for mapping referenced by FIPS codes

Census Data API questions: [census.data@census.gov](mailto:census.data@census.gov)

Geocoder questions: [geo.geocoding.services@census.gov](mailto:geo.geocoding.services@census.gov)

TIGERweb questions: [geo.tigerweb@census.gov](mailto:geo.tigerweb@census.gov)

# Census Data API

## Census Data API

- Data service that allows software developers and other users to access public data in a standardized way

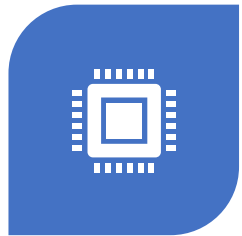
## Uses:

- Supports mobile and web applications (internal and external)
- Drives interactive data visualizations
- Connects to statistical analysis software like SAS and R

## Advantages:

- Access only the variables and geographies needed
- Immediate access to updates
- No need to host data on another server
- More data than what is available on [data.census.gov](https://data.census.gov)

# WHO uses the API?



DEVELOPERS\*



STUDENTS AND  
TEACHERS



RESEARCHERS



GOVERNMENT  
AGENCIES



FINANCIAL  
INSTITUTIONS

# WHY use the API?

- \* Want older data not available on [data.census.gov](https://data.census.gov), such as pre-2010 ACS
- \* Pull data for multiple tables at once, rather than viewing individual tables on [data.census.gov](https://data.census.gov)
- \* Want to gather a lot of data at once (usually involves use of third-party software)
- \* Want additional datasets not available in [data.census.gov](https://data.census.gov) or the Microdata Access Tool (MDAT)
- \* Problems pulling data from [data.census.gov](https://data.census.gov)
- \* Using Census data to create your own application or visualization

# Developers Page

**Developers**

[REQUEST A KEY](#)

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Facebook Twitter LinkedIn

The Census Bureau has begun rolling out our datasets via APIs. Check out our [Discovery Tool](#). Sign up for our [newsletter](#) to get the latest updates and newest dataset addition. We also invite you to make requests for features / data via our [forum](#).

[Read More](#)

### Developers' Forum

Need help? Check out our Developer Forum to submit questions, share your apps, and provide feedback.

[>](#)

### Data.census.gov Newsletter - January 2024

[Join the Mailing List](#)

To sign up for updates please enter your email address.

[>](#)

### Guidance for Developers

This page provides developers and researchers on how to use the Census Data API and Census Microdata API from U.S. Census Bureau datasets.

[>](#)

### Request A Key

Submit Key Request

[>](#)

## Accessing our API

- Request a Key
  - No charge
  - No throttling/limitations
- Browse the Discovery Tool
  - List of available datasets/endpoints
  - Descriptions, etc.
- Review the Updates Periodically
  - Join the Mailing List
  - Check your Spam folder for alerts
- Share your Experiences
  - Developers Forum

Developers Home Page




<https://www.census.gov/developers/>

# Discovery Tool

// Census.gov / Data / Developers / Updates / Census Data API Discovery Tool

**Census Data API Discovery Tool**

March 01, 2014


Share   

The Census Data API Discovery Tool provides a machine-readable dataset discovery service and is available in three formats:

- [api.census.gov/data.html](http://api.census.gov/data.html)
- [api.census.gov/data.xml](http://api.census.gov/data.xml)
- [api.census.gov/data.json](http://api.census.gov/data.json)

The content of [api.census.gov/data.json](http://api.census.gov/data.json) is based largely on the Open Project Data Common Core Metadata Schema and is extended to include metadata specific to Census Bureau datasets. The [api.census.gov/data.xml](http://api.census.gov/data.xml) URI may be used to access the same information as XML.

In addition to the above URIs dataset discovery is available for the entire [vintage/dataset hierarchy](#) as well. For example, the following URIs may be used to



## Information Provided

- Dataset Description
- Variables Included, Changes, Variable Formats, and Notes
- Annotation Variables and Values
- Cross-Tab Variables
- Supported Geographies
- Example Calls
- Links to Program Technical Documentation
- Links to FTP Servers

Census API: Datasets in /data/2021/acs/acs5/profile and its descendants

Title	Description	Vintage	Dataset Name	Dataset Type	Geography List	Variable List	Group List	SortList	Examples	Developer Documentation	API Base URL
American Community Survey: 5-Year Estimates: Data Profiles 5-Year	The American Community Survey (ACS) is an ongoing survey that provides data every year -- giving communities the current information they need to plan investments and services. The ACS covers a broad range of topics about social, economic, housing, and demographic characteristics of the U.S. population. The ACS 5-year data profiles include the following geographies: nation, all states (including DC and Puerto Rico), all metropolitan areas, all congressional districts, all counties, all places and all tracts. The Data profiles contain broad social, economic, housing, and demographic information. The data are presented as both counts and percentages. There are over 2,400 variables in this dataset.	2021	acs>acs5>profile	Aggregate	<a href="#">geographies</a>	<a href="#">variables</a>	<a href="#">groups</a>	<a href="#">sorts</a>	<a href="#">examples</a>	<a href="#">documentation</a>	<a href="http://api.census.gov/data/2021/acs/acs5/profile">http://api.census.gov/data/2021/acs/acs5/profile</a>
1 dataset											



# Available APIs Page

// Census.gov / Data / Developers / Available APIs

## Available APIs



We plan on adding more of our publicly available datasets. Here you'll find which of our many data sets are currently available via API. To make specific requests for the release of datasets, please sign up and submit your requests on our Developer Forum.

NEW: We now have a machine-readable dataset discovery service available in beta release. Visit our [Discovery Tool page](#) to learn more.

EXPAND ALL | COLLAPSE ALL

- ⊖ American Community Survey (ACS)
- ⊖ Decennial Census
- ⊖ Economic Census
- ⊖ Population Estimates and Projections
- ⊖ Health Insurance Statistics
- ⊖ Poverty Statistics
- ⊖ Annual Business Survey (ABS)
- ⊖ Annual Survey of Entrepreneurs (ASE)

EXPAND ALL | COLLAPSE ALL

### ⊖ American Community Survey (ACS)

#### American Community Survey 1-Year Data (2005-2021)

September 15, 2022

Areas with populations of 65,000+. Covers a broad range of topics about social, economic, demographic, and housing characteristics of the U.S. population.



#### American Community Survey 1-Year Supplemental Data (2014 - 2021)

October 20, 2022

High-level detailed tables tabulated on the 1-year microdata for geographies with populations of 20,000 or more.



#### American Community Survey 3-Year Data (2007-2013)

September 15, 2016

Areas with populations of 20,000+. Covers a broad range of topics about social, economic, demographic, and housing characteristics of the U.S. population.

Provides the same information found in the Discovery Tool, but in an easier to read format

Available APIs Page

<https://www.census.gov/data/developers/data-sets.html>

# data.census.gov and the Census Data API

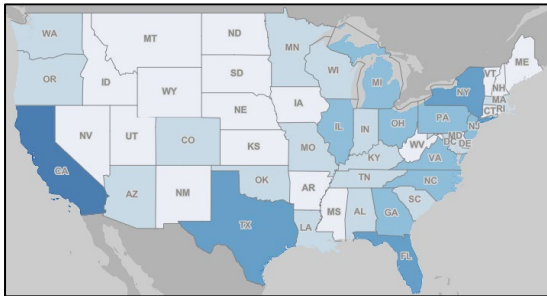
## Query through data.census.gov

- Queries are made for you
- No need to learn how to use the API
- Returns formatted data
- Provides tables, maps, and visualizations

Median Household Income in Crofton CDP, Maryland is **\$129,766** ± \$9,590

2021 American Community Survey 5-Year Estimates

[View This Result](#)



## Two ways to get the same data



Census API



## Directly query the API

- Machine-readable data perfect for use in dashboards or apps
- Provides single or multiple pieces of data
- Quickly and easily make bulk queries
- Includes more datasets

```
api.census.gov/data/2020/dec/p1/gen=NAME:group019for=states33
[[{"NAME", "GEO_ID", "NAME", "P1_001N", "P1_001NA", "P1_002N", "P1_002NA", "P1_003N", "P1_003NA", "P1_004N", "P1_004NA", "P1_005N", "P1_005NA", "P1_006N", "P1_006NA", "P1_007N", "P1_007NA", "P1_008N", "P1_008NA", "P1_009N", "P1_009NA", "P1_010N", "P1_010NA", "P1_011N", "P1_011NA", "P1_012N", "P1_012NA", "P1_013N", "P1_013NA", "P1_014N", "P1_014NA", "P1_015N", "P1_015NA", "P1_016N", "P1_016NA", "P1_017N", "P1_017NA", "P1_018N", "P1_018NA", "P1_019N", "P1_019NA", "P1_020N", "P1_020NA", "P1_021N", "P1_021NA", "P1_022N", "P1_022NA", "P1_023N", "P1_023NA", "P1_024N", "P1_024NA", "P1_025N", "P1_025NA", "P1_026N", "P1_026NA", "P1_027N", "P1_027NA", "P1_028N", "P1_028NA", "P1_029N", "P1_029NA", "P1_030N", "P1_030NA", "P1_031N", "P1_031NA", "P1_032N", "P1_032NA", "P1_033N", "P1_033NA", "P1_034N", "P1_034NA", "P1_035N", "P1_035NA", "P1_036N", "P1_036NA", "P1_037N", "P1_037NA", "P1_038N", "P1_038NA", "P1_039N", "P1_039NA", "P1_040N", "P1_040NA", "P1_041N", "P1_041NA", "P1_042N", "P1_042NA", "P1_043N", "P1_043NA", "P1_044N", "P1_044NA", "P1_045N", "P1_045NA", "P1_046N", "P1_046NA", "P1_047N", "P1_047NA", "P1_048N", "P1_048NA", "P1_049N", "P1_049NA", "P1_050N", "P1_050NA", "P1_051N", "P1_051NA", "P1_052N", "P1_052NA", "P1_053N", "P1_053NA", "P1_054N", "P1_054NA", "P1_055N", "P1_055NA", "P1_056N", "P1_056NA", "P1_057N", "P1_057NA", "P1_058N", "P1_058NA", "P1_059N", "P1_059NA", "P1_060N", "P1_060NA", "P1_061N", "P1_061NA", "P1_062N", "P1_062NA", "P1_063N", "P1_063NA", "P1_064N", "P1_064NA", "P1_065N", "P1_065NA", "P1_066N", "P1_066NA", "P1_067N", "P1_067NA", "P1_068N", "P1_068NA", "P1_069N", "P1_069NA", "P1_070N", "P1_070NA", "P1_071N", "P1_071NA", "state"}], [{"Washington", "040000US33", "Washington", "7705281", null, "6868622", null, "5130920", null, "307565", null, "121468", null, "79899", null, "64933", null, "51340", null, "636659", null, "77816", null, "82193", null, "138919", null, "147299", null, "15706", null, "333489", null, "6570", null, "8676", null, "2243", null, "7734", null, "2803", null, "893", null, "6295", null, "11689", null, "4451", null, "1156", null, "59396", null, "11320", null, "6658", null, "1223", null, "4725", null, "6577", null, "1179", null}]]
```

# API Key

## API Key

**Developers**

**REQUEST A KEY**

Share

The Census Bureau has begun rolling out our datasets via APIs. Check out our [Discovery Tool](#). Sign up for our [newsletter](#) to get the latest updates and newest dataset addition. We also invite you to make requests for features / data via our [forum](#).

[Read More](#)

**slack**

**Developers' Forum**

Need help? Check out our Developer Forum to submit questions, share your apps, and provide feedback.

**United States Census Bureau**

**Data.census.gov Newsletter – January 2024**

**Join the Mailing List**

To sign up for updates please enter your email address.

**Guidance for Developers**

This page provides developers and researchers on how to use the Census Data API and Census Microdata API from U.S. Census Bureau datasets.

**Request a KEY**

Submit Key Request

- Request a Key
  - No charge
  - No throttling/limitations
- Necessary if you plan to run more than 500 queries per IP address per day
- Request a key at <https://www.census.gov/data/developers.html> or <https://www.census.gov/data/developers/data-sets.html>

**Request a Key**  
[https://api.census.gov/data/key\\_signup.html](https://api.census.gov/data/key_signup.html)

# Understanding the API Query Examples

An asterisk (\*) indicates that all of that particular type of geography will be included (e.g.: **&for=state:\*** indicates that data will be pulled for **all states**).

Numbers found in the geography portion indicate the specific FIPS code or the unique identifier for a given geography (e.g., **&for=state:06** indicates that the data will be pulled for **California (06)**).

Geography Hierarchy	Geography Level	Example URL
us	010	<a href="https://api.census.gov/data/2021/acs/acs5/profile?get=NAME&amp;for=us:*&amp;key=YOUR_KEY_GOES_HERE">https://api.census.gov/data/2021/acs/acs5/profile?get=NAME&amp;for=us:*&amp;key=YOUR_KEY_GOES_HERE</a>
		<a href="https://api.census.gov/data/2021/acs/acs5/profile?get=NAME&amp;for=us:1&amp;key=YOUR_KEY_GOES_HERE">https://api.census.gov/data/2021/acs/acs5/profile?get=NAME&amp;for=us:1&amp;key=YOUR_KEY_GOES_HERE</a>
region	020	<a href="https://api.census.gov/data/2021/acs/acs5/profile?get=NAME&amp;for=region:*&amp;key=YOUR_KEY_GOES_HERE">https://api.census.gov/data/2021/acs/acs5/profile?get=NAME&amp;for=region:*&amp;key=YOUR_KEY_GOES_HERE</a>
		<a href="https://api.census.gov/data/2021/acs/acs5/profile?get=NAME&amp;for=region:3&amp;key=YOUR_KEY_GOES_HERE">https://api.census.gov/data/2021/acs/acs5/profile?get=NAME&amp;for=region:3&amp;key=YOUR_KEY_GOES_HERE</a>
division	030	<a href="https://api.census.gov/data/2021/acs/acs5/profile?get=NAME&amp;for=division:*&amp;key=YOUR_KEY_GOES_HERE">https://api.census.gov/data/2021/acs/acs5/profile?get=NAME&amp;for=division:*&amp;key=YOUR_KEY_GOES_HERE</a>
		<a href="https://api.census.gov/data/2021/acs/acs5/profile?get=NAME&amp;for=division:5&amp;key=YOUR_KEY_GOES_HERE">https://api.census.gov/data/2021/acs/acs5/profile?get=NAME&amp;for=division:5&amp;key=YOUR_KEY_GOES_HERE</a>
state	040	<a href="https://api.census.gov/data/2021/acs/acs5/profile?get=NAME&amp;for=state:*&amp;key=YOUR_KEY_GOES_HERE">https://api.census.gov/data/2021/acs/acs5/profile?get=NAME&amp;for=state:*&amp;key=YOUR_KEY_GOES_HERE</a>
		<a href="https://api.census.gov/data/2021/acs/acs5/profile?get=NAME&amp;for=state:06&amp;key=YOUR_KEY_GOES_HERE">https://api.census.gov/data/2021/acs/acs5/profile?get=NAME&amp;for=state:06&amp;key=YOUR_KEY_GOES_HERE</a>
state: county	050	<a href="https://api.census.gov/data/2021/acs/acs5/profile?get=NAME&amp;for=county:*&amp;key=YOUR_KEY_GOES_HERE">https://api.census.gov/data/2021/acs/acs5/profile?get=NAME&amp;for=county:*&amp;key=YOUR_KEY_GOES_HERE</a>
		<a href="https://api.census.gov/data/2021/acs/acs5/profile?get=NAME&amp;for=county:*&amp;for=state:*&amp;key=YOUR_KEY_GOES_HERE">https://api.census.gov/data/2021/acs/acs5/profile?get=NAME&amp;for=county:*&amp;for=state:*&amp;key=YOUR_KEY_GOES_HERE</a>

# Understanding the API Query Examples

The **&key=** portion is where you will add your key to the query if you have one.

A key is needed if you plan to run more than 500 API queries per IP address per day.

Geography Hierarchy	Geography Level	Example URL
us	010	<a href="https://api.census.gov/data/2021/acs/acs5/profile?get=NAME&amp;for=us:*&amp;key=YOUR_KEY_GOES_HERE">https://api.census.gov/data/2021/acs/acs5/profile?get=NAME&amp;for=us:*&amp;key=YOUR_KEY_GOES_HERE</a>
		<a href="https://api.census.gov/data/2021/acs/acs5/profile?get=NAME&amp;for=us:1&amp;key=YOUR_KEY_GOES_HERE">https://api.census.gov/data/2021/acs/acs5/profile?get=NAME&amp;for=us:1&amp;key=YOUR_KEY_GOES_HERE</a>
region	020	<a href="https://api.census.gov/data/2021/acs/acs5/profile?get=NAME&amp;for=region:*&amp;key=YOUR_KEY_GOES_HERE">https://api.census.gov/data/2021/acs/acs5/profile?get=NAME&amp;for=region:*&amp;key=YOUR_KEY_GOES_HERE</a>
		<a href="https://api.census.gov/data/2021/acs/acs5/profile?get=NAME&amp;for=region:3&amp;key=YOUR_KEY_GOES_HERE">https://api.census.gov/data/2021/acs/acs5/profile?get=NAME&amp;for=region:3&amp;key=YOUR_KEY_GOES_HERE</a>
division	030	<a href="https://api.census.gov/data/2021/acs/acs5/profile?get=NAME&amp;for=division:*&amp;key=YOUR_KEY_GOES_HERE">https://api.census.gov/data/2021/acs/acs5/profile?get=NAME&amp;for=division:*&amp;key=YOUR_KEY_GOES_HERE</a>
		<a href="https://api.census.gov/data/2021/acs/acs5/profile?get=NAME&amp;for=division:5&amp;key=YOUR_KEY_GOES_HERE">https://api.census.gov/data/2021/acs/acs5/profile?get=NAME&amp;for=division:5&amp;key=YOUR_KEY_GOES_HERE</a>
state	040	<a href="https://api.census.gov/data/2021/acs/acs5/profile?get=NAME&amp;for=state:*&amp;key=YOUR_KEY_GOES_HERE">https://api.census.gov/data/2021/acs/acs5/profile?get=NAME&amp;for=state:*&amp;key=YOUR_KEY_GOES_HERE</a>
		<a href="https://api.census.gov/data/2021/acs/acs5/profile?get=NAME&amp;for=state:05&amp;key=YOUR_KEY_GOES_HERE">https://api.census.gov/data/2021/acs/acs5/profile?get=NAME&amp;for=state:05&amp;key=YOUR_KEY_GOES_HERE</a>
state, county	050	<a href="https://api.census.gov/data/2021/acs/acs5/profile?get=NAME&amp;for=county:*&amp;key=YOUR_KEY_GOES_HERE">https://api.census.gov/data/2021/acs/acs5/profile?get=NAME&amp;for=county:*&amp;key=YOUR_KEY_GOES_HERE</a>
		<a href="https://api.census.gov/data/2021/acs/acs5/profile?get=NAME&amp;for=county:*&amp;in=state:*&amp;key=YOUR_KEY_GOES_HERE">https://api.census.gov/data/2021/acs/acs5/profile?get=NAME&amp;for=county:*&amp;in=state:*&amp;key=YOUR_KEY_GOES_HERE</a>

# Today's Agenda

API Background and Basics

API Examples

- Population for all Counties in California
- Getting data from multiple tables
- Accessing 2005 ACS data
- Dual vintage PUMAs and the Microdata API

Resources

# Census API

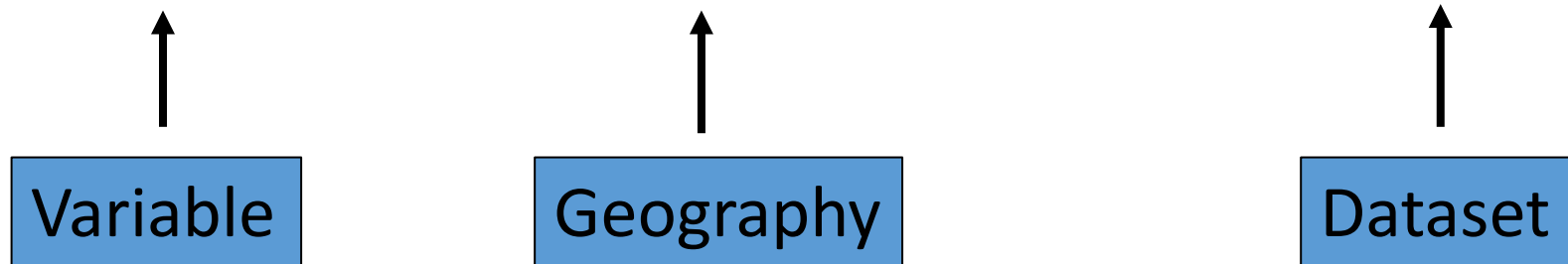
## Starting off Simple - Single Variables for Geographies

- Find the Total Population of all Counties in California as of the 2020 Census

# Census API

## Starting off Simple - Single Variables for Geographies

- Find the Total Population of all Counties in California as of the 2020 Census





# Total Population of all Counties in California as of the 2020 Census

- Select Your Dataset On The Available APIs Page

// Census.gov / Data / Developers / Available APIs

**Available APIs**

We plan on adding more of our publicly available datasets. Here you'll find which of our many data sets are currently available via API. To make specific requests for the release of datasets, please sign up and submit your requests on our [Developer Forum](#).

NEW: We now have a machine-readable dataset discovery service available in beta release. Visit our [Discovery Tool page](#) to learn more

[EXPAND ALL](#) | [COLLAPSE ALL](#)

- American Community Survey (ACS)
- Decennial Census

**Decennial Census (2020, 2010, 2000)**

September 21, 2023

Population data by sex, age, race, Hispanic origin and more. Housing data by occupancy, vacancy status, and tenure. Highest geographic resolution (all levels).

[Request a](#)

- Under Redistricting Data, select **2020 PL Examples and Support Geography**

## Redistricting Data (PL 94-171)

- **API Call:** [api.census.gov/data/2020/dec/pl](https://api.census.gov/data/2020/dec/pl)
- **Example for data that has an assigned key inserted:**  
[api.census.gov/data/2020/dec/pl?get=NAME&for=state:\\*&key=\[user key\]](https://api.census.gov/data/2020/dec/pl?get=NAME&for=state:*&key=[user key])
- 2020 PL API Variables [ [html](#) | [xml](#) | [json](#) ]
- [2020 PL Technical Documentation](#)
- [2020 PL Examples and Supported Geography](#)

<https://www.census.gov/data/developers/data-sets/decennial-census.html>

- Open the **Variables** and **Examples** links in new tabs in your browser

*Census API: Datasets in /data/2020/dec/pl and its descendants*

Title	Description	Vintage	Dataset Name	Dataset Type	Geography List	Variable List	Group List	SortList	Examples	Developer Documentation	API Base URL
Decennial Census: Redistricting Data (PL 94-171)	Public Law 94-171, enacted in 1975, directs the Census Bureau to make special preparations to provide redistricting data needed by the 50 states. It specifies that within a year following Census Day, the Census Bureau must send the governor and legislative leadership in each state the data they need to redraw districts for the United States Congress and state legislature. To meet this legal requirement, the Census Bureau set up a program that affords state officials an opportunity before each decennial census to define the small areas for which they wish to receive census population totals for redistricting purposes. Officials may receive data for voting districts (e.g., election precincts, wards) and state house and senate districts, in addition to standard census geographic areas such as counties, cities, census tracts, and tabulation blocks. State participation in defining areas is voluntary and nonpartisan.	2020	dec> pl	Aggregate	<a href="#">geographies</a>	<a href="#">variables</a>	<a href="#">groups</a>	<a href="#">sorts</a>	<a href="#">examples</a>	<a href="#">documentation</a>	<a href="http://api.census.gov/data/2020/dec/pl">http://api.census.gov/data/2020/dec/pl</a>
<i>1 dataset</i>											

<https://api.census.gov/data/2020/dec/pl.html>

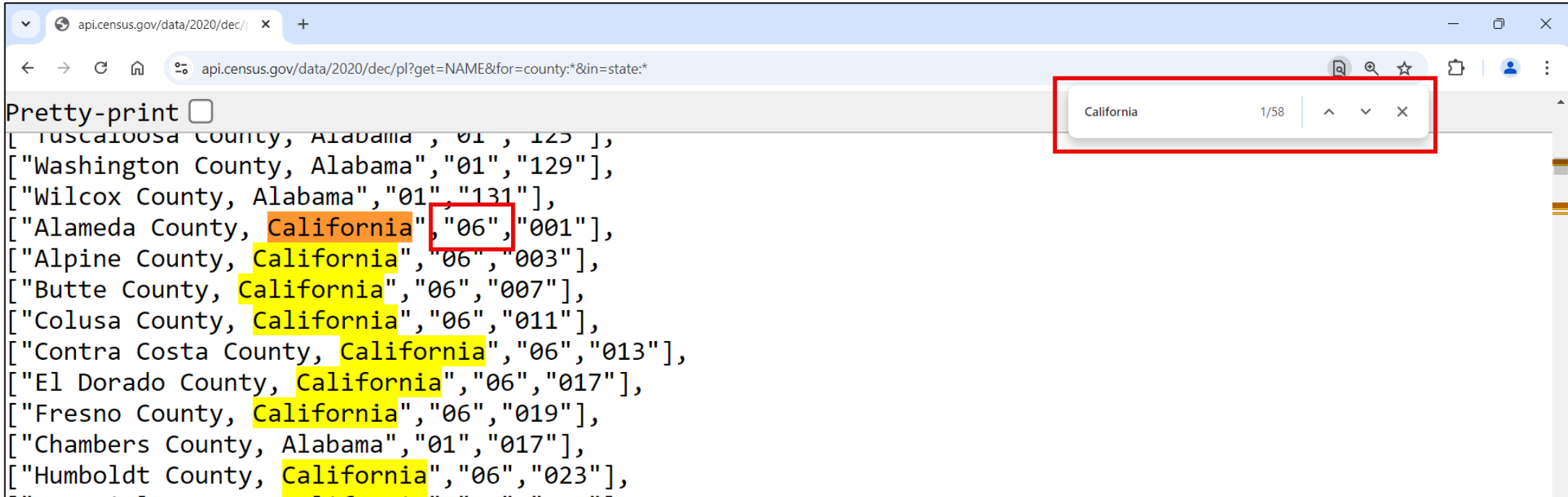
- On the Examples page, right click on the second County link and choose Open link in new tab

Geography Hierarchy	Geography Level	Example URL
us	010	<a href="https://api.census.gov/data/2020/dec/pl?get=NAME&amp;for=us:*&amp;key=YOUR_KEY_GOES_HERE">https://api.census.gov/data/2020/dec/pl?get=NAME&amp;for=us:*&amp;key=YOUR_KEY_GOES_HERE</a>
		<a href="https://api.census.gov/data/2020/dec/pl?get=NAME&amp;for=us:1&amp;key=YOUR_KEY_GOES_HERE">https://api.census.gov/data/2020/dec/pl?get=NAME&amp;for=us:1&amp;key=YOUR_KEY_GOES_HERE</a>
region	020	<a href="https://api.census.gov/data/2020/dec/pl?get=NAME&amp;for=region:*&amp;key=YOUR_KEY_GOES_HERE">https://api.census.gov/data/2020/dec/pl?get=NAME&amp;for=region:*&amp;key=YOUR_KEY_GOES_HERE</a>
		<a href="https://api.census.gov/data/2020/dec/pl?get=NAME&amp;for=region:3&amp;key=YOUR_KEY_GOES_HERE">https://api.census.gov/data/2020/dec/pl?get=NAME&amp;for=region:3&amp;key=YOUR_KEY_GOES_HERE</a>
division	030	<a href="https://api.census.gov/data/2020/dec/pl?get=NAME&amp;for=division:*&amp;key=YOUR_KEY_GOES_HERE">https://api.census.gov/data/2020/dec/pl?get=NAME&amp;for=division:*&amp;key=YOUR_KEY_GOES_HERE</a>
		<a href="https://api.census.gov/data/2020/dec/pl?get=NAME&amp;for=division:5&amp;key=YOUR_KEY_GOES_HERE">https://api.census.gov/data/2020/dec/pl?get=NAME&amp;for=division:5&amp;key=YOUR_KEY_GOES_HERE</a>
state	040	<a href="https://api.census.gov/data/2020/dec/pl?get=NAME&amp;for=state:*&amp;key=YOUR_KEY_GOES_HERE">https://api.census.gov/data/2020/dec/pl?get=NAME&amp;for=state:*&amp;key=YOUR_KEY_GOES_HERE</a>
		<a href="https://api.census.gov/data/2020/dec/pl?get=NAME&amp;for=state:06&amp;key=YOUR_KEY_GOES_HERE">https://api.census.gov/data/2020/dec/pl?get=NAME&amp;for=state:06&amp;key=YOUR_KEY_GOES_HERE</a>
state > county	050	<a href="https://api.census.gov/data/2020/dec/pl?get=NAME&amp;for=county:*&amp;key=YOUR_KEY_GOES_HERE">https://api.census.gov/data/2020/dec/pl?get=NAME&amp;for=county:*&amp;key=YOUR_KEY_GOES_HERE</a>
		<a href="https://api.census.gov/data/2020/dec/pl?get=NAME&amp;for=county:037&amp;in=state:06&amp;key=YOUR_KEY_GOES_HERE">https://api.census.gov/data/2020/dec/pl?get=NAME&amp;for=county:037&amp;in=state:06&amp;key=YOUR_KEY_GOES_HERE</a>
state > county > county subdivision	060	<a href="https://api.census.gov/data/2020/dec/pl?get=NAME&amp;for=county%20subdivision:*&amp;in=state:48&amp;key=YOUR_KEY_GOES_HERE">https://api.census.gov/data/2020/dec/pl?get=NAME&amp;for=county%20subdivision:*&amp;in=state:48&amp;key=YOUR_KEY_GOES_HERE</a>
		<a href="https://api.census.gov/data/2020/dec/pl?get=NAME&amp;for=county%20subdivision:91835&amp;in=state:48&amp;in=county:*&amp;key=YOUR_KEY_GOES_HERE">https://api.census.gov/data/2020/dec/pl?get=NAME&amp;for=county%20subdivision:91835&amp;in=state:48&amp;in=county:*&amp;key=YOUR_KEY_GOES_HERE</a>
state > county > county subdivision > subminor civil division	067	<a href="https://api.census.gov/data/2020/dec/pl?get=NAME&amp;for=subminor%20civil%20division:*&amp;in=state:72&amp;in=county:127&amp;in=county%20subdivision:76644&amp;key=YOUR_KEY_GOES_HERE">https://api.census.gov/data/2020/dec/pl?get=NAME&amp;for=subminor%20civil%20division:*&amp;in=state:72&amp;in=county:127&amp;in=county%20subdivision:76644&amp;key=YOUR_KEY_GOES_HERE</a>
		<a href="https://api.census.gov/data/2020/dec/pl?get=NAME&amp;for=subminor%20civil%20division:76644&amp;in=state:72&amp;in=county:127&amp;in=county%20subdivision:76644&amp;key=YOUR_KEY_GOES_HERE">https://api.census.gov/data/2020/dec/pl?get=NAME&amp;for=subminor%20civil%20division:76644&amp;in=state:72&amp;in=county:127&amp;in=county%20subdivision:76644&amp;key=YOUR_KEY_GOES_HERE</a>

A context menu is shown over the second link in the 'state > county' row. The menu items are: 'Open link in new tab' (highlighted with a red box), 'Open link in new window', 'Open link in incognito window', 'Save link as...', 'Copy link address', and 'Inspect'.

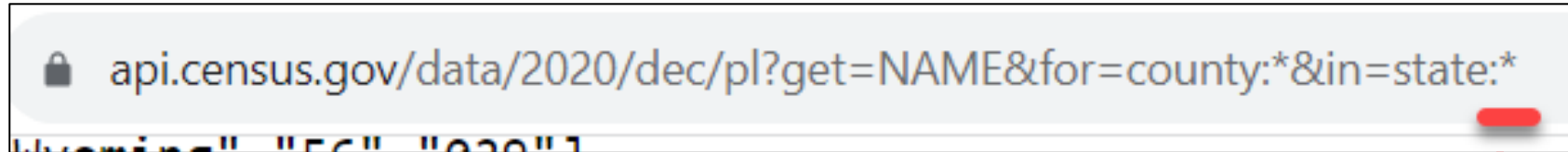
<https://api.census.gov/data/2020/dec/pl/examples.html>

- First, we need to locate California's state FIPS code
- Press **Ctrl+F** to open a search box in your browser and type "California"
- California's state FIPS code is **06**

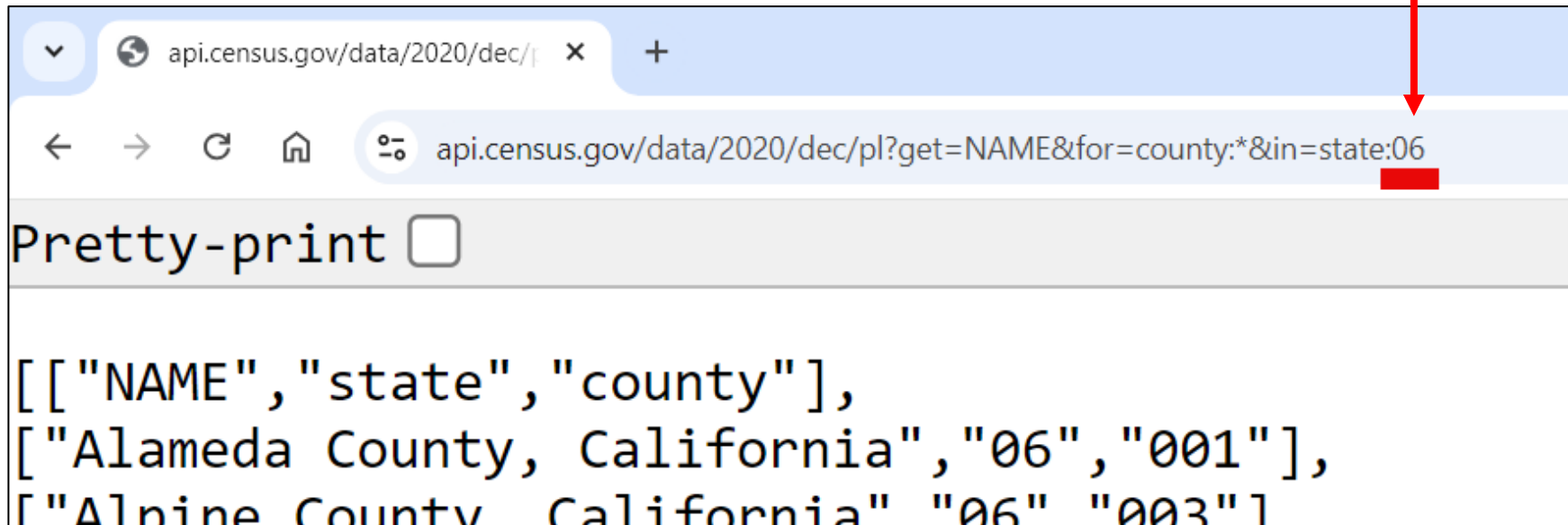


[https://api.census.gov/data/2020/dec/pl?get=NAME&for=county:\\*&in=state:\\*](https://api.census.gov/data/2020/dec/pl?get=NAME&for=county:*&in=state:*)

- Update the URL to change the asterisk (also known as a wildcard in the API) following “state:” to California’s state FIPS code of **06**



api.census.gov/data/2020/dec/pl?get=NAME&for=county:\*&in=state:\*



api.census.gov/data/2020/dec/pl?get=NAME&for=county:\*&in=state:06

Pretty-print

```
[["NAME", "state", "county"],  
["Alameda County, California", "06", "001"],  
["Alpine County, California", "06", "003"]]
```

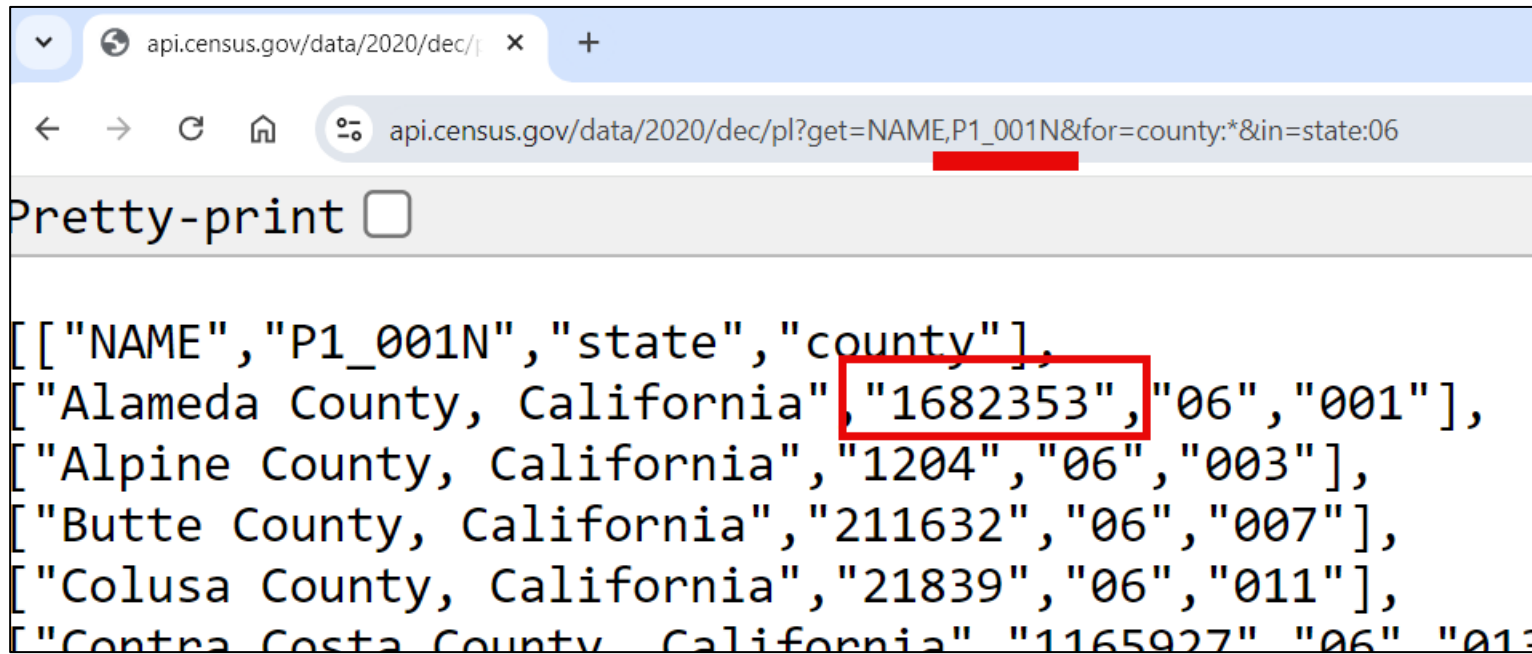
[https://api.census.gov/data/2020/dec/pl?get=NAME&for=county:\\*&in=state:06](https://api.census.gov/data/2020/dec/pl?get=NAME&for=county:*&in=state:06)

- On the Variables page in your other tab
- Scroll down to find variable **P1\_001N**, the Total Population variable from table P1.

Variable	Description	Table
<a href="#">METDIV</a>	Geography	
<a href="#">NATION</a>	Geography	
<a href="#">NECTA</a>	Geography	
<a href="#">NECTADIV</a>	Geography	
<a href="#">P1_001N</a>	!!Total:	RACE
<a href="#">P1_002N</a>	!!Total:!!Population of one race:	RACE
<a href="#">P1_003N</a>	!!Total:!!Population of one race:!!White alone	RACE

<https://api.census.gov/data/2020/dec/pl/variables.html>

- Go back to the other tab to update the URL with the population variable
- After NAME in the URL, add “,P1\_001N” and hit enter to reload the page
- You can now see the population for each county in California as of the 2020 Census
  - For example, Alameda County has a population of 1,682,353.



```
api.census.gov/data/2020/dec/pl?get=NAME,P1_001N&for=county:*&in=state:06  
Pretty-print   
[[{"NAME", "P1_001N", "state", "county"},  
{"Alameda County, California", "1682353", "06", "001"},  
{"Alpine County, California", "1204", "06", "003"},  
{"Butte County, California", "211632", "06", "007"},  
{"Colusa County, California", "21839", "06", "011"},  
{"Contra Costa County, California", "1165927", "06", "013"}]]
```

[https://api.census.gov/data/2020/dec/pl?get=NAME,P1\\_001N&for=county:\\*&in=state:72](https://api.census.gov/data/2020/dec/pl?get=NAME,P1_001N&for=county:*&in=state:72)



# Census API

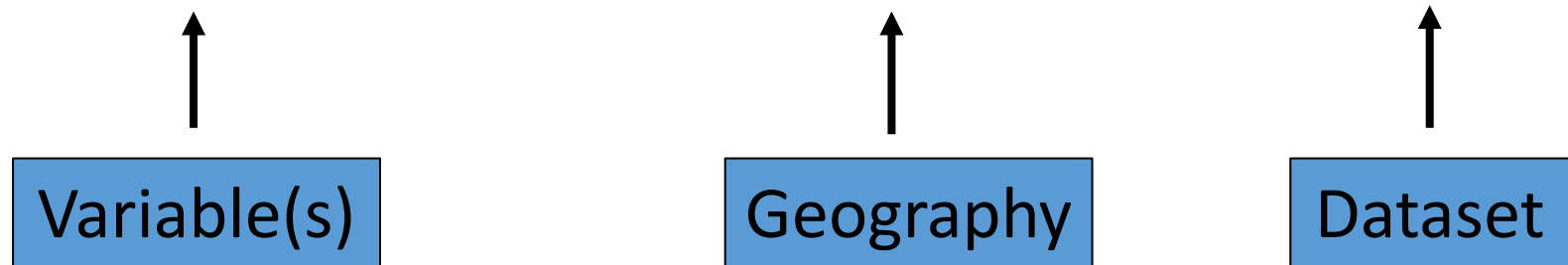
## Multiple Variables from Multiple Tables

- Find the Male and Female under 5 population by Race/Ethnicity in California using the 2023 ACS 1-Year Estimates

# Census API

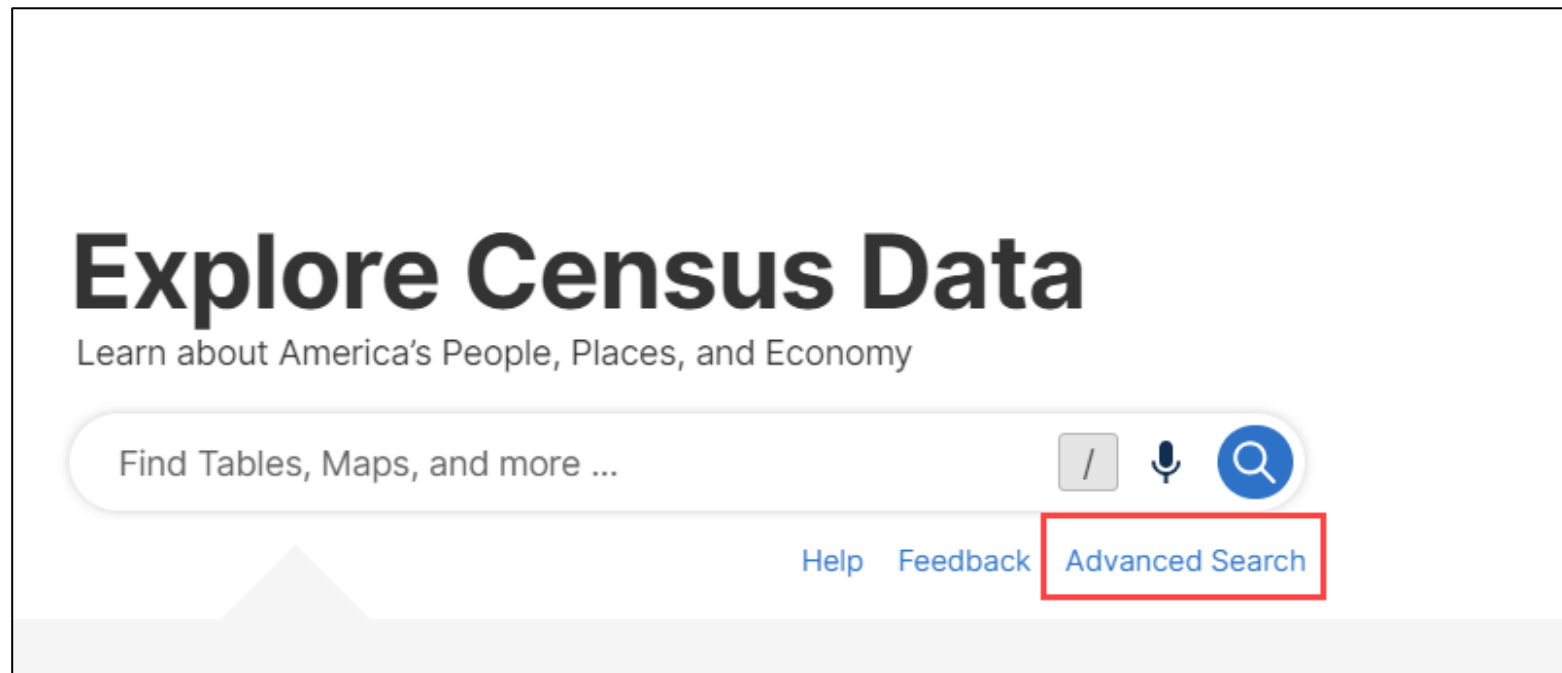
## Multiple Variables from Multiple Tables

- Find the Male and Female under 5 population by Race/Ethnicity in California using the 2023 ACS 1-Year Estimates



# Male and Female under 5 Population for multiple races/ethnicities in California

- As an optional first step, go to [data.census.gov](https://data.census.gov) click on **Advanced Search** to locate tables you'd like to use
- Skip to slide 34 for API only instructions



- Under Topics, select Populations and People and choose **Age and Sex**

The screenshot displays the United States Census Bureau website interface. At the top left is the logo for the United States Census Bureau. A search bar is located at the top right. Below the search bar are navigation tabs for 'All', 'Tables', 'Maps', and 'Profiles'. The main content area is divided into a left sidebar and a right main panel. The sidebar contains a list of geographical levels: Metropolitan/Micropolitan Statistical Area, Census Tract, Block, Block Group, and All Geographies. Below this is a 'Topics' section with a list of categories: Business and Economy, Education, Employment, Families and Living Arrangements, Government, Health, Housing, Income and Poverty, Populations and People (highlighted with a red box), Race and Ethnicity, and Surveys. The right main panel shows a breadcrumb trail: 'Populations and People / Select Populations and'. Below this is another search bar labeled 'Search Populations and People'. A list of filters is displayed, with 'Age and Sex' checked and highlighted by a red box. Other filters include Language Spoken at Home, Older Population, Populations and People, Residential Mobility, Veterans, and Voting and Registration.

- Under Topics, select Race and Ethnicity and choose **Race and Ethnicity**

The screenshot displays the navigation menu for the United States Census Bureau. The 'Topics' section is expanded, and 'Race and Ethnicity' is highlighted with a red box. The 'Surveys' section is also visible. The 'Race and Ethnicity' sub-menu is open, showing various options, with 'Race and Ethnicity' selected and highlighted with a red box.

**Topics**

- Business and Economy >
- Education >
- Employment >
- Families and Living Arrangements >
- Government >
- Health >
- Housing >
- Income and Poverty >
- Populations and People >
- Race and Ethnicity >**

**Surveys**

- American Community Survey >
- Current Population Survey >
- Decennial Census >
- Decennial Census of Island Areas >

American Indian and Alaska Native >

Asian >

Black or African American >

Hispanic or Latino >

Native Hawaiian and Other Pacific Islander >

Not Hispanic or Latino >

Some Other Race >

Two or More Races >

White >

- All available race combinations
- All available races
- All available races alone
- All available races alone or in combination
- Race and Ethnicity**
- Total population

- Under geography, choose State > **California**.

The screenshot shows the 'Geographies' filter menu on the left and a list of states on the right. The 'State' option in the menu is highlighted with a red box. In the list of states, 'California' is selected with a blue checkmark and is also highlighted with a red box. Other states listed include Alabama, Alaska, Arizona, Arkansas, Colorado, Connecticut, Delaware, District of Columbia, Florida, Georgia, and Hawaii. A search bar at the top right is labeled 'Search State'.

- Once all Filters are selected, click **Search** in the bottom right corner

An official website of the United States government [Here's how you know](#)

United States<sup>®</sup>  
Census  
Bureau

Search

Advanced Search

All Tables Maps Profiles Pages

Apps Help FAQ Feedback

**3 Filters**

Search for a filter or table

**Geographies**

- Nation >
- State >
- County >
- County Subdivision >
- Place >
- ZIP Code Tabulation Area >
- Metropolitan/Micropolitan Statistical Area >
- Census Tract >
- Block >
- Block Group >
- All Geographies >

**Topics**

- Business and Economy >
- Education >
- Employment >
- Families and Living Arrangements >

**Advanced Search**

Please select a filter to begin exploring U.S. Census Bureau data.

- Locate the B01001A-I series of tables from the ACS 1-Year Estimates.
- Data from all nine tables can be pulled from a single call using the API

United States<sup>®</sup> Census Bureau

Search [ ] [ ] [ ]

All **Tables** Maps Profiles Pages

710 Results

View: 10 | 25 | 50 [Download Table Data](#)

American Community Survey  
**B01001A** | Sex by Age (White Alone)  
[View All 26 Products](#)

American Community Survey  
**B01001B** | Sex by Age (Black or African American Alone)  
[View All 26 Products](#)

American Community Survey  
**B01001C** | Sex by Age (American Indian and Alaska Nati  
[View All 26 Products](#)

American Community Survey  
**B01001D** | Sex by Age (Asian Alone)  
[View All 26 Products](#)

American Community Survey  
**B01001E** | Sex by Age (Native Hawaiian and Other Pacif  
[View All 26 Products](#)

American Community Survey  
**B01001F** | Sex by Age (Some Other Race Alone)  
[View All 26 Products](#)

**B01001A** | Sex by Age (White Alone)

American Community Survey | Universe: People who are White alone | 2023: ACS 1-Year Estimates Detaile...

Please note that American Community Survey 1-Year estimates are published for geog

Label	California	
		Estimate
▼ Total:	Estimate	14,999,252
▼ Male:		7,509,060
Under 5 years		327,163
5 to 9 years		340,865
10 to 14 years		382,938
15 to 17 years		236,729
18 and 19 years		171,587
20 to 24 years		427,036
25 to 29 years		456,778
30 to 34 years		536,655
35 to 44 years		1,040,656
45 to 54 years		929,665
55 to 64 years		1,059,464



# Male under 5 Population for multiple races/ethnicities in California

- Select the American Community Survey 1-Year Data on the Available APIs page

via API. To make specific requests for the release of datasets, please sign up and submit your requests on our [Developer Forum](#).

Visit our [Discovery Tool page](#) to learn more.

[EXPAND ALL](#) | [COLLAPSE ALL](#)

⊖ American Community Survey (ACS)

---

## American Community Survey 1-Year Data (2005-2023)

September 12, 2024

Areas with populations of 65,000+. Covers a broad range of topics about social, economic, demographic, and housing characteristics of the U.S. population.

[>](#)

---

## American Community Survey 1-Year Supplemental Data (2014 - 2023)

- Under Detailed Tables, open the **Variables html link** and **Examples link** in new tabs

## Notes on ACS Estimate and Annotation Values

### Detailed Tables

- **Example Call:** `api.census.gov/data/2023/acs/acs1?get=NAME,group(B01001)&for=us:1&key=YOUR_KEY_GOES_HERE`
- 2023 ACS Detailed Tables Variables [\[html | xml | json\]](#)
- [ACS Technical Documentation](#)
- [Examples and Supported Geography](#)

### Subject Tables

- **Example Call:** `api.census.gov/data/2023/acs/acs1/subject?get=NAME,group(S0101)&for=us:1&key=YOUR_KEY_GOES_HERE`
- 2023 ACS Subject Tables Variables [\[html | xml | json\]](#)

<https://www.census.gov/data/developers/data-sets/acs-1year.html>

- Open either link for the State geography
- Update the URL to the California's state FIPs code (06)

*Census API: Examples for /data/2023/acs/acs1*

Geography Hierarchy	Geography Level	Example URL
us	010	<a href="https://api.census.gov/data/2023/acs/acs1?get=NAME,B01001_001E&amp;for=us:*&amp;key=YOUR_KEY_GOES_HERE">https://api.census.gov/data/2023/acs/acs1?get=NAME,B01001_001E&amp;for=us:*&amp;key=YOUR_KEY_GOES_HERE</a>
		<a href="https://api.census.gov/data/2023/acs/acs1?get=NAME,B01001_001E&amp;for=us:1&amp;key=YOUR_KEY_GOES_HERE">https://api.census.gov/data/2023/acs/acs1?get=NAME,B01001_001E&amp;for=us:1&amp;key=YOUR_KEY_GOES_HERE</a>
region	020	<a href="https://api.census.gov/data/2023/acs/acs1?get=NAME,B01001_001E&amp;for=region:*&amp;key=YOUR_KEY_GOES_HERE">https://api.census.gov/data/2023/acs/acs1?get=NAME,B01001_001E&amp;for=region:*&amp;key=YOUR_KEY_GOES_HERE</a>
		<a href="https://api.census.gov/data/2023/acs/acs1?get=NAME,B01001_001E&amp;for=region:3&amp;key=YOUR_KEY_GOES_HERE">https://api.census.gov/data/2023/acs/acs1?get=NAME,B01001_001E&amp;for=region:3&amp;key=YOUR_KEY_GOES_HERE</a>
division	030	<a href="https://api.census.gov/data/2023/acs/acs1?get=NAME,B01001_001E&amp;for=division:*&amp;key=YOUR_KEY_GOES_HERE">https://api.census.gov/data/2023/acs/acs1?get=NAME,B01001_001E&amp;for=division:*&amp;key=YOUR_KEY_GOES_HERE</a>
		<a href="https://api.census.gov/data/2023/acs/acs1?get=NAME,B01001_001E&amp;for=division:5&amp;key=YOUR_KEY_GOES_HERE">https://api.census.gov/data/2023/acs/acs1?get=NAME,B01001_001E&amp;for=division:5&amp;key=YOUR_KEY_GOES_HERE</a>
state	040	<a href="https://api.census.gov/data/2023/acs/acs1?get=NAME,B01001_001E&amp;for=state:*&amp;key=YOUR_KEY_GOES_HERE">https://api.census.gov/data/2023/acs/acs1?get=NAME,B01001_001E&amp;for=state:*&amp;key=YOUR_KEY_GOES_HERE</a>
		<a href="https://api.census.gov/data/2023/acs/acs1?get=NAME,B01001_001E&amp;for=state:06&amp;key=YOUR_KEY_GOES_HERE">https://api.census.gov/data/2023/acs/acs1?get=NAME,B01001_001E&amp;for=state:06&amp;key=YOUR_KEY_GOES_HERE</a>
state > county	050	<a href="https://api.census.gov/data/2023/acs/acs1?get=NAME,B01001_001E&amp;for=county:*&amp;key=YOUR_KEY_GOES_HERE">https://api.census.gov/data/2023/acs/acs1?get=NAME,B01001_001E&amp;for=county:*&amp;key=YOUR_KEY_GOES_HERE</a>
		<a href="https://api.census.gov/data/2023/acs/acs1?get=NAME,B01001_001E&amp;for=county:*&amp;in=state:*&amp;key=YOUR_KEY_GOES_HERE">https://api.census.gov/data/2023/acs/acs1?get=NAME,B01001_001E&amp;for=county:*&amp;in=state:*&amp;key=YOUR_KEY_GOES_HERE</a>
		<a href="https://api.census.gov/data/2023/acs/acs1?get=NAME,B01001_001E&amp;for=county:037&amp;in=state:06&amp;key=YOUR_KEY_GOES_HERE">https://api.census.gov/data/2023/acs/acs1?get=NAME,B01001_001E&amp;for=county:037&amp;in=state:06&amp;key=YOUR_KEY_GOES_HERE</a>

```

api.census.gov/data/2023/acs/acs1?get=NAME,B01001_001E&for=state:06
Pretty-print 
[["NAME", "B01001_001E", "state"],
 ["California", "38965193", "06"]]

```

[https://api.census.gov/data/2023/acs/acs1?get=NAME,B01001\\_001E&for=state:06](https://api.census.gov/data/2023/acs/acs1?get=NAME,B01001_001E&for=state:06)

- Open the Variables link in your other tab
- Press **Ctrl+F** to open your browser's search feature, and search "B01001A"
- The variable for the Total Male Under 5 Population for the White alone race category is **B01001A\_003E**
- The variable for the Total Female Under 5 Population for the White alone race category is **B01001A\_018E**

Variable ID	Description	Category	Required	Units	Format	Other
<a href="#">B01001_048E</a>	Estimate!!Total:!!Female:!!80 to 84 years	SEX BY AGE	not required	0	int	<a href="#">B01001_048SM</a> , <a href="#">B01001_048MA</a>
<a href="#">B01001_049E</a>	Estimate!!Total:!!Female:!!85 years and over	SEX BY AGE	not required	0	int	<a href="#">B01001_049EA</a> , <a href="#">B01001_049M</a> , <a href="#">B01001_049MA</a>
<a href="#">B01001A_001E</a>	Estimate!!Total:	SEX BY AGE (WHITE ALONE)	not required	0	int	<a href="#">B01001A_001EA</a> , <a href="#">B01001A_001M</a> , <a href="#">B01001A_001MA</a>
<a href="#">B01001A_002E</a>	Estimate!!Total:!!Male:	SEX BY AGE (WHITE ALONE)	not required	0	int	<a href="#">B01001A_002EA</a> , <a href="#">B01001A_002M</a> , <a href="#">B01001A_002MA</a>
<a href="#">B01001A_003E</a>	Estimate!!Total:!!Male:!!Under 5 years	SEX BY AGE (WHITE ALONE)	not required	0	int	<a href="#">B01001A_003EA</a> , <a href="#">B01001A_003M</a> , <a href="#">B01001A_003MA</a>
<a href="#">B01001A_004E</a>			not			<a href="#">B01001A_004EA</a>

<https://api.census.gov/data/2023/acs/acs1/variables.html>

- Go back to your other tab where you are building out your API query
- Replace the default variable in the URL with **B01001A\_003E,B01001A\_018E** following NAME

A screenshot of a browser address bar. The URL is `api.census.gov/data/2023/acs/acs1?get=NAME,B01001A_003E,B01001A_018E&for=state:06`. A red horizontal bar redacts a portion of the URL, specifically the part after the first comma in the 'get' parameter.

 `api.census.gov/data/2023/acs/acs1?get=NAME,B01001A_003E,B01001A_018E&for=state:06`

[https://api.census.gov/data/2023/acs/acs1?get=NAME,B01001A\\_003E,B01001A\\_018E&for=state:06](https://api.census.gov/data/2023/acs/acs1?get=NAME,B01001A_003E,B01001A_018E&for=state:06)

- Navigate back to the Variables link in the other tab
- Press Ctrl+F to open your browser's search feature, and search "B01001B"
- The variable for the Total Male Under 5 Population for Black or African American Alone race is **B01001B\_003E**
- The variable for the Total Female Under 5 Population for Black or African American Alone race is **B01001B\_018E**

Variable ID	Description	Category	Required	Links	Value	Type	Other
<a href="#">B01001A_030E</a>	Estimate!!Total:!!Female:!!75 to 84 years	SEX BY AGE (WHITE ALONE)	not required	<a href="#">B01001A_030M.</a> <a href="#">B01001A_030MA</a>	0	int	<a href="#">B01001A_030E</a>
<a href="#">B01001A_031E</a>	Estimate!!Total:!!Female:!!85 years and over	SEX BY AGE (WHITE ALONE)	not required	<a href="#">B01001A_031EA.</a> <a href="#">B01001A_031M.</a> <a href="#">B01001A_031MA</a>	0	int	<a href="#">B01001A_031E</a>
<a href="#">B01001B_001E</a>	Estimate!!Total:	SEX BY AGE (BLACK OR AFRICAN AMERICAN ALONE)	not required	<a href="#">B01001B_001EA.</a> <a href="#">B01001B_001M.</a> <a href="#">B01001B_001MA</a>	0	int	<a href="#">B01001B_001E</a>
<a href="#">B01001B_002E</a>	Estimate!!Total:!!Male:	SEX BY AGE (BLACK OR AFRICAN AMERICAN ALONE)	not required	<a href="#">B01001B_002EA.</a> <a href="#">B01001B_002M.</a> <a href="#">B01001B_002MA</a>	0	int	<a href="#">B01001B_002E</a>
<a href="#">B01001B_003E</a>	Estimate!!Total:!!Male:!!Under 5 years	SEX BY AGE (BLACK OR AFRICAN AMERICAN ALONE)	not required	<a href="#">B01001B_003EA.</a> <a href="#">B01001B_003M.</a> <a href="#">B01001B_003MA</a>	0	int	<a href="#">B01001B_003E</a>
<a href="#">B01001B_004E</a>	Estimate!!Total:!!Female:!!5 to 14 years	SEX BY AGE (BLACK OR AFRICAN AMERICAN ALONE)	not required	<a href="#">B01001B_004EA.</a> <a href="#">B01001B_004M.</a> <a href="#">B01001B_004MA</a>	0	int	<a href="#">B01001B_004E</a>

<https://api.census.gov/data/2023/acs/acs1/variables.html>

- Go back to your other tab where you are building out your API query
- Add in variables B01001B\_003E,B01001B\_018E after the previous variable
  - Variables need to be separated by commas

api.census.gov/data/2023/acs/acs1?get=NAME,B01001A\_003E,B01001A\_018E,B01001B\_003E,B01001B\_018E&for=state:06

[https://api.census.gov/data/2023/acs/acs1?get=NAME,B01001A\\_003E,B01001A\\_018E,B01001B\\_003E,  
B01001B\\_018E&for=state:06](https://api.census.gov/data/2023/acs/acs1?get=NAME,B01001A_003E,B01001A_018E,B01001B_003E,B01001B_018E&for=state:06)

- Repeat the steps of searching and adding in variables for the desired racial and ethnic groups
  - You can add up to 50 variables in a single API query
- In the example below, we are looking at the Male/Female under 5 population for the White alone, Black alone, and Hispanic or Latino alone population in California from the 2023 ACS 1-Year Estimates

```
← → ↻ 🏠 🌐 api.census.gov/data/2023/acs/acs1?get=NAME,B01001A_003E,B01001A_018E,B01001B_003E,B01001B_018E,B01001I_003E,B01001I_018E&for=state:06  
pretty-print   
["NAME","B01001A_003E","B01001A_018E","B01001B_003E","B01001B_018E","B01001I_003E","B01001I_018E","state"],  
"California","327163","311763","53800","51041","544359","524974","06"]]
```

[https://api.census.gov/data/2023/acs/acs1?get=NAME,B01001A\\_003E,B01001A\\_018E,B01001B\\_003E,B01001B\\_018E,B01001I\\_003E,B01001I\\_018E&for=state:06](https://api.census.gov/data/2023/acs/acs1?get=NAME,B01001A_003E,B01001A_018E,B01001B_003E,B01001B_018E,B01001I_003E,B01001I_018E&for=state:06)



# Groups Functionality – Get All Results for a Table

- Add **group([insert table id])** as a variable in the query
  - Example: **group(B01001A)**
- Pull results for more than 50 variables in a single call
- Pull data from tables not available on [data.census.gov](https://data.census.gov)
  - Example: 2005 ACS 1-Year Estimates

# Census API

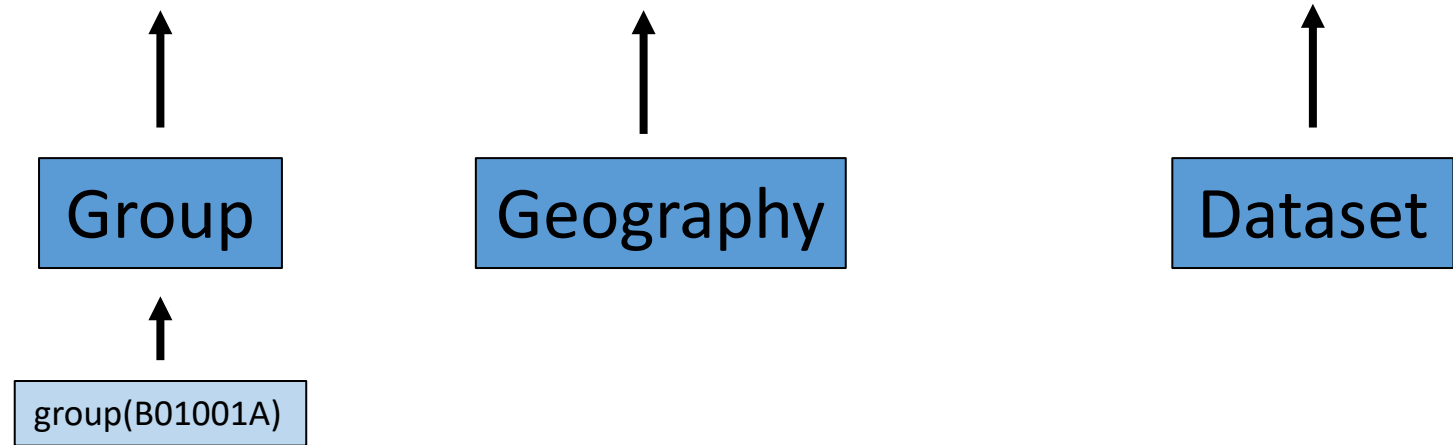
## Accessing and downloading an entire table

- Download a Sex by Age table (B01001A) for all Places in California using the 2005 ACS 1-Year Estimates

# Census API

## Accessing and downloading an entire table

- Download a Sex by Age table (B01001A) for all Places in California using the 2005 ACS 1-Year Estimates



# Tutorial on adding in variable names to downloaded tables

- <https://www.youtube.com/watch?v=Gv95TSk5nNI>
  - If you already have your table downloaded as a CSV, skip to [6:48](#) in the video for instructions on cleaning up the file and adding in variable labels

	A	B	C	D
1	["DP03_0001E"	DP03_0001EA	DP03_0001M	DP03_0001MA
2	["61725"	null	462	null
3	["134883"	null	2275	null
4	["80215"	null	490	null
5	["246271"	null	2774	null
6	["579116"	null	1572	null
7	["53816"	null	769	null
8	["116771"	null	2057	null
9	["105687"	null	779	null
10	["731319"	null	1457	null
11	["75435"	null	670	null
12	["739261"	null	2580	null
13	["120165"	null	766	null
14	["689845"	null	1552	null

Initial download of DP03 from the API



	A	B	C
1	NAME	DP03_0001E	DP03_0001EA
2		Estimate!!EMPLOYMENT STATUS!!Population 16 years and over	#N/A
3	Aberdeen, WA Micro Area	61725	null
4	Abilene, TX Metro Area	134883	null
5	Adrian, MI Micro Area	80215	null
6	Aguadilla-Isabela, PR Metro Area	246271	null
7	Akron, OH Metro Area	579116	null
8	Alamogordo, NM Micro Area	53816	null
9	Albany, GA Metro Area	116771	null
10	Albany-Lebanon, OR Metro Area	105687	null

Edited download with data cleaned up and variable labels added in

# Download table B01001A for all Places in California for the year 2005

- Select the American Community Survey 1-Year Data on the Available APIs page

The screenshot shows the 'Available APIs' page on the Census.gov website. The page has a breadcrumb trail: // Census.gov / Data / Developers / Available APIs. On the left, there is a navigation menu with links: Within Developers, About, App Gallery, Available APIs (highlighted with a red box), Developers' Forum, Geography, Guidance for Developers, News, Terms of Service, and Updates. The main content area has a large heading 'Available APIs' and a 'Share' button. Below the heading, there is introductory text and a 'NEW' announcement about a machine-readable dataset discovery service. There are links for 'EXPAND ALL' and 'COLLAPSE ALL'. A dropdown menu is open, showing 'American Community Survey (ACS)'. Below this, a card for 'American Community Survey 1-Year Data (2005-2022)' is highlighted with a red box. The card includes the date 'September 14, 2023' and a description: 'Areas with populations of 65,000+. Covers a broad range of topics about social, economic, demographic, and housing characteristics of the U.S. population.' There is a blue arrow icon at the bottom right of the card. In the bottom left corner of the screenshot, there is a 'Request a' button.

- Using the More dropdown menu, change the year from 2023 to **2005**

groups. The data are presented as population counts for the total population and various subgroups and percentages.

For more information about the data available in the ACS, please visit [its data users page](#).

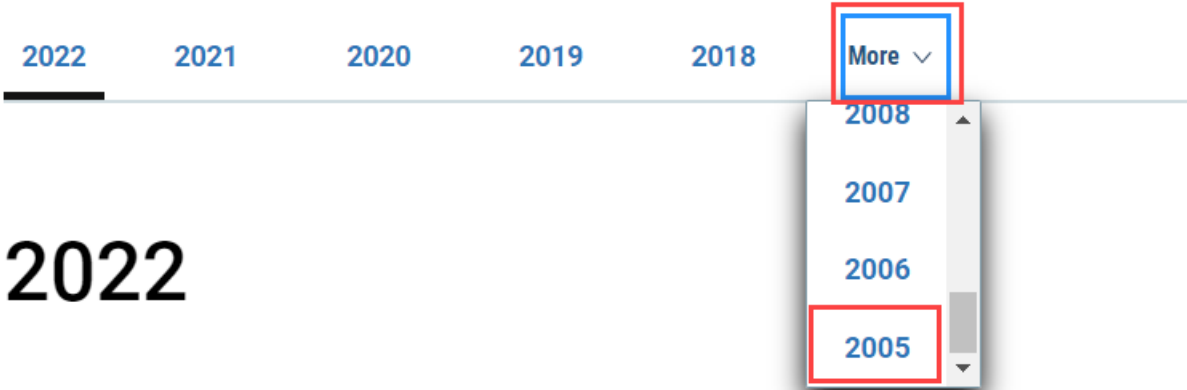
[2022](#)   [2021](#)   [2020](#)   [2019](#)   [2018](#)   [More ▾](#)

---

**2022**

**Variable Changes**

Variables, and the values they represent, may change over time. Use this [2022 1YR API Changes document](#) as a guide for which variables have changed from the



<https://www.census.gov/data/developers/data-sets/acs-1year.html>

- Under Detailed Tables, open **Examples and Supported Geography**

## 2005

### Detail Tables

- **Example Call:** [api.census.gov/data/2005/acs/acs1?get=NAME,B01001\\_001E&for=state:\\*&key=YOUR\\_KEY\\_GOES\\_HERE](https://api.census.gov/data/2005/acs/acs1?get=NAME,B01001_001E&for=state:*&key=YOUR_KEY_GOES_HERE)
- 2005 ACS Detail Table Variables [ [html](#) | [xml](#) | [json](#) ]
- [ACS Technical Documentation](#)
- [Examples and Supported Geography](#)

### Data Profile

<https://www.census.gov/data/developers/data-sets/acs-1year.2005.html>

- Open the **Variables** and **Examples** links in new tabs

*Census API: Datasets in /data/2005/acs/acs1 and its descendants*

Title	Description	Vintage	Dataset Name	Dataset Type	Geography List	Variable List	Group List	SortList	Examples	Developer Documentation	API Base URL
American Community Survey: 1-Year Estimates: Detailed Tables 1-Year	The American Community Survey (ACS) is an ongoing survey that provides data every year -- giving communities the current information they need to plan investments and services. The ACS covers a broad range of topics about social, economic, demographic, and housing characteristics of the U.S. population. Much of the ACS data provided on the Census Bureau's Web site are available separately by age group, race, Hispanic origin, and sex. Summary files, Subject tables, Data profiles, and Comparison profiles are available for the nation, all 50 states, the District of Columbia, Puerto Rico, every congressional district, every metropolitan area, and all counties and places with populations of 65,000 or more. Detail Tables contain the most detailed cross-tabulations published for areas 65k and more. The data are population counts. There are over 31,000 variables in this dataset.	2005	acs acs1	Aggregate	<a href="#">geographies</a>	<a href="#">variables</a>	<a href="#">groups</a>	<a href="#">sorts</a>	<a href="#">examples</a>	<a href="#">documentation</a>	<a href="http://api.census.gov/data/2005/acs/acs1">http://api.census.gov/data/2005/acs/acs1</a>

<https://api.census.gov/data/2005/acs/acs1.html>



- Go to the Examples page
- Under the state > place geography, open the 2<sup>nd</sup> link which has **&for=place:\*&in=state:\*** in the URL

subdivision		<a href="https://api.census.gov/data/2005/acs/acs1?get=NAME,B01001_001E&amp;for=county%20subdivision:08070&amp;in=state:09%20county:001&amp;key=YOUR_KEY_GOES_HERE">https://api.census.gov/data/2005/acs/acs1?get=NAME,B01001_001E&amp;for=county%20subdivision:08070&amp;in=state:09%20county:001&amp;key=YOUR_KEY_GOES_HERE</a>
state > place	160	<a href="https://api.census.gov/data/2005/acs/acs1?get=NAME,B01001_001E&amp;for=place:*&amp;key=YOUR_KEY_GOES_HERE">https://api.census.gov/data/2005/acs/acs1?get=NAME,B01001_001E&amp;for=place:*&amp;key=YOUR_KEY_GOES_HERE</a> <a href="https://api.census.gov/data/2005/acs/acs1?get=NAME,B01001_001E&amp;for=place:*&amp;in=state:*&amp;key=YOUR_KEY_GOES_HERE">https://api.census.gov/data/2005/acs/acs1?get=NAME,B01001_001E&amp;for=place:*&amp;in=state:*&amp;key=YOUR_KEY_GOES_HERE</a> <a href="https://api.census.gov/data/2005/acs/acs1?get=NAME,B01001_001E&amp;for=place:07000&amp;in=state:01&amp;key=YOUR_KEY_GOES_HERE">https://api.census.gov/data/2005/acs/acs1?get=NAME,B01001_001E&amp;for=place:07000&amp;in=state:01&amp;key=YOUR_KEY_GOES_HERE</a>
american indian		

<https://api.census.gov/data/2005/acs/acs1/examples.html>

- Update the URL by replacing NAME,B01001\_001E with **group(B01001A)**
- Update the geography with the state FIPs code for California, **06**
- Press Enter to reload the page

```

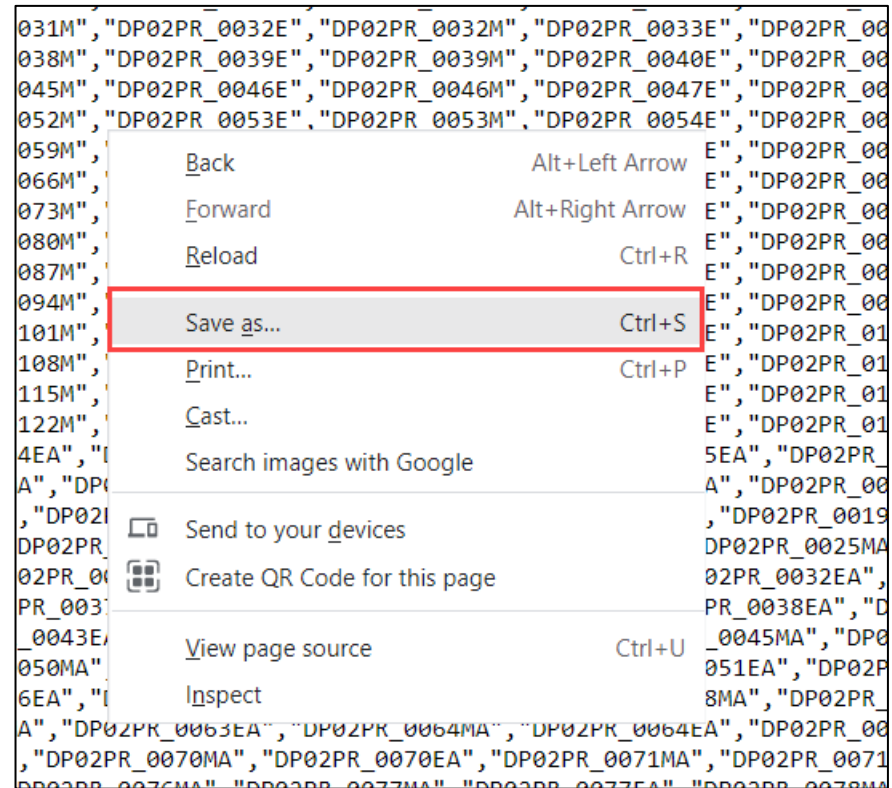
← → ↻ 🏠 📄 api.census.gov/data/2005/acs/acs1?get=group(B01001A)&for=place:*&in=state:06
Pretty-print ☐
["GEO_ID","B01001A_001E","B01001A_001M","B01001A_002E","B01001A_002M","B01001A_003E","B01001A_003M","B01001A_004E","B01001A_004M","B01001A_005E","B01001A_005M","B01001A_006E","B01001A_006M","B01001A_007E","B01001A_007M","B01001A_008E","B01001A_008M","B01001A_009E","B01001A_009M","B01001A_010E","B01001A_010M","B01001A_011E","B01001A_011M","B01001A_012E","B01001A_012M","B01001A_013E","B01001A_013M","B01001A_014E","B01001A_014M","B01001A_015E","B01001A_015M","B01001A_016E","B01001A_016M","B01001A_017E","B01001A_017M","B01001A_018E","B01001A_018M","B01001A_019E","B01001A_019M","B01001A_020E","B01001A_020M","B01001A_021E","B01001A_021M","B01001A_022E","B01001A_022M","B01001A_023E","B01001A_023M","B01001A_024E","B01001A_024M","B01001A_025E","B01001A_025M","B01001A_026E","B01001A_026M","B01001A_027E","B01001A_027M","B01001A_028E","B01001A_028M","B01001A_029E","B01001A_029M","B01001A_030E","B01001A_030M","B01001A_031E","B01001A_031M","NAME","B01001A_001MA","B01001A_002MA","B01001A_003MA","B01001A_004MA","B01001A_005MA","B01001A_006MA","B01001A_007MA","B01001A_008MA","B01001A_009MA","B01001A_010MA","B01001A_011MA","B01001A_012MA","B01001A_013MA","B01001A_014MA","B01001A_015MA","B01001A_016MA","B01001A_017MA","B01001A_018MA","B01001A_019MA","B01001A_020MA","B01001A_021MA","B01001A_022MA","B01001A_023MA","B01001A_024MA","B01001A_025MA","B01001A_026MA","B01001A_027MA","B01001A_028MA","B01001A_029MA","B01001A_030MA","B01001A_031MA","state","place"],
["1600000US0600562","42022","5008","20960","2992","1613","853","1389","655","1471","851","230","189","247","325","745","383","179","173","21062","3162","2310","1280","1646","725","702","424","281","211","124","205","777","458","535","333","2965","100000US0600884","21150","4273","10032","2100","755","494","223","290","460","330","188","135","173","168","497","368","11118","2532","1513","839","1135","1057","434","263","501","349","71","117","345","278","531","392","661","402"],
]

```

[https://api.census.gov/data/2005/acs/acs1?get=group\(B01001A\)&for=place:\\*&in=state:06](https://api.census.gov/data/2005/acs/acs1?get=group(B01001A)&for=place:*&in=state:06)

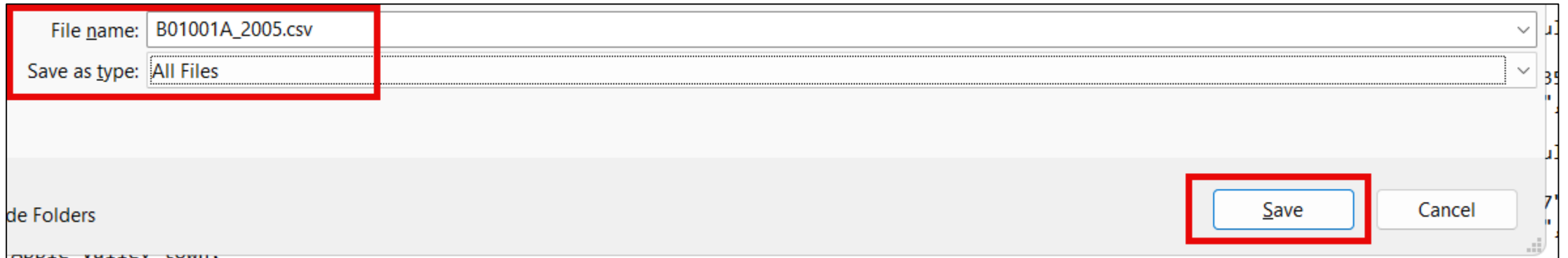


- Right click anywhere on the page and choose **Save As**



[https://api.census.gov/data/2005/acs/acs1?get=group\(B01001A\)&for=place:\\*&in=state:06](https://api.census.gov/data/2005/acs/acs1?get=group(B01001A)&for=place:*&in=state:06)

- Name your file – The file name can be anything, however there must be a **.csv** at the end of the file name
- Change the Save as type to **All files**
- Click **Save**



[https://api.census.gov/data/2005/acs/acs1?get=group\(B01001A\)&for=place:\\*&in=state:06](https://api.census.gov/data/2005/acs/acs1?get=group(B01001A)&for=place:*&in=state:06)

- Open the saved file
- First, to locate the geography NAME column - Press **Ctrl+F** in Excel and search for **California**

The screenshot shows the 'Find and Replace' dialog box in Microsoft Excel. The 'Find what' field is set to 'California'. The 'Find Next' button is highlighted with a red box. The background spreadsheet shows a table with a 'NAME' column containing city names in California.

Book	Sheet	Name	Cell	Value	Formula	
2008	030	491	383	429	344	333
1858	610	432	283	144	173	0
6228	1417	3044	716	3283	1314	810

Spreadsheet Data (NAME column):

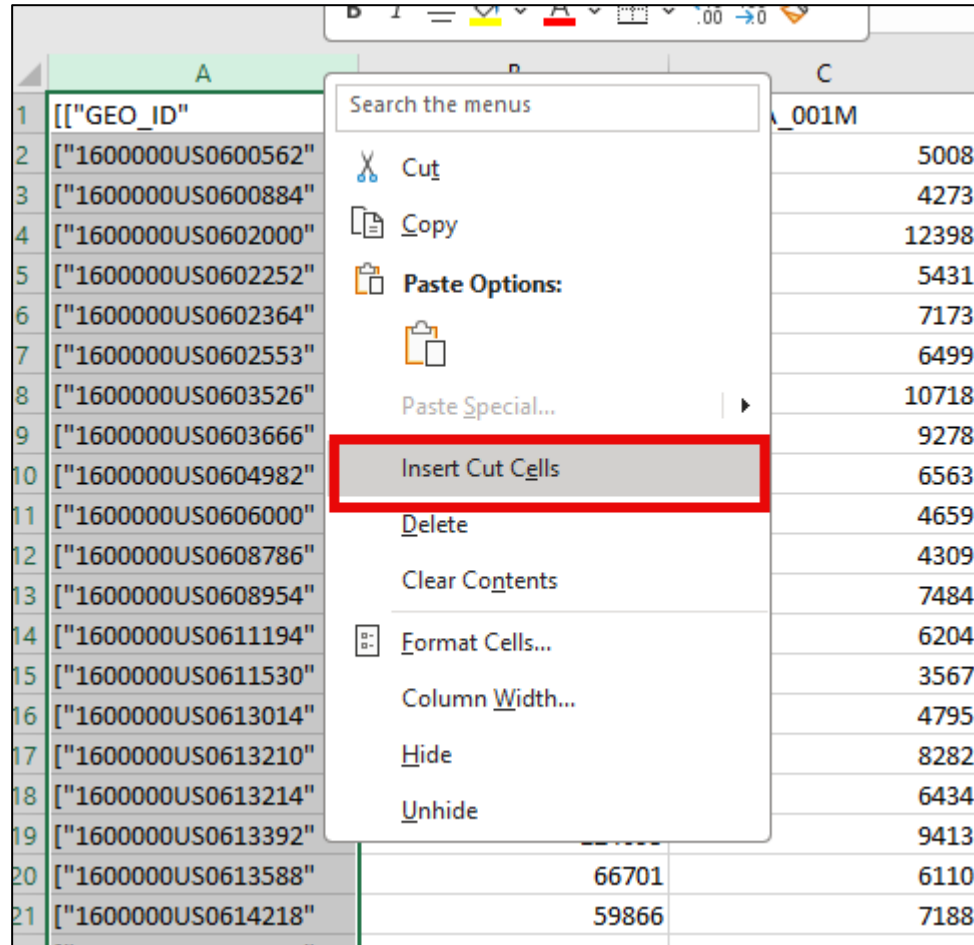
NAME
Alameda city, California
Alhambra city, California
Anaheim city, California
Antioch city, California
Apple Valley town, California
Arden-Arcade CDP, California
Bakersfield city, California
Baldwin Park city, California
Bellflower city, California
Berkeley city, California
Buena Park city, California
Burbank city, California
Carlsbad city, California
Carson city, California
Chico city, California
Chino city, California
Chino Hills city, California
Chula Vista city, California

- **Right click on the NAME column and choose **Cut****

The screenshot shows an Excel spreadsheet with a right-click context menu open over the 'NAME' column. The 'Cut' option is highlighted with a red box. The spreadsheet contains a list of California cities in the 'NAME' column and 'null' values in other columns.

	BL	RM	RN	RO	BP
	NAME				001A_
1	Alameda city, California				
1	Alhambra city, California				
7	Anaheim city, California				
3	Antioch city, California				
5	Apple Valley town, California				
9	Arden-Arcade CDP, California				
7	Bakersfield city, California				
6	Baldwin Park city, California				
8	Bellflower city, California				
0	Berkeley city, California				
1	Buena Park city, California				
8	Burbank city, California				
7	Carlsbad city, California				
3	Carson city, California				
2	Chico city, California				
9	Chino city, California				
3	Chino Hills city, California				
8	Chula Vista city, California				
5	Citrus Heights city, California	null	null	null	null
6	Clovis city, California	null	null	null	null

- **Right click** on the Column A and choose **Insert Cut Cells**
  - This will place the geography names in Column A to make the file easier to read



	A	B	C
1	[["GEO_ID"		_001M
2	[["1600000US0600562"		5008
3	[["1600000US0600884"		4273
4	[["1600000US0602000"		12398
5	[["1600000US0602252"		5431
6	[["1600000US0602364"		7173
7	[["1600000US0602553"		6499
8	[["1600000US0603526"		10718
9	[["1600000US0603666"		9278
10	[["1600000US0604982"		6563
11	[["1600000US0606000"		4659
12	[["1600000US0608786"		4309
13	[["1600000US0608954"		7484
14	[["1600000US0611194"		6204
15	[["1600000US0611530"		3567
16	[["1600000US0613014"		4795
17	[["1600000US0613210"		8282
18	[["1600000US0613214"		6434
19	[["1600000US0613392"		9413
20	[["1600000US0613588"	66701	6110
21	[["1600000US0614218"	59866	7188

- Back on the Variables page in your browser, search using **Ctrl+F** for **B01001A**
- These are the variables that will match up with the Excel file

Variable ID	Description	Category	Required	Units	Format	Matched Variables
<a href="#">B01001_048E</a>	Estimate!!Total!!Female!!80 to 84 years	SEX BY AGE	required			<a href="#">B01001_048MA</a>
<a href="#">B01001_049E</a>	Estimate!!Total!!Female!!85 years and over	SEX BY AGE	not required	0	int	<a href="#">B01001_049EA</a> , <a href="#">B01001_049M</a> , <a href="#">B01001_049MA</a>
<a href="#">B01001A_001E</a>	Estimate!!Total	SEX BY AGE (WHITE ALONE)	not required	0	int	<a href="#">B01001A_001EA</a> , <a href="#">B01001A_001M</a> , <a href="#">B01001A_001MA</a>
<a href="#">B01001A_002E</a>	Estimate!!Total!!Male	SEX BY AGE (WHITE ALONE)	not required	0	int	<a href="#">B01001A_002EA</a> , <a href="#">B01001A_002M</a> , <a href="#">B01001A_002MA</a>
<a href="#">B01001A_003E</a>	Estimate!!Total!!Male!!Under 5 years	SEX BY AGE (WHITE ALONE)	not required	0	int	<a href="#">B01001A_003EA</a> , <a href="#">B01001A_003M</a> , <a href="#">B01001A_003MA</a>

	A	B	C	D	E	
	NAME	[["GEO_ID"	B01001A_001E	B01001A_001M	B01001A_002E	B01001
	Alameda city, California	[["1600000US0600562"	42022	5008	20960	
	Alhambra city, California	[["1600000US0600884"	21150	4273	10032	
	Anaheim city, California	[["1600000US0602000"	199851	12398	99974	
	Antioch city, California	[["1600000US0602252"	49114	5431	25623	
	Apple Valley town, Califor	[["1600000US0602364"	47553	7173	23860	
	Arden-Arcade CDP, Califor	[["1600000US0602553"	71721	6499	34852	
	Bakersfield city, California	[["1600000US0603526"	168271	10718	81313	



- For instructions on pulling the variable labels directly into Excel, see this video:
  - <https://www.census.gov/library/video/2020/using-api-all-results-for-acs-table.html>

	A	B	C	D	E	F	G	B
1	NAME	[["GEO_ID"	B01001A_001E	B01001A_001M	B01001A_002E	B01001A_002M	B01001A_003E	B
2			Estimate!!Total	#N/A	Estimate!!Total!!Male	#N/A	Estimate!!Total!!Male!! Under 5 years	
3	Alameda city, California	["1600000US0600562"	42022	5008	20960	2992	1613	
4	Alhambra city, California	["1600000US0600884"	21150	4273	10032	2100	755	
5	Anaheim city, California	["1600000US0602000"	199851	12398	99974	6946	8718	
6	Antioch city, California	["1600000US0602252"	49114	5431	25623	3147	2484	
7	Apple Valley town, Californ	["1600000US0602364"	47553	7173	23860	3858	2245	
8	Arden-Arcade CDP, Califor	["1600000US0602553"	71721	6499	34852	4172	1927	
9	Bakersfield city, California	["1600000US0603526"	168271	10718	81313	5940	6352	
10	Baldwin Park city, Californ	["1600000US0603666"	32968	9278	14950	3776	1206	

# Census API

## Accessing Microdata via MDAT and the API

- Find single year of age data using the 2022 ACS 5-Year Public Use Microdata Sample (PUMS) Estimates for the Sacramento County (Northeast) PUMA

# Dual Vintages

- **2022 5-year estimates are the first to use both 2010 and 2020 PUMA boundaries**
  - **2022 5-year estimates comprised of 2018, 2019, 2020, 2021, and 2022**
    - 2018 – uses 2010 PUMA boundaries
    - 2019 – uses 2010 PUMA boundaries
    - 2020 – uses 2010 PUMA boundaries
    - 2021 – uses 2010 PUMA boundaries
    - **2022 – uses 2020 PUMA boundaries**
  - **2023 5-year estimates comprised of 2019, 2020, 2021, 2022, and 2023**
    - 2019 – uses 2010 PUMA boundaries
    - 2020 – uses 2010 PUMA boundaries
    - 2021 – uses 2010 PUMA boundaries
    - **2022 – uses 2020 PUMA boundaries**
    - **2023 – uses 2020 PUMA boundaries**

# Dual Vintages Continue Until Release of 2026 5-Year PUMS

- **2022 5-year estimates** comprised of 2018, 2019, 2020, 2021, and 2022
  - 2018 – uses 2010 PUMA boundaries
  - 2019 – uses 2010 PUMA boundaries
  - 2020 – uses 2010 PUMA boundaries
  - 2021 – uses 2010 PUMA boundaries
  - 2022 – uses 2020 PUMA boundaries
- **2023 5-year estimates** comprised of 2019, 2020, 2021, 2022, and 2023
  - 2019 – uses 2010 PUMA boundaries
  - 2020 – uses 2010 PUMA boundaries
  - 2021 – uses 2010 PUMA boundaries
  - 2022 – uses 2020 PUMA boundaries
  - 2023 – uses 2020 PUMA boundaries
- **2024 5-year estimates** comprised of 2020, 2021, 2022, 2023, and 2024
  - 2020 – uses 2010 PUMA boundaries
  - 2021 – uses 2010 PUMA boundaries
  - 2022 – uses 2020 PUMA boundaries
  - 2023 – uses 2020 PUMA boundaries
  - 2024 – uses 2020 PUMA boundaries
- **2025 5-year estimates** comprised of 2021, 2022, 2023, 2024, and 2025
  - 2021 – uses 2010 PUMA boundaries
  - 2022 – uses 2020 PUMA boundaries
  - 2023 – uses 2020 PUMA boundaries
  - 2024 – uses 2020 PUMA boundaries
  - 2025 – uses 2020 PUMA boundaries
- **2026 5-year estimates** comprised of 2022, 2023, 2024, 2025, and 2026
  - 2022 – uses 2020 PUMA boundaries
  - 2023 – uses 2020 PUMA boundaries
  - 2024 – uses 2020 PUMA boundaries
  - 2025 – uses 2020 PUMA boundaries
  - 2026 – uses 2020 PUMA boundaries

No more dual vintages until 2030 Census

# Alternatives to using dual vintage PUMAs

- Please be aware that the process to create custom tables on MDAT for ACS 5-year PUMS with dual vintage PUMAs data is difficult.
- If you need data for multiple PUMAs, you may want to consider other alternatives such as:
  1. Using ACS 1-year PUMS instead of ACS 5-year PUMS.
  2. Using vintages of the ACS 5-year PUMS that do not contain dual-vintage PUMAs, such as the 2021 ACS 5-year PUMS.
  3. Downloading microdata from the ACS FTP site to create custom tables using your own statistical software instead of using MDAT.

# Getting data on dual vintages

- The process to get a create a custom table for ACS 5-year PUMS with dual vintage PUMAs on the Microdata Access Tool includes a minimum of 3 steps:
  1. Create one MDAT table using the PUMA10 variable
  2. Create a separate MDAT table using the PUMA20 variable
  3. Add data together to get the overall estimate, taking into account geography changes between the vintage.
  4. (Optional) – Get the API queries for your created tables

# Census API

## Accessing Microdata via MDAT and the API

- Find single year of age data using the 2022 ACS 5-Year Public Use Microdata Sample (PUMS) Estimates for the Sacramento County (Northeast) PUMA

# Census API

## Accessing Microdata via MDAT and the API

- Find single year of age data using the 2022 ACS 5-Year Public Use Microdata Sample (PUMS) Estimates for the Sacramento County (Northeast) PUMA

Dataset

→ 2022 ACS 5-Year PUMS

Geography

→ Sacramento County NE PUMA (PUMA10/PUMA20 code: 06712)

Variable

→ Single year of age (AGEP)



- Visit Microdata Access at [data.census.gov/mdat](https://data.census.gov/mdat)

The screenshot shows a web browser window with the address bar containing [data.census.gov/mdat/#/](https://data.census.gov/mdat/#/). The page header features the United States Census Bureau logo and the text "Explore Data". The main heading is "Select a Dataset & Vintage". Below this, there are two selection fields: "Select Dataset" with the value "ACS 1-Year Estimates Public Use Microdata Sample" and "Select Vintage" with the value "2021". A teal "NEXT" button is located at the bottom right. In the bottom left corner, there is a "Send Feedback" link with the email address [census.data@census.gov](mailto:census.data@census.gov).

- Choose Dataset and Vintage:
  - Dataset – ACS 5-Year Estimates – Public Use Microdata Sample
  - Vintage – 2022
  - Click **Next** in the lower right

**Select a Dataset & Vintage**

Select Dataset ACS 5-Year Estimates Public Use Microdata Sample  
ACSPUMS5Y

Select Vintage 2022  
2022

Send Feedback  
census.data@census.gov

NEXT

- **Search for Variables:** Use the search box below “Variable” or “Label” to find your variables of interest

SELECT VARIABLES   SELECT GEOGRAPHIES   DATA CART (0)   TABLE LAYOUT   DOWNLOAD

filter by Topic Search is not enabled in this beta version **SEARCH**

Showing 218 of 519 Variables Select at least one variable to start

	Variable	Label	Number of Values	Type	
<input type="checkbox"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	(3) Edited Items, Estimate, Recod	
<input type="checkbox"/>	COW	Class of worker	10	Edited Items	<a href="#">▼ DETAILS</a>
<input type="checkbox"/>	GCL	Grandparents living with grandchildren	3	Edited Items	<a href="#">▼ DETAILS</a>
<input type="checkbox"/>	VACS	Vacancy status	8	Edited Items	<a href="#">▼ DETAILS</a>
<input type="checkbox"/>	ANC	Ancestry recode	5	Recodes	<a href="#">▼ DETAILS</a>
<input type="checkbox"/>	ESR	Employment status recode	7	Recodes	<a href="#">▼ DETAILS</a>
<input type="checkbox"/>	NWAB	Temporary absence from work (UNEDITED-See 'Employ...	4	Recodes	<a href="#">▼ DETAILS</a>

Dataset: ACS 5-Year Estimates Public Use Microdata Sample (2021) [CHANGE](#) **VIEW TABLE**

- **Select variable for Age:**
  - Type “AGEP” in the Variable search box or type “Age” in the label search box
  - Check the box to the left of AGEP to add the variable to your data cart
  - Notice the message at the top of the screen saying you will need to create your own categories (or recodes) for this variable if you want it shown in the table. (You will do this action in the Data Cart)

This variable is continuous and can only go to "Values in table cells". Create a group (recode) to use elsewhere. "Age (AGEP)"

SELECT VARIABLES   SELECT GEOGRAPHIES   DATA CART (1)   TABLE LAYOUT   DOWNLOAD

filter by Topic   Search is not enabled in this beta version   SEARCH

Showing 2 of 519 Variables   Selected: 1 variable (1 column, 1 row)

Variable	Label	Number of Values	Type
<input checked="" type="checkbox"/> agep	age	2	(3) Edited Items, Estimate, Recode
AGEP	Age		Estimate

**Description:**  
Age

**Values:**

- 1 to 99 -- 1 to 99 years (Top-coded)
- 0 -- Under 1 year

[^ DETAILS](#)

- Select variable for 2010 PUMAs:
  - Type 'PUMA' in the label search box
  - Check the box to the left of 'PUMA10' to add the variable to data cart

SELECT VARIABLES   SELECT GEOGRAPHIES   DATA CART (2)   TABLE LAYOUT   DOWNLOAD

Showing 6 of 522 Variables Selected: 2 variables (1 column, 983 rows)

	Variable	Label	Number of Values	Type	
	<input type="text" value=""/>	<input type="text" value="puma"/>	<input type="text" value=""/>	<input type="text" value="(3) Edited Items, Estimate, Recd"/>	
<input type="checkbox"/>	MIGPUMA10	Migration PUMA based on 2010 Census definition f...	231	Estimate	▼ DETAILS
<input type="checkbox"/>	MIGPUMA20	Migration PUMA based on 2020 Census definition f...	236	Estimate	▼ DETAILS
<input type="checkbox"/>	POWPUMA10	Place of work PUMA based on 2010 Census definiti...	230	Estimate	▼ DETAILS
<input type="checkbox"/>	POWPUMA20	Place of work PUMA based on 2020 Census definiti...	235	Estimate	▼ DETAILS
<input checked="" type="checkbox"/>	PUMA10	Public use microdata area code (PUMA) based on 2...	983	Estimate	▼ DETAILS
<input type="checkbox"/>	PUMA20	Public use microdata area code (PUMA) based on 2...	1151	Estimate	▼ DETAILS

Dataset: ACS 5-Year Estimates Public Use Microdata Sample (2022) [CHANGE](#) VIEW TABLE

- Select California state geography.
  - Click on the Select Geographies tab
  - Check the box to the left 'California' to only pull up data for PUMAs from California

The screenshot shows a web interface for selecting geographies. At the top, there are navigation tabs: 'SELECT VARIABLES', 'SELECT GEOGRAPHIES' (which is active and underlined in orange), 'DATA CART (2)', 'TABLE LAYOUT', and 'DOWNLOAD'. Below the tabs, there are two main columns. The left column is titled 'GEOGRAPHIES' and contains three options: 'Region', 'Division', and 'State'. The 'State' option is highlighted with a grey background and a red vertical bar on its left. The right column is titled 'STATE' and contains a list of US states with checkboxes. The 'California' entry has a checked checkbox and is enclosed in a red rectangular box. Other states listed include Alabama, Alaska, Arizona, Arkansas, Colorado, Connecticut, Delaware, District of Columbia, and Florida. At the bottom of the interface, there is a label 'Dataset: ACS 5-Year Estimates Public Use Microdata Sample (2022)' followed by a blue 'CHANGE' link.

- Categorize (recode) your variable:
  - Move to the Data Cart tab
  - Click the AGEP variable on the left
  - Click **Create Custom Group** to begin specifying your age groups (e.g. single years of age)

**Custom Table** CUSTOMIZE VARIABLES DOWNLOAD / SHARE DETAILS ▾

SELECT VARIABLES SELECT GEOGRAPHIES **DATA CART (2)** TABLE LAYOUT DOWNLOAD

**Selected Variables (2)**

- AGEP**  
2 of 2 responses
- PUMA10**  
983 of 983 responses

**Age (AGEP)** DETAILS ^

**+ CREATE CUSTOM GROUP**

<input checked="" type="checkbox"/> Include in Universe	Response Label	Value
<input checked="" type="checkbox"/>	1 to 99 years (Top-coded)	1 ————— 99
<input checked="" type="checkbox"/>	Under 1 year	0

Dataset: ACS 5-Year Estimates Public Use Microdata Sample (2022) [CHANGE](#) [VIEW TABLE](#)

- **Categorize (recode) your variable:**
  - Check the box next to Add to Group to add both categories to the recode
  - Click on **Auto Group**

SELECT VARIABLES    SELECT GEOGRAPHIES    **DATA CART (3)**    TABLE LAYOUT    DOWNLOAD

**Selected Variables (3)**

- AGEP**  
2 of 2 responses
- PUMA10**  
983 of 983 responses
- AGEP\_RC1**  
1 of 1 responses

**Age recode** **AUTO GROUP**

**Not Elsewhere Classified**  Show on table

Group Label  
Not Elsewhere Classified

24 / 60

<input checked="" type="checkbox"/> Add to Group	Response Label	Value
<input checked="" type="checkbox"/>	1 to 99 years (Top-coded)	1 ————— 99
<input checked="" type="checkbox"/>	Under 1 year	0

**CANCEL**    **SAVE GROUP**

Dataset: ACS 5-Year Estimates Public Use Microdata Sample (2022) **CHANGE**    **VIEW TABLE**



- **Categorize (recode) your variable:**
  - Confirm that the Start value is '1', the End value is '99', and the Groups of value is '1'
  - Click **Auto Group**. This will automatically create each year of age as its own group.

Auto Group Variable

Start: 1

End: 99

Groups of: 1

CANCEL AUTO GROUP

TABLE LAYOUT DOWNLOAD

Age recode

Not Elsewhere Classified	VALUES: 0	EDIT GROUP
1	VALUES: 1	EDIT GROUP
2	VALUES: 2	EDIT GROUP
3	VALUES: 3	EDIT GROUP

CHANGE VIEW TABLE

- Create recode to name PUMA10 variable:
  - Select PUMA10 and click on the 'Include in Universe' checkbox to uncheck all selected PUMAs
  - Reselect 06712 or use the Value search box to search for your desired PUMAs
  - Click on the **Create Custom Group** button to name your PUMA

The screenshot shows a data cart interface with the following elements:

- Navigation tabs: SELECT VARIABLES, SELECT GEOGRAPHIES, **DATA CART (3)**, TABLE LAYOUT, DOWNLOAD.
- Selected Variables (3):
  - AGEP (2 of 2 responses)
  - PUMA10 (1 of 983 responses)** - highlighted with a red box
  - AGEP\_RC1 (100 of 100 responses)
- Variable Details for PUMA10:
  - Title: Public use microdata area code (PUMA) based on 2010 Census definition for data years 2012-2021 (areas with population of 100,000 or more, use with ST for unique code) (PUMA10)
  - + CREATE CUSTOM GROUP button - highlighted with a red box
  - Table with columns: Include in Universe, Response Label, Value.
  - Row 1:  Include in Universe, [Empty], [Empty]
  - Row 2:  Include in Universe, Public use microdata area codes, 06712 - The value '06712' is highlighted with a red box.
- Dataset: ACS 5-Year Estimates Public Use Microdata Sample (2022) CHANGE
- VIEW TABLE button

- Create recode to name PUMA10 variable:
  - Use the Group Label box to type in 'PUMA 06712' and select your PUMA by clicking on the checkbox
  - Click the Save Group button

The screenshot shows the 'DATA CART (4)' interface. On the left, a sidebar lists variables: AGEP (2 of 2 responses), PUMA10 (1 of 983 responses), PUMA10\_RC1 (1 of 1 responses), and AGEP\_RC1 (100 of 100 responses). The main panel is titled 'Public use microdata area code (PUMA) based on 2010 Census definition for data years 2012-2021 (areas with population of 100,000 or more, use with ST for unique code) recode'. It shows a 'PUMA 06712' group with a 'Show on table' toggle. A red box highlights the 'Group Label' input field containing 'PUMA 06712'. Below, a table lists items to be added to the group:

<input checked="" type="checkbox"/>	Add to Group	Response Label	Value
<input checked="" type="checkbox"/>		Public use microdata area codes	06712

At the bottom right of the main panel, there are 'CANCEL' and 'SAVE GROUP' buttons, with the latter highlighted by a red box. The bottom bar shows the dataset: 'ACS 5-Year Estimates Public Use Microdata Sample (2022)' with a 'CHANGE' link and a 'VIEW TABLE' button.

- View variable placement in the default table layout:
  - Move to the **Table Layout** tab
  - **Columns/Rows – Variables will be shown in the table.** By default, the table is providing the average age with the original PUMA variable and Selected Geographies in the Rows.

SELECT VARIABLES    SELECT GEOGRAPHIES    DATA CART (4)    **TABLE LAYOUT**    DOWNLOAD

**Custom Table**

"Values in table cells" Options (1)  
Determines order in list; cannot move to row/column

**AGEP**    2 of 2 responses

Columns (0)  
columns (maximum 400)

Rows (2)  
1 rows (maximum 2000)

**SELECTED GEOGRAPHIES**    1 of 1 responses

**PUMA10**    1 of 983 responses

Not on table (2)  
(may restrict the sample universe)

**PUMA10\_RC1**    1 of 1 responses

**AGEP\_RC1**    100 of 100 responses

**Table Preview**  
Drag and drop variables between sections on the left, see results on table layout below.

Values in table cells:  
Average of Age (AGEP)

Universe: selected geographies: California; Public use microdata area code (PUMA) based on 2010 Census definition for data years 2012-2021 (areas with population of 100,000 or more, use with ST for unique code) (PUMA10): Public use microdata area codes

Public use microdata area code (PUMA) based on 2010 Census definition for data years 2012-2021 (areas with population of 100,000 or more, use with ST for unique code) (PUMA10)	
California (1)	0
Public use microdata area codes	

Dataset: ACS 5-Year Estimates Public Use Microdata Sample (2022)    CHANGE    **VIEW TABLE**

- Edit Table Layout:
  - Move Age Recode to Rows:
    - Click, hold and drag AGEP\_RC1 on the left side of the page up to the rows heading. This will give you a table layout that includes the age categories that were created as the rows.

SELECT VARIABLES    SELECT GEOGRAPHIES    DATA CART (4)    TABLE L

**Custom Table**

"Values in table cells" Options (1)  
Determines order in list; cannot move to row/column

**AGEP**    2 of 2 responses

Columns (0)  
columns (maximum 400)

**Rows (2)**    1 rows (maximum 2000)

**SELECTED GEOGRAPHIES**    1 of 1 responses

**PUMA10**    1 of 983 responses

Not on table (2)  
(may restrict the sample universe)

**PUMA10\_RC1**    1 of 1 responses

**AGEP\_RC1**    4 of 4 responses

Dataset: ACS 5-Year Estimates Public Use Microdata Sample (2022)    CHANGE

- Edit Table Layout:
  - Move Selected Geographies and PUMA recode to Columns:
    - Click, hold and drag Selected Geographies and PUMA10\_RC1 on the left side of the page up to the columns heading. This will give you a table layout that includes the selected PUMA 06712 from California as the columns.

SELECT VARIABLES   SELECT GEOGRAPHIES   DATA CART (4)   **TABLE LAYOUT**   DOWNLOAD

### Custom Table

"Values in table cells" Options (1) ^  
Determines order in list; cannot move to row/column

**AGEP** 2 of 2 responses

Columns (0) ^  
columns (maximum 400)

Rows (3) ^  
100 rows (maximum 2000)

**SELECTED GEOGRAPHIES** 1 of 1 responses

**PUMA10** 1 of 983 responses

**AGEP\_RC1** 100 of 100 responses

Not on table (1) ^  
(may restrict the sample universe)

**PUMA10\_RC1** 1 of 1 responses

### Table Preview

Drag and drop variables between sections on the left; see results on table layout below.

**Values in table cells:** Universe: 2012-202

Average of Age (AGEP) v

Age recode (AGEP_RC1)	
California (100)	0
Public use microdata ar...	0
1	???
2	???
3	???
4	???
5	???
6	???
7	???
8	???
9	???

- Edit Table Layout:
  - Move original PUMA10 variable to Not on table section:
    - Click, hold and drag PUMA10 to the Not on table section. This will give you a table layout that includes the selected PUMA from California as the columns.

SELECT VARIABLES   SELECT GEOGRAPHIES   DATA CART (4)   **TABLE LAYOUT**   DOWNLOAD

### Custom Table

"Values in table cells" Options (1)  
Determines order in list; cannot move to row/column

AGEP 2 of 2 responses

Columns (2)  
1 columns (maximum 400)

SELECTED GEOGRAPHIES 1 of 1 responses

PUMA10\_RC1 1 of 1 responses

Rows (2)  
100 rows (maximum 2000)

PUMA10 1 of 983 responses

AGEP\_RC1 100 of 100 responses

Not on table (0)  
(may restrict the sample universe)

### Table Preview

Drag and drop variables between

Values in table cells:

Average of Age (AGEP)

Age recode (AGEP\_RC1)

Public use microdata area...

Not Elsewhere Classified

1

2

3

4

5

Dataset: ACS 5-Year Estimates Public Use Microdata Sample (2022) [CHANGE](#)

- Choose type of values in table cells
  - Change the “Value in table cells” option from “Average of Age” to **Count**. This will give you data for the total number of people within the requested categories.

SELECT VARIABLES    SELECT GEOGRAPHIES    DATA CART (4)    **TABLE LAYOUT**    DOWNLOAD

---

### Custom Table

**"Values in table cells" Options (1)** ^  
Determines order in list; cannot move to row/column

**AGEP** 2 of 2 responses

**Columns (2)** ^  
1 columns (maximum 400)

**SELECTED GEOGRAPHIES** 1 of 1 responses

**PUMA10\_RC1** 1 of 1 responses

**Rows (1)** ^  
100 rows (maximum 2000)

**AGEP\_RC1** 100 of 100 responses

**Not on table (1)** ^  
(may restrict the sample universe)

**PUMA10** 1 of 983 responses

### Table Preview

Drag and drop variables between sections on the left; see results on table layout below.

**Values in table cells:**

Count

Average of Age (AGEP)

		Universe: se 2012-2021 (
	California	
	Public use microdata area cod...	
Age recode	PUMA 06712	
1		???
2		???
3		???
4		???
5		???
6		???
7		???

Dataset: ACS 5-Year Estimates Public Use Microdata Sample (2022)    [CHANGE](#)



- **Confirm Table Layout:**
  - Confirm table layout and click **View Table** in the lower right

SELECT VARIABLES   SELECT GEOGRAPHIES   DATA CART (4)   **TABLE LAYOUT**   DOWNLOAD

### Custom Table

"Values in table cells" Options (1)  
Determines order in list; cannot move to row/column

**AGEP** 2 of 2 responses

Columns (2)  
1 columns (maximum 400)

**SELECTED GEOGRAPHIES** 1 of 1 responses

**PUMA10\_RC1** 1 of 1 responses

Rows (1)  
100 rows (maximum 2000)

**AGEP\_RC1** 100 of 100 responses

Not on table (1)  
(may restrict the sample universe)

**PUMA10** 1 of 983 responses

### Table Preview

Drag and drop variables between sections on the left; see results on table layout below.

**Values in table cells:**

Count

Show Total

	Selected Geographies
	California
	Public use microdata area cod...
Age recode	PUMA 06712
▼ ??? (100)	0
1	???
2	???
3	???
4	???
5	???

Universe: **selected geographies:** California; **Public use microdata area code (PUMA) based on 2010 Census definition for data years 2012-2021 (areas with population of 100,000 or more, use with ST for unique code) (PUMA10):** Public use microdata area codes

Dataset: ACS 5-Year Estimates Public Use Microdata Sample (2022) [CHANGE](#)

**VIEW TABLE**

## ■ View Table

Note that the site automatically chooses a weight for you. You do have the option to change the weight if you want.

**Custom Table** CUSTOMIZE VARIABLES DOWN

Dataset: ACS 5-Year Estimates Public Use Microdata Sample [CHANGE DATASET](#) Geography: 1 geographies selected [CHANGE GEOGRAPHY](#)

Vintage: 2022

Weighting: Person weight

On Columns: Selected Geographies, PUMA10\_RC1

Not on Table: PUMA10

On Rows: AGEP\_RC1

"Values in table cells" Options: AGEP

Values in table cells: Count

Universe: selected geographies: California; Public use microdata area code (PUMA) based on 2010 Census Public use microdata area codes

Show Total

Selected Geographies	
California	
Public use microdata area code (PUMA) based on 2010 Census definition for data years 2012-2021 (areas with population of 100,000 or more, use with ST for uniq...	
Age recode	PUMA 06712
▼ Total (100)	94,969
1	990
2	776
3	953
4	1,391
5	837
6	1,120
7	1,220
^	1,050
Send Feedback	1,202

[census.data@census.gov](mailto:census.data@census.gov)

Now we have to go back and use the PUMA20 variable to find the new PUMA GEOID to get the total population for the entire 2018 – 2022 estimates.

- Choose Dataset and Vintage:
  - Dataset – ACS 5-Year Estimates – Public Use Microdata Sample
  - Vintage – 2022
  - Click **Next** in the lower right

## Select a Dataset & Vintage

Select Dataset ACS 5-Year Estimates Public Use Microdata Sample  
ACSPUMS5Y

Select Vintage 2022  
2022

Send Feedback  
census.data@census.gov

NEXT

- **Search for Variables:** Use the search box below “Variable” or “Label” to find your variables of interest

SELECT VARIABLES   SELECT GEOGRAPHIES   DATA CART (0)   TABLE LAYOUT   DOWNLOAD

filter by Topic Q Search is not enabled in this beta version **SEARCH**

Showing 218 of 519 Variables Select at least one variable to start

	Variable	Label	Number of Values	Type	
<input type="checkbox"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	(3) Edited Items, Estimate, Recod	
<input type="checkbox"/>	COW	Class of worker	10	Edited Items	<a href="#">▼ DETAILS</a>
<input type="checkbox"/>	GCL	Grandparents living with grandchildren	3	Edited Items	<a href="#">▼ DETAILS</a>
<input type="checkbox"/>	VACS	Vacancy status	8	Edited Items	<a href="#">▼ DETAILS</a>
<input type="checkbox"/>	ANC	Ancestry recode	5	Recodes	<a href="#">▼ DETAILS</a>
<input type="checkbox"/>	ESR	Employment status recode	7	Recodes	<a href="#">▼ DETAILS</a>
<input type="checkbox"/>	NWAB	Temporary absence from work (UNEDITED-See 'Employ...	4	Recodes	<a href="#">▼ DETAILS</a>

Dataset: ACS 5-Year Estimates Public Use Microdata Sample (2021) [CHANGE](#) **VIEW TABLE**

- **Select variable for Age:**
  - Type “AGEP” in the Variable search box or type “Age” in the label search box
  - Check the box to the left of AGEP to add the variable to your data cart
  - Notice the message at the top of the screen saying you will need to create your own categories (or recodes) for this variable if you want it shown in the table. (You will do this action in the Data Cart)

This variable is continuous and can only go to "Values in table cells". Create a group (recode) to use elsewhere. "Age (AGEP)"

SELECT VARIABLES   SELECT GEOGRAPHIES   DATA CART (1)   TABLE LAYOUT   DOWNLOAD

filter by Topic   Search is not enabled in this beta version   SEARCH

Showing 2 of 519 Variables   Selected: 1 variable (1 column, 1 row)

Variable	Label	Number of Values	Type
<input checked="" type="checkbox"/> agep	age	2	(3) Edited Items, Estimate, Recode
AGEP	Age		Estimate

**Description:**  
Age

**Values:**

- 1 to 99 -- 1 to 99 years (Top-coded)
- 0 -- Under 1 year

- Select variable for 2020 PUMAs:
  - Type 'PUMA' in the label search box
  - Check the box to the left of 'PUMA20' to add the variable to data cart

SELECT VARIABLES   SELECT GEOGRAPHIES   DATA CART (2)   TABLE LAYOUT   DOWNLOAD

Showing 6 of 522 Variables Selected: 2 variables (1 column, 1151 rows)

	Variable	Label	Number of Values	Type	
	<input type="text"/>	<input type="text" value="puma"/>	<input type="text"/>	<input type="text" value="(3) Edited Items, Estimate, Recd"/>	
<input type="checkbox"/>	MIGPUMA10	Migration PUMA based on 2010 Census definition f...	231	Estimate	▼ DETAILS
<input type="checkbox"/>	MIGPUMA20	Migration PUMA based on 2020 Census definition f...	236	Estimate	▼ DETAILS
<input type="checkbox"/>	POWPUMA10	Place of work PUMA based on 2010 Census definiti...	230	Estimate	▼ DETAILS
<input type="checkbox"/>	POWPUMA20	Place of work PUMA based on 2020 Census definiti...	235	Estimate	▼ DETAILS
<input type="checkbox"/>	PUMA10	Public use microdata area code (PUMA) based on 2...	983	Estimate	▼ DETAILS
<input checked="" type="checkbox"/>	PUMA20	Public use microdata area code (PUMA) based on 2...	1151	Estimate	▼ DETAILS

Dataset: ACS 5-Year Estimates Public Use Microdata Sample (2022) [CHANGE](#) VIEW TABLE

- Select California state geography.
  - Click on the Select Geographies tab
  - Check the box to the left 'California' to only pull up data for PUMAs from California

The screenshot shows a web interface for selecting geographies. At the top, there are navigation tabs: 'SELECT VARIABLES', 'SELECT GEOGRAPHIES' (which is active and underlined in orange), 'DATA CART (2)', 'TABLE LAYOUT', and 'DOWNLOAD'. Below the tabs, there are two main columns. The left column is titled 'GEOGRAPHIES' and contains three options: 'Region', 'Division', and 'State'. The 'State' option is highlighted with a grey background and a red border. The right column is titled 'STATE' and contains a list of states with checkboxes. The 'California' checkbox is checked and highlighted with a red box. Other states listed include Alabama, Alaska, Arizona, Arkansas, Colorado, Connecticut, Delaware, District of Columbia, and Florida. At the bottom of the interface, there is a label 'Dataset: ACS 5-Year Estimates Public Use Microdata Sample (2022)' followed by a 'CHANGE' link.

- Categorize (recode) your variable:
  - Move to the Data Cart tab
  - Click the AGEP variable on the left
  - Click **Create Custom Group** to begin specifying your age groups (e.g. single years of age)

The screenshot shows the 'DATA CART (2)' tab in the software interface. On the left, under 'Selected Variables (2)', the 'AGEP' variable is highlighted with a red box, showing '2 of 2 responses'. Below it is 'PUMA20' with '1151 of 1151 responses'. On the right, the 'Age (AGEP)' variable details are shown. A red box highlights the '+ CREATE CUSTOM GROUP' button. Below this is a table with columns for 'Include in Universe', 'Response Label', and 'Value'. The table has three rows: '1 to 99 years (Top-coded)' with a value of 1 and a slider from 1 to 99, and 'Under 1 year' with a value of 0. At the bottom, the dataset is identified as 'ACS 5-Year Estimates Public Use Microdata Sample (2022)' with a 'CHANGE' link and a 'VIEW TABLE' button.

SELECT VARIABLES    SELECT GEOGRAPHIES    **DATA CART (2)**    TABLE LAYOUT    DOWNLOAD

Selected Variables (2)

**AGEP**  
2 of 2 responses

**PUMA20**  
1151 of 1151 responses

**Age (AGEP)**    DETAILS ^

**+ CREATE CUSTOM GROUP**

<input checked="" type="checkbox"/> Include in Universe	Response Label	Value
<input checked="" type="checkbox"/>	1 to 99 years (Top-coded)	1 ————— 99
<input checked="" type="checkbox"/>	Under 1 year	0

Dataset: ACS 5-Year Estimates Public Use Microdata Sample (2022)    CHANGE    VIEW TABLE



- **Categorize (recode) your variable:**
  - Check the box next to Add to Group to add both categories to the recode
  - Click on **Auto Group**

SELECT VARIABLES   SELECT GEOGRAPHIES   **DATA CART (3)**   TABLE LAYOUT   DOWNLOAD

**Selected Variables (3)**

- AGEP**  
2 of 2 responses
- PUMA20**  
1151 of 1151 responses
- AGEP\_RC1**  
1 of 1 responses

**Age recode** **AUTO GROUP**

**Not Elsewhere Classified**  Show on table

Group Label  
Not Elsewhere Classified  
24 / 60

<input checked="" type="checkbox"/> Add to Group	Response Label	Value
<input checked="" type="checkbox"/>	1 to 99 years (Top-coded)	1 ————— 99
<input checked="" type="checkbox"/>	Under 1 year	0

**CANCEL**   **SAVE GROUP**

Dataset: ACS 5-Year Estimates Public Use Microdata Sample (2022)   **CHANGE**   **VIEW TABLE**

- **Categorize (recode) your variable:**
  - Confirm that the Start value is '1', the End value is '99', and the Groups of value is '1'
  - Click **Auto Group**. This will automatically create each year of age as its own group.

Auto Group Variable

Start: 1

End: 99

Groups of: 1

CANCEL AUTO GROUP

TABLE LAYOUT DOWNLOAD

Age recode

Not Elsewhere Classified	VALUES: 0	EDIT GROUP
1	VALUES: 1	EDIT GROUP
2	VALUES: 2	EDIT GROUP
3	VALUES: 3	EDIT GROUP

CHANGE VIEW TABLE

- Create recode to name PUMA20 variable:
  - Select PUMA20 and click on the 'Include in Universe' checkbox to uncheck all selected PUMAs
  - Reselect 06712 or use the Value search box to search for your desired PUMAs
  - Click on the Create Custom Group button to name your PUMA

SELECT VARIABLES   SELECT GEOGRAPHIES   **DATA CART (3)**   TABLE LAYOUT   DOWNLOAD

Selected Variables (3)

**AGEP**  
2 of 2 responses

**PUMA20**  
1 of 1151 responses

**AGEP\_RC1**  
100 of 100 responses

**Public use microdata area code (PUMA) based on 2020 Census definition for data years 2022 and later (areas with population of 100,000 or more, use with ST for unique code) (PUMA20)**   DETAILS ^

**+ CREATE CUSTOM GROUP**

<input checked="" type="checkbox"/> Include in Universe	Response Label	Value
<input checked="" type="checkbox"/>	Public use microdata area codes	06712

Dataset: ACS 5-Year Estimates Public Use Microdata Sample (2022)   [CHANGE](#)   [VIEW TABLE](#)

- Create recode to name PUMA20 variable:
  - Use the Group Label box to type in 'PUMA 06712' and select your PUMA by clicking on the checkbox
  - Click the Save Group button

SELECT VARIABLES   SELECT GEOGRAPHIES   **DATA CART (4)**   TABLE LAYOUT   DOWNLOAD

Selected Variables (4)

- AGEP  
2 of 2 responses
- PUMA20  
1 of 1151 responses
- PUMA20\_RC1**  
1 of 1 responses
- AGEP\_RC1  
100 of 100 responses

**Public use microdata area code (PUMA) based on 2020 Census definition for data years 2022 and later (areas with population of 100,000 or more, use with ST for unique code) recode**

PUMA 06712 Show on table

Group Label  
PUMA 06712

10 / 60

<input checked="" type="checkbox"/> Add to Group	Response Label	Value
<input checked="" type="checkbox"/>	Public use microdata area codes	06712

CANCEL SAVE GROUP

Dataset: ACS 5-Year Estimates Public Use Microdata Sample (2022) [CHANGE](#) VIEW TABLE

- View variable placement in the default table layout:
  - Move to the **Table Layout** tab
  - **Columns/Rows – Variables will be shown in the table.** By default, the table puts the 2020 PUMAs in the rows

SELECT VARIABLES    SELECT GEOGRAPHIES    DATA CART (4)    **TABLE LAYOUT**    DOWNLOAD

**Custom Table**

"Values in table cells" Options (1)  
Determines order in list; cannot move to row/column

**AGEP**    2 of 2 responses

Columns (0)  
columns (maximum 400)

Rows (2)  
1 rows (maximum 2000)

**SELECTED GEOGRAPHIES**    1 of 1 responses

**PUMA20**    1 of 1151 responses

Not on table (2)  
(may restrict the sample universe)

**PUMA20\_RC1**    1 of 1 responses

**AGEP\_RC1**    100 of 100 responses

**Table Preview**

Drag and drop variables between sections on the left; see results on table layout below.

**Values in table cells:**    Universe: **selected geographies: California; Public use microdata area code (PUMA) based on 2020 Census definition for data years 2022 and later (areas with population of 100,000 or more, use with ST for unique code) (PUMA20); Public use microdata area codes**

Average of Age (AGEP)

Public use microdata area code (PUMA) based on 2020 Census definition for data years 2022 and later (areas with population of 100,000 or more, use with ST for unique code) (PUMA20)			
<ul style="list-style-type: none"> <li>California (1)               <table border="1"> <tr> <td>Public use microdata area codes</td> <td>0</td> </tr> </table> </li> </ul>	Public use microdata area codes	0	
Public use microdata area codes	0		

Dataset: ACS 5-Year Estimates Public Use Microdata Sample (2022)    CHANGE    **VIEW TABLE**

- Edit Table Layout:
  - Move Age Recode to Rows:
    - Click, hold and drag AGEP\_RC1 on the left side of the page up to the rows heading. This will give you a table layout that includes the age categories that were created as the rows.

The screenshot shows the 'Table Layout' configuration interface. At the top, there are tabs for 'SELECT VARIABLES', 'SELECT GEOGRAPHIES', 'DATA CART (4)', and 'TABLE LAY'. Below these is a 'Custom Table' section with several categories:

- "Values in table cells" Options (1): Determines order in list; cannot move to row/column
- AGEP: 2 of 2 responses
- Columns (0): columns (maximum 400)
- Rows (2): 1 rows (maximum 2000)** (highlighted with a red box)
- SELECTED GEOGRAPHIES: 1 of 1 responses
  - PUMA20: 1 of 1151 responses
- Not on table (2): (may restrict the sample universe)
  - PUMA20\_RC1: 1 of 1 responses
  - AGEP\_RC1: 100 of 100 responses** (highlighted with a red box)

A red arrow points from the 'AGEP\_RC1' variable in the 'Not on table (2)' section up to the 'Rows (2)' section, indicating the drag-and-drop action described in the text.

At the bottom, the dataset is identified as 'ACS 5-Year Estimates Public Use Microdata Sample (2022)' with a 'CHANGE' button.

- Edit Table Layout:
  - Move Selected Geographies and PUMA recode to Columns:
    - Click, hold and drag Selected Geographies and PUMA20\_RC1 on the left side of the page up to the columns heading. This will give you a table layout that includes the selected PUMA 06712 from California as the columns.

The screenshot displays the 'Table Layout' editor interface. At the top, there are navigation tabs: 'SELECT VARIABLES', 'SELECT GEOGRAPHIES', 'DATA CART (4)', and 'TABLE LAY'. Below these is a 'Custom Table' section with a pencil icon. The main area is divided into several sections: 'Values in table cells' Options (1), 'Columns (0)', 'Rows (3)', 'SELECTED GEOGRAPHIES', 'PUMA20', 'AGEP\_RC1', 'Not on table (1)', and 'PUMA20\_RC1'. Red boxes highlight the 'Columns (0)' section, the 'SELECTED GEOGRAPHIES' section, and the 'PUMA20\_RC1' section. Two red arrows point from the 'SELECTED GEOGRAPHIES' and 'PUMA20\_RC1' sections towards the 'Columns (0)' section, indicating the drag-and-drop action. On the right side, there is a 'Table' section with a 'Drag and' button and a 'Values in' section with a 'Count' button. At the bottom, the dataset is identified as 'ACS 5-Year Estimates Public Use Microdata Sample (2022)' with a 'CHANGE' button.

- Edit Table Layout:
  - Move original PUMA20 variable to Not on table section:
    - Click, hold and drag PUMA20 to the Not on table section. This will give you a table layout that includes the selected PUMA from California as the columns.

SELECT VARIABLES    SELECT GEOGRAPHIES    DATA CART (4)

### Custom Table

"Values in table cells" Options (1)  
Determines order in list; cannot move to row/column

AGEP 2 of 2 responses

Columns (2)  
1 columns (maximum 400)

SELECTED GEOGRAPHIES 1 of 1 responses

PUMA20\_RC1 1 of 1 responses

Rows (2)  
100 rows (maximum 2000)

PUMA20 1 of 1151 responses

AGEP\_RC1 100 of 100 responses

Not on table (0)  
(may restrict the sample universe)

Dataset: ACS 5-Year Estimates Public Use Microdata Sample (2022)



- Choose type of values in table cells
  - Change the “Value in table cells” option from “Average of Age” to **Count**. This will give you data for the total number of people within the requested categories.

SELECT VARIABLES    SELECT GEOGRAPHIES    DATA CART (4)    **TABLE LAYOUT**    DOWNLOAD

---

### Custom Table

**"Values in table cells" Options (1)** ^  
Determines order in list; cannot move to row/column

**AGEP** 2 of 2 responses

**Columns (2)** ^  
1 columns (maximum 400)

**SELECTED GEOGRAPHIES** 1 of 1 responses

**PUMA20\_RC1** 1 of 1 responses

**Rows (1)** ^  
100 rows (maximum 2000)

**AGEP\_RC1** 100 of 100 responses

**Not on table (1)** ^  
(may restrict the sample universe)

**PUMA20** 1 of 1151 responses

### Table Preview

Drag and drop variables between sections on the left; see results on table layout below.

**Values in table cells:**

Count

Average of Age (AGEP)

Universe: select 2022 and later

SHOW TOTAL

	Selected Geographies
	California
	Public use microdata area cod...
Age recode	PUMA 06712
▼ ??? (100)	0
Not Elsewhere Classified	???
1	???
2	???
3	???
4	???

---

Dataset: ACS 5-Year Estimates Public Use Microdata Sample (2022)    [CHANGE](#)

- **Confirm Table Layout:**
  - Confirm table layout and click **View Table** in the lower right

SELECT VARIABLES   SELECT GEOGRAPHIES   DATA CART (4)   **TABLE LAYOUT**   DOWNLOAD

---

**Custom Table**

"Values in table cells" Options (1)  
Determines order in list; cannot move to row/column

**AGEP**   2 of 2 responses

Columns (2)  
1 columns (maximum 400)

**SELECTED GEOGRAPHIES**   1 of 1 responses

**PUMA20\_RC1**   1 of 1 responses

Rows (1)  
100 rows (maximum 2000)

**AGEP\_RC1**   100 of 100 responses

Not on table (1)  
(may restrict the sample universe)

**PUMA20**   1 of 1151 responses

**Table Preview**

Drag and drop variables between sections on the left; see results on table layout below.

**Values in table cells:**

Count

Show Total

Universe: selected geographies: California; Public use microdata area code (PUMA) based on 2020 Census definition for data years 2022 and later (areas with population of 100,000 or more, use with ST for unique code) (PUMA20); Public use microdata area codes

Selected Geographies	
California	
Public use microdata area cod...	
Age recode	PUMA 06712
▼ ??? (100)	0
Not Elsewhere Classified	???
1	???
2	???
3	???
4	???

Dataset: ACS 5-Year Estimates Public Use Microdata Sample (2022)   [CHANGE](#)

**VIEW TABLE**

# View Table

Note that the site automatically chooses a weight for you. You do have the option to change the weight if you want.

**Custom Table** CUSTOMIZE VARIABLES DOWNLOAD / SHARE DETAILS

Dataset: ACS 5-Year Estimates Public Use Microdata Sample [CHANGE DATASET](#)

Vintage: 2022

Geography: 1 geographies selected [CHANGE GEOGRAPHY](#)

Weighting: Person weight

On Columns: Selected Geographies, PUMA20\_RC1

Not on Table: PUMA20

On Rows: AGEP\_RC1

"Values in table cells" Options: AGEP

Values in table cells: Count

Universe: selected geographies: California; Public use microdata area code (PUMA) based on 2020 Census definition for data years 2022 and later (areas with population of 100,000 or more, use with ST for ...)

Public use microdata area codes

Show Total

To get the total population for this PUMA from 2018 – 2022, add together each age category from both tables to get the correct 5-year totals.

Selected Geographies		
California		
Public use microdata area code (PUMA) based on 2020 Census definition for data years 2022 and later (areas with population of 100,000 or more, use with ST for ...)		
Age recode	PUMA 06712	
▼ Total (100)		23,202
Not Elsewhere Classified		201
1		288
2		224
3		380
4		359
5		172
6		231
7		282

- Download and get API queries:
  - Click **Download/Share** at the top of the table

The screenshot displays a web interface for data exploration. At the top right, there are three buttons: 'CUSTOMIZE VARIABLES', 'DOWNLOAD / SHARE', and 'DETAILS'. The 'DOWNLOAD / SHARE' button is highlighted with a red rectangular box. Below these buttons, the interface shows configuration options: 'Geography: 1 geographies selected' with a 'CHANGE GEOGRAPHY' link, and 'Weighting: Person weight' with a dropdown arrow. The main content area is divided into sections: 'On Rows' containing a blue pill button labeled 'AGEP\_RC1', and '"Values in table cells" Options' containing a blue pill button labeled 'AGEP'. At the bottom, there is a text block: 'Public use microdata area code (PUMA) based on 2020 Census definition for data years 2022 and later (areas with population of 100,000 or more, public use microdata area codes'. Plus icons are visible on the right side of the 'On Rows' and '"Values in table cells" Options' sections.

- **Download:**
  - Select **Download table view (.CSV)**, then click **DOWNLOAD**
  - Click on **export.csv** to view your downloaded table

**Custom Table**

SELECT VARIABLES   SELECT GEOGRAPHIES   DATA CART (4)   TABLE LAYOUT   **DOWNLOAD**

**Download table view (.CSV)**

Extract raw data (.CSV)

Extract raw data (.JSON)

Include:

\* Person weight

Housing Unit Weight

\* weight associated with at least one variable in download

**DOWNLOAD**

Bookmark for your current selections; save to return later or send to someone to share.

[https://data.census.gov/mdat/#/search?ds=ACSPUMS5Y2021&vv=PINCP&cv=JWTRNS\\_RC1&rv=ucgid,PINCP\\_R1](https://data.census.gov/mdat/#/search?ds=ACSPUMS5Y2021&vv=PINCP&cv=JWTRNS_RC1&rv=ucgid,PINCP_R1)

---

Query to extract PUMS records for your current selections from the Census Data API.

[https://api.census.gov/data/2021/acs/acs5/pums?get=PWGTP,PINCP,JWTRNS\\_RC1,PINCP\\_RC1,JWTRNS&ucgid=7950000US3500801,7950000US3500802,7950000US3500803,7950000US3500804,7950000US3500805,7950000US3500806&recc](https://api.census.gov/data/2021/acs/acs5/pums?get=PWGTP,PINCP,JWTRNS_RC1,PINCP_RC1,JWTRNS&ucgid=7950000US3500801,7950000US3500802,7950000US3500803,7950000US3500804,7950000US3500805,7950000US3500806&recc) COPY API GET QUERY

---

Query to extract tabular (aggregated) for your current selections from the Census Data API.

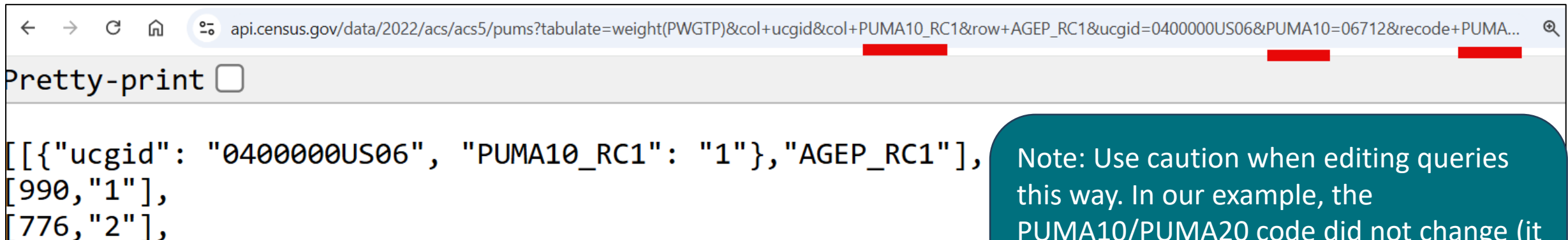
[https://api.census.gov/data/2021/acs/acs5/pums?tabulate=weight\(PWGTP\)&col+JWTRNS\\_RC1&row+ucgid&row+PINCP\\_RC1&ucgid=7950000US3500801,7950000US3500802,7950000US3500803,7950000US3500804,7950000US3500805,7950000US3500806](https://api.census.gov/data/2021/acs/acs5/pums?tabulate=weight(PWGTP)&col+JWTRNS_RC1&row+ucgid&row+PINCP_RC1&ucgid=7950000US3500801,7950000US3500802,7950000US3500803,7950000US3500804,7950000US3500805,7950000US3500806) COPY API TABULATE QUERY

	A	B	C	D	E	F	G	H	I	J	K
1	Source: ACS 5-Year Estimates Public Use Microdata Sample 2022										
2	Weight used: PWGTP										
3	Universe: selected geographies: California; Public use microdata area code (PUMA) based on 2020 Census definition for data years 2022										
4	Selected Geographies										
5	California										
6	Public use microdata area code (PUMA) based on 2020 Census definition for data years 2022 and later (areas with p										
7	Age recode	PUMA 06712									
8	-> Total	23202									
9	Not Elsewhere Classi	201									
10	1	288									
11	2	224									
12	3	380									
13	4	359									
14	5	172									
15	6	231									
16	7	282									

- API Tabulate Query:
  - Select COPY API TABULATE QUERY
  - Open a new tab in your browser
  - Paste into the address bar



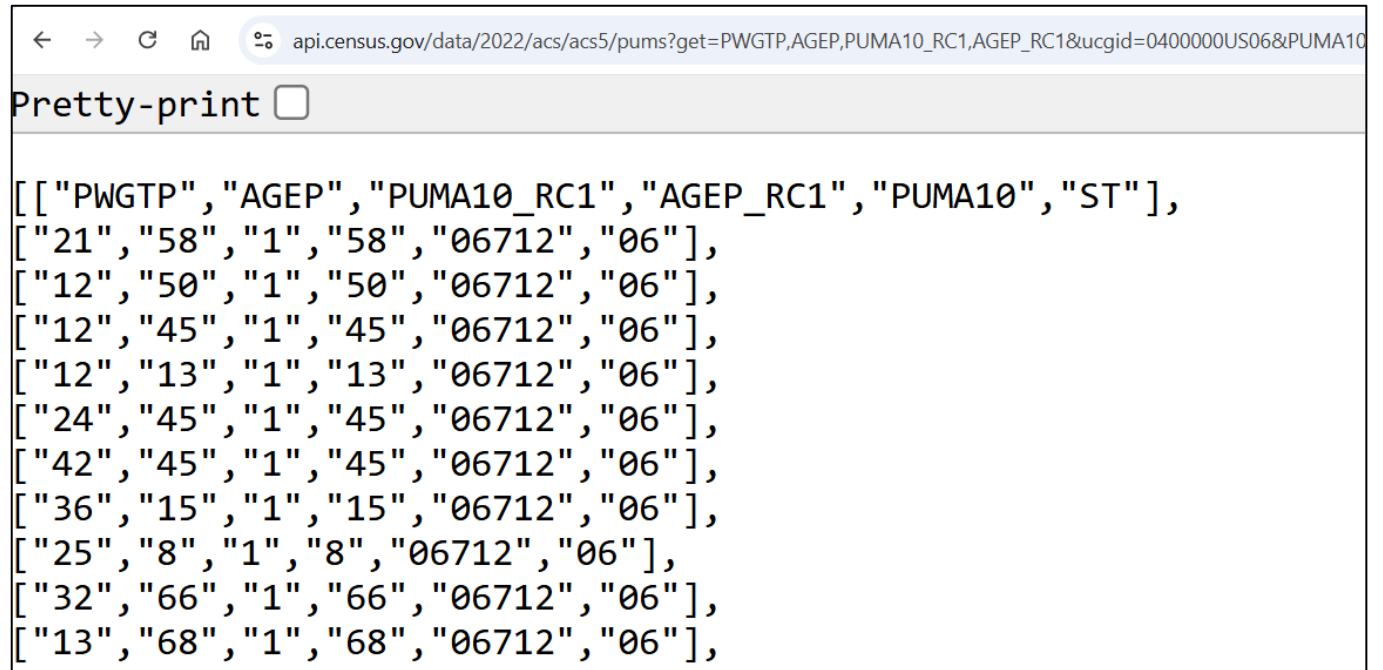
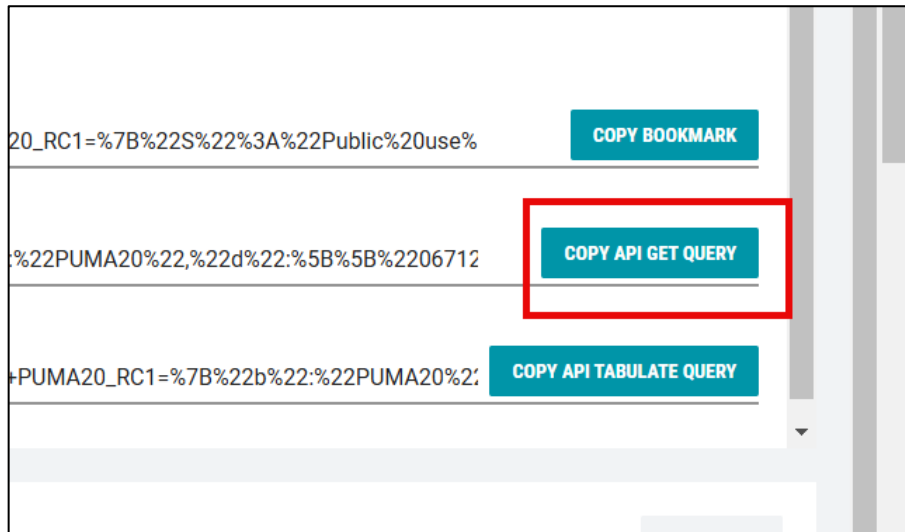
- Quickly Edit PUMA10/PUMA20 tabulations:
  - You can use the API tabulate query URL to quickly switch between PUMA10 and PUMA20 variables without having to go back into MDAT.
  - Replace all instances of “PUMA20” with “PUMA10” in the URL and hit enter
    - Hint: Copy/paste your URL into MS Word, and use the find and replace function to do this easily. If you recoded the PUMA variable, there should be 4 instances of PUMA10 changing to PUMA20.



```
api.census.gov/data/2022/acs/acs5/pums?tabulate=weight(PWGTP)&col+ucgid&col+PUMA10_RC1&row+AGEP_RC1&ucgid=0400000US06&PUMA10=06712&recode+PUMA...  
Pretty-print   
[[{"ucgid": "0400000US06", "PUMA10_RC1": "1"}, "AGEP_RC1"],  
[990, "1"],  
[776, "2"],
```

Note: Use caution when editing queries this way. In our example, the PUMA10/PUMA20 code did not change (it remained 06712), but in many cases the code will change, and you will need to edit that as well.

- API Get Query:
  - Select COPY API GET QUERY
  - Open a new tab in your browser
  - Paste into the address bar

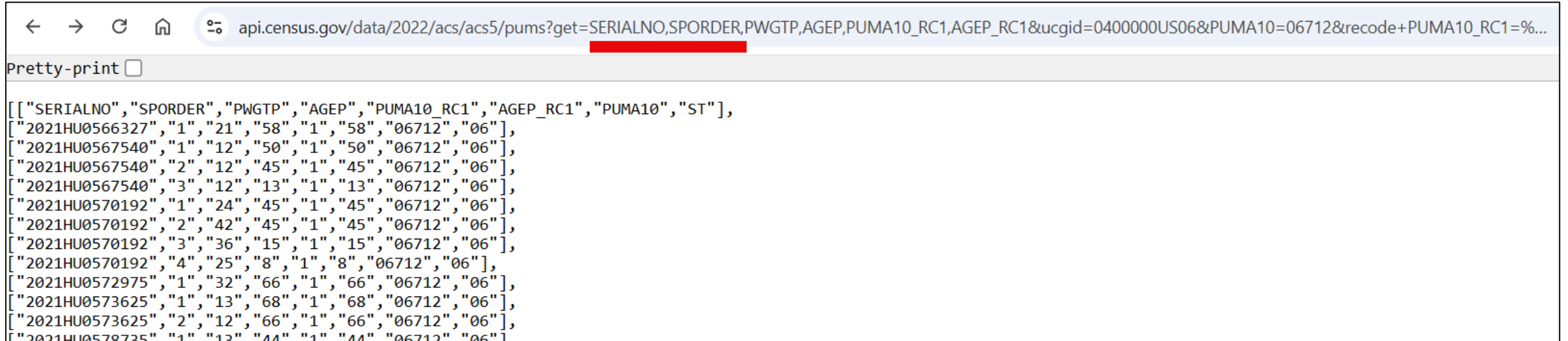




- API Get query:

- After **get=** in the URL, add in **SERIALNO,SPORDER**

- SERIALNO – Unique identifier for a Housing Unit(HU)/group quarters(GQ)
    - SPORDER – Unique identifier of persons within a Housing Unit(HU)



The screenshot shows a web browser window with the URL: `api.census.gov/data/2022/acs/acs5/pums?get=SERIALNO,SPORDER,PWGTP,AGEP,PUMA10_RC1,AGEP_RC1&ucgid=0400000US06&PUMA10=06712&recode+PUMA10_RC1=%...`. Below the URL bar, there is a "Pretty-print" checkbox. The main content area displays a JSON array of data rows, each containing 8 string elements representing different variables.

```
[["SERIALNO","SPORDER","PWGTP","AGEP","PUMA10_RC1","AGEP_RC1","PUMA10","ST"],  
["2021HU0566327","1","21","58","1","58","06712","06"],  
["2021HU0567540","1","12","50","1","50","06712","06"],  
["2021HU0567540","2","12","45","1","45","06712","06"],  
["2021HU0567540","3","12","13","1","13","06712","06"],  
["2021HU0570192","1","24","45","1","45","06712","06"],  
["2021HU0570192","2","42","45","1","45","06712","06"],  
["2021HU0570192","3","36","15","1","15","06712","06"],  
["2021HU0570192","4","25","8","1","8","06712","06"],  
["2021HU0572975","1","32","66","1","66","06712","06"],  
["2021HU0573625","1","13","68","1","68","06712","06"],  
["2021HU0573625","2","12","66","1","66","06712","06"],  
["2021HU0578735","1","13","44","1","44","06712","06"]]
```

- Add/remove variables:

- After **AGEP** in the URL, add in **SEX**

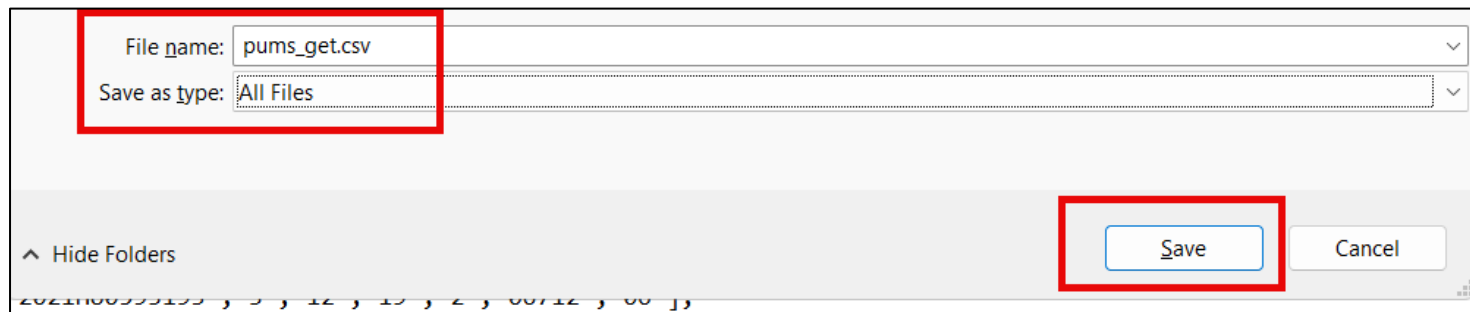
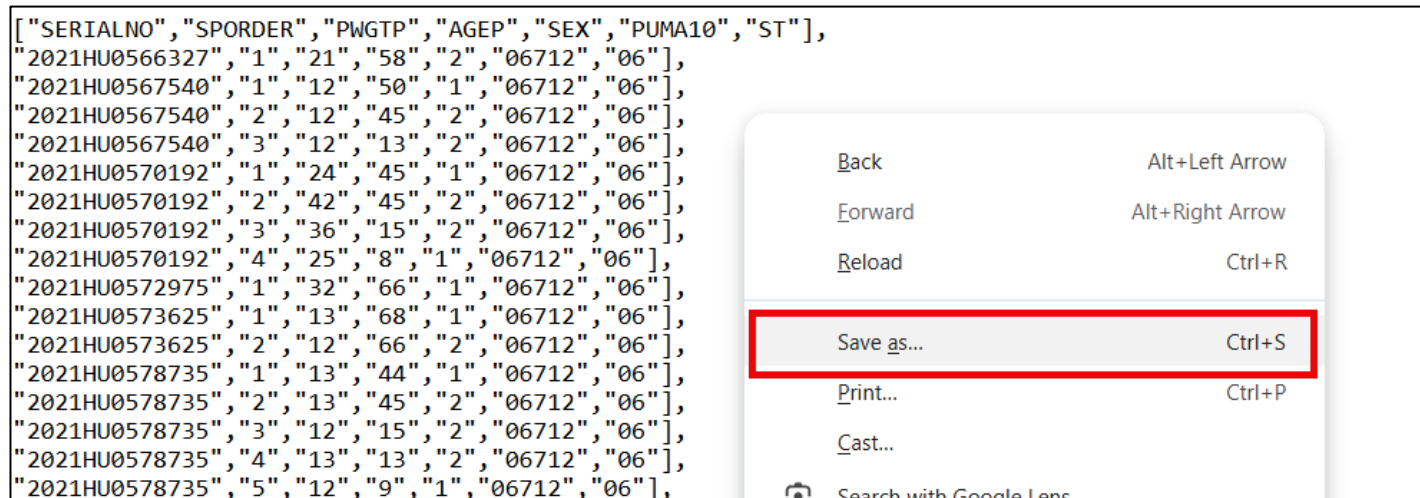
- Males are represented by a 1, Females by a 2

- (Optional) – Clean up the query by removing **AGEP\_RC1** and **PUMA10\_RC1**

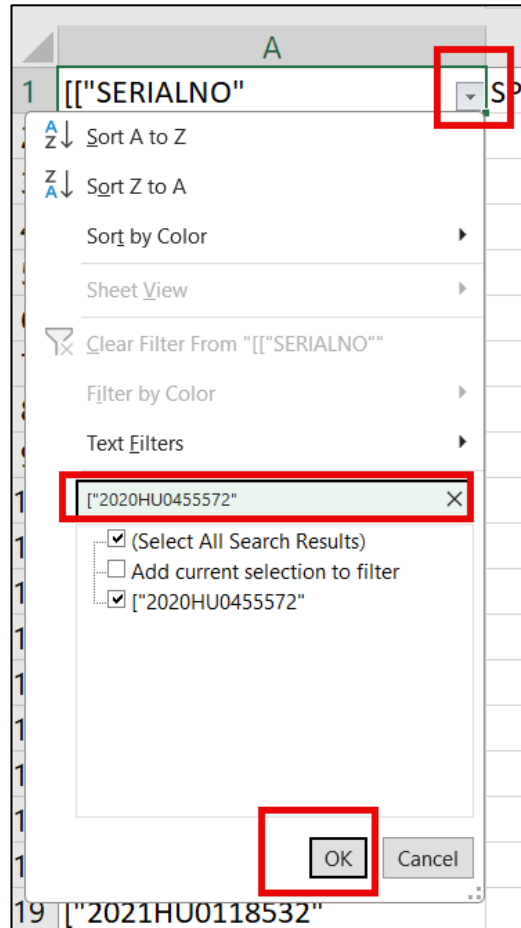
- The **AGEP\_RC1** Recode can be removed in this example as it is showing the exact same thing as **AGEP**. Other variables/recodes may not be the same. Recodes should only be removed on a case-by-case basis.

```
api.census.gov/data/2022/acs/acs5/pums?get=SERIALNO,SPORDER,PWGTP,AGEP,SEX&ucgid=0400000US06&PUMA10=06712&recode+PUMA10_RC1=%7B"b":".  
Pretty-print   
[[ "SERIALNO", "SPORDER", "PWGTP", "AGEP", "SEX", "PUMA10", "ST" ],  
[ "2021HU0566327", "1", "21", "58", "2", "06712", "06" ],  
[ "2021HU0567540", "1", "12", "50", "1", "06712", "06" ],  
[ "2021HU0567540", "2", "12", "45", "2", "06712", "06" ],  
[ "2021HU0567540", "3", "12", "13", "2", "06712", "06" ],  
[ "2021HU0570192", "1", "24", "45", "1", "06712", "06" ],  
[ "2021HU0570192", "2", "42", "45", "2", "06712", "06" ],  
[ "2021HU0570192", "3", "36", "15", "2", "06712", "06" ],  
[ "2021HU0570192", "4", "25", "8", "1", "06712", "06" ],  
[ "2021HU0572975", "1", "32", "66", "1", "06712", "06" ],
```

- **Save to Excel:**
  - Right click on the page > Choose **Save As**.
  - The file name can be anything, however there must be a **.csv** at the end of the file name
  - Change the Save as type to **All files**
  - Click **Save**



- Filter to a specific housing unit:
  - Add a filter to the **SERIALNO** Column in Excel (Ctrl+Shift+L shortcut in Excel)
  - Filter down to single housing unit, such as ["2020HU045572"]
    - (Optional) All the brackets [] and quotation marks "" can be removed in Excel to clean up the file. Use the Find and Replace function to remove these.



- View results:
  - SPORDER shows us this housing unit has 4 people living there
  - AGEP and SEX show us there is a 5 year old female, 9 year old male, 40 year old male, and 40 year old female
  - PWGTP shows the PUMS Person Weights

	A	B	C	D	E	F	G
1	[["SERIALNO" <input type="text"/> SPORDEF <input type="text"/> PWGTP <input type="text"/> AGEP <input type="text"/> SEX <input type="text"/> PUMA1( <input type="text"/> ST] <input type="text"/>						
524	["2020HU0455572"	4	13	5	2	6712 06]	
1167	["2020HU0455572"	3	16	9	1	6712 06]	
2378	["2020HU0455572"	2	13	40	1	6712 06]	
4450	["2020HU0455572"	1	12	40	2	6712 06]	
5036							

# Additional notes

- PUMA boundaries and/or codes may change substantially between vintages, requiring analysis to determine which PUMA codes to use for. In the example used here, the PUMA code (06712) for Sacramento County (Northeast)--Folsom City, Orangevale & Fair Oaks (East) did not change across years. However, in many cases PUMA10 codes may differ from PUMA20 codes.
- The [MABLE/Geocorr](#) tool is helpful to identify changes in PUMAs between vintages. The tool allows you to calculate the proportion of a PUMA code from the 2010 vintage that lies within the new PUMA codes from the 2020 vintage. It also provides you with an allocation factor so that you may crosswalk old PUMA codes to new PUMA codes. Check out this [short video](#) to learn more about how to use the MABLE/Geocorr tool to crosswalk geographies.
  - [IPUMS](#) also has a helpful page with a 2010-2020 PUMA Crosswalk and a map of 2010 and 2020 PUMAs
- Page 13 of [ACS 5-Year PUMS User Guide](#) contains more information about dual vintage PUMAs and resources to make sense of PUMA changes over time.

# Today's Agenda

API Background and Basics

API Examples

- Population of Municipios
- Sex by Age by Race Estimates for California
- Accessing and Downloading an Entire Table

Resources

# Stay Connected

data.census.gov  
Resources page:  
[census.gov/data/what-is-data-census-gov.html](https://www.census.gov/data/what-is-data-census-gov.html)

API Resources page:  
[census.gov/data/what-is-data-census-gov/guidance-for-data-users/how-to-materials-for-using-the-census-api.html](https://www.census.gov/data/what-is-data-census-gov/guidance-for-data-users/how-to-materials-for-using-the-census-api.html)



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Do you have questions on how to use the Census API? Check out our step-by-step guidance to learn how to use the Census API to find the data you need. To learn more about the Census API, and to begin using it to locate data, visit our [Census API Developers](#) page.

**Guidance for Developers** [Census Data API Flyer < 1.0 MB](#)

This page provides developers and researchers on how to use the Census Data API and Census Microdata API from U.S. Census Bureau datasets.

**Webinar**  
...ta on data.census.gov  
...2, 2023  
...:00 p.m. - 3:00 p.m. (ET)  
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## Data.census.gov Newsletter – September 2022



Learn about the latest system updates, data releases, and educational opportunities for [data.census.gov](https://data.census.gov).

### Upcoming Workshops

Get hands-on practice with data.census.gov by joining one of our upcoming workshops.

**\*New Workshop\***  
**Making the Most of Mapping in**

**Upcoming Webinars:**

**2021 ACS 1-Year Pre-Release Webinar:**  
9/8 at 2:00pm

Learn how to access data and online resources from the 2021 American Community Survey (ACS) set to be publicly released on September 15. The webinar will also provide tips for comparing ACS geographies and statistics over time.

**Data.census.gov News and Updates:**  
**September 2022**  
9/28 at 2:00pm  
In this webinar we will

# Additional resources for R and Python Users

- Introduction to the Census Bureau Data API:
  - <https://www.census.gov/data/academy/courses/intro-to-the-census-bureau-data-api.html>
  - Skip to Module 3: Part 2 for a video training on accessing the API using tidycensus
- Additional tidycensus Resources via Kyle Walker (author of tidycensus R package):
  - *Analyzing US Census Data: Methods, Maps, and Models in R* by Kyle Walker: <https://walker-data.com/census-r/index.html>
  - Basic Usage of tidycensus: <https://walker-data.com/tidycensus/articles/basic-usage.html>
  - Working with Census microdata: <https://walker-data.com/tidycensus/articles/pums-data.html>
- Additional censusdis Resources via Darren Vengroff (author of censusdis Python package):
  - *Introduction to Working with U.S. Census Data in Python*: <https://www.youtube.com/watch?v=3vyC7ON0Tvg>
  - Installation and First Example: <https://github.com/censusdis/censusdis?tab=readme-ov-file#installation-and-first-example>
  - Full tutorial (with many examples and exercises): <https://github.com/censusdis/censusdis-tutorial-2024>
- Using American Community Survey Data with Open-Source Software:
  - <https://www.census.gov/programs-surveys/acs/guidance/statistical-software.html>
- Census Bureau Slack Channel:
  - <https://www.census.gov/data/developers/api-forum.html>

# Questions?



## Feedback and additional questions:

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