# What is FIPS?

FIPS codes are numbers which uniquely identify geographic areas. The number of digits in FIPS codes vary depending on the level of geography. State-level FIPScodes have two digits, county-level FIPS codes have five digits of which the first two are the FIPS code of the state to which the county belongs.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Area Type | GEOID Structure | Number of Digits | Example Geographic Area | Example GEOID |
| State | STATE | 2 | Texas | 48 |
| County | STATE+COUNTY | 2+3=5 | Harris County, TX | 48201 |
| County Subdivision | STATE+COUNTY+COUSUB | 2+3+5=10 | Pasadena CCD, Harris County, TX | 4820192975 |
| Places | STATE+PLACE | 2+5=7 | Houston, TX | 4835000 |

The most updated file for all Geocode is 2018. The data is located at the following directory:

<https://raw.githubusercontent.com/kschnippel/Census/master/Geocodes/all-geocodes-v2018.csv?token=AHGOFZNKK6RYFQ6GIZKT3TS6PUKXQ>

The most updated file for state Geocode is 2018. The data is located at the following directory:

<https://github.com/kschnippel/Census/blob/master/Geocodes/state-geocodes-v2018.csv>

# How can we use FIPS in our file?

Here, I will make an example using a population dataset with FIPS code.

<https://raw.githubusercontent.com/kschnippel/Census/master/2018_National_and_State_Population_Estimates/Census_Measure/sub-est2018_all.csv?token=AHGOFZJWFLBB3J5GUATNUKK6PUKVS>

From this file, there are several keys.

1. SUMLEV - Geographic summary level
2. SUMLEV has the following keys:

040 = State

050 = County

061 = Minor Civil Division

071 = Minor Civil Division place part

157 = County place part

162 = Incorporated place

170 = Consolidated city

172 = Consolidated city -- place within consolidated city

1. STATE - State FIPS CODE
2. COUNTY - County FIPS CODE
3. PLACE - Place FIPS CODE
4. COUSUB - Minor Civil Division FIPS code
5. CONCIT - Consolidated city FIPS code
6. PRIMGEO\_FLAG - Primitive Geography Flag (1=Yes; 0=No)
7. FUNCSTAT - Functional Status Code
8. NAME - Area name
9. STNAME -State name

## City FIPS CODE, which is PLACE FIPS CODE

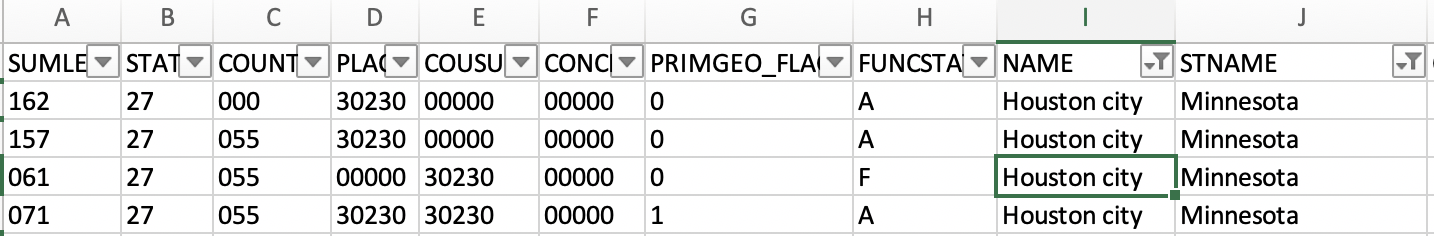
For example, if you want to find out Houston, Texas FIPS code, it is the following:



It is an incorporated place, so SUMLEV is 162, Texas State FIPS CODE is 48, place FIPS code is 35000. Houston is a city, so it does not have COUNTY, CONSUB, and CONCIT is 00000 because it is not applied.

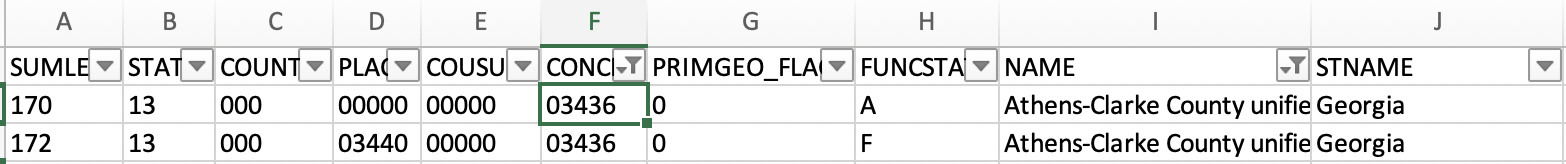
## COUNTY and OTHER FIPS CODE USAGE

On the other hand, Minnesota has 4 different FIPS CODEs that belong to 4 different Houston City. It can be differentiated as the following:



1. SUMLEV is 162, so this City does not have COUNTY FIPS CODE.
2. SUMLEV is 157, this is the County place part. So, it has COUNTY FIPS CODE, which is 055, but not CONSUB code.
3. SUMLEV is 061, this is a minor civil division. So, it does not have Place FIPS CODE.
4. SUMLEV is 071, this is a minor civil division part. So, it has all STATE, COUNTY, PLACE, CONSUB code.

Lastly, for CONCIT code, it is existed when it is a consolidated city. So, SUMLEV code is either 170 or 172.



# Summary of FIPS

## The number of FIPS codes at different levels.

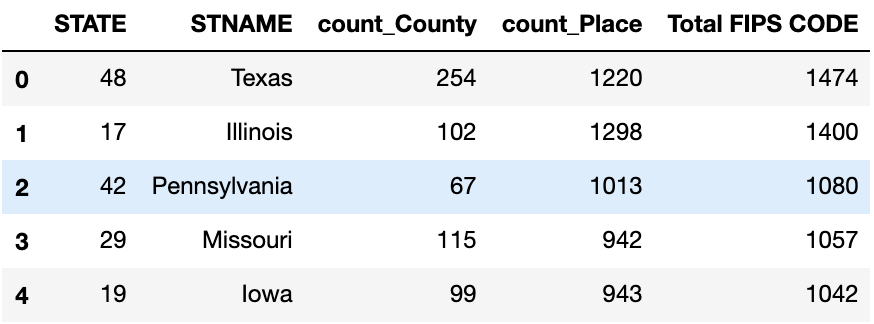
For FIPS code count, I used SUMLEV to know how many codes are there.

|  |  |  |
| --- | --- | --- |
| SUMLEV CODE | SUMMARY LEVEL | Number |
| 40 | State | 51 |
| 50 | County | 3,142 |
| 61 | Minor Civil Division | 21,071 |
| 71 | Minor Civil Division place part | 13,845 |
| 157 | County place part | 23,709 |
| 162 | Incorporated place | 19,495 |
| 170 | Consolidated city | 8 |
| 172 | Consolidated city -- place within consolidated city | 115 |
| Total |  | 81,436 |

## 

## The number of FIPS codes in each State

I prepared a separate jypter notebook for each state analysis. Here is the top 5 states that have most FIPS code



## How many FIPS codes have been changed. (especially in place code level)

For change, I downloaded the data from Geographic Boundary Change Notes in Census.

<https://www.census.gov/programs-surveys/geography/technical-documentation/boundary-change-notes.html>

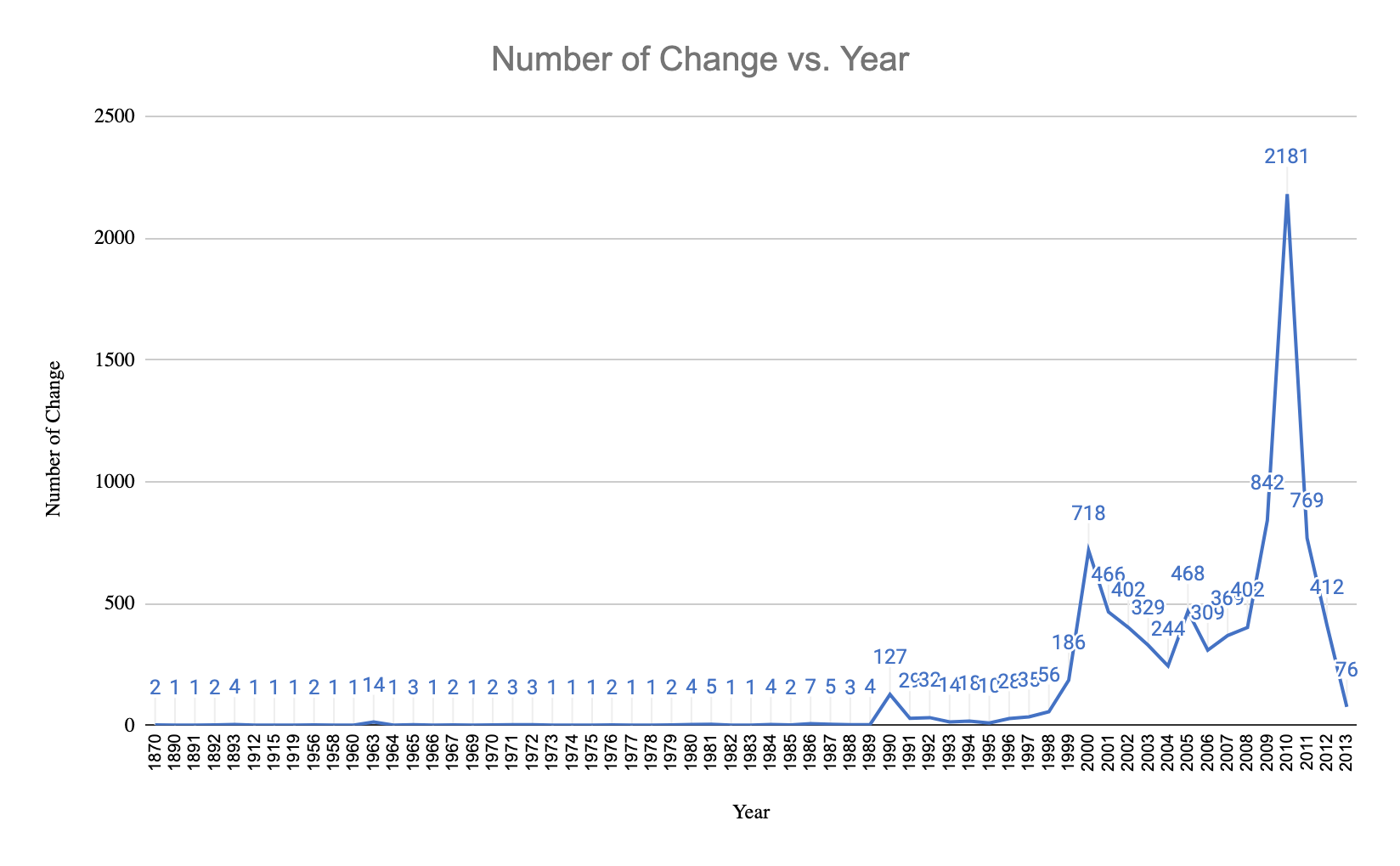
I chose the United States to get all the dataset.

<https://www2.census.gov/geo/docs/reference/bndrychange/united-states.txt>

### Yearly Changes

We can easily confirm that FIPS CODE keeps changes, especially after 2000.

Following is the list of most recent changes.



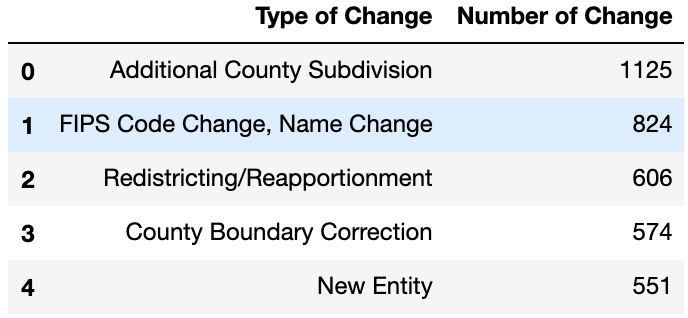
Yearly Change

|  |  |
| --- | --- |
| Year Range | Number of Change |
| 1870-1989 | 92 |
| 1990-1999 | 535 |
| 2000-2009 | 4549 |
| 2010-2013 | 3438 |

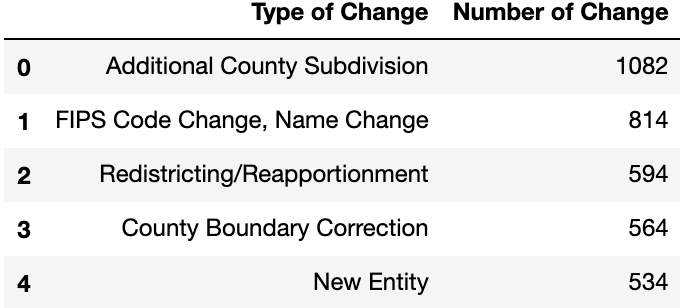
Numbers are higher in the Census reporting year, so this number may go up in most recent data.

### Type of Change

Top 5 types of change from overall are above.



Let's check changes after year 1999 because that is why most changes have occurred.



Top 5 are the same and as you can see from the number of changes, most of them occurred after 1999.