Package ‘totalcensus’

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Type Package
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and extract data, in particular high resolution data at block, block group, and tract level, from
decennial census and American Community Survey 1-year and 5-year estimates.
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License MIT + file LICENSE
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**convert_fips_to_names**

convert fips codes to names of a geographies

**Description**

convert fips codes to names of a geographies

**Usage**

```
convert_fips_to_names(
  FIPs,  
  states = NULL,  
  geo_header = "STATE",  
  in_states = NULL
)
```

**Arguments**

- `FIPs` string vector of fips code such as c("021", "002")
- `states` string vector of state abbreviations having same length as FIPs
- `geo_header` string, taking values of "STATE", "COUNTY", "PLACE", "COUSUB" or "CBSA".
- `in_states` which states are these FIPs generated from. Use state abbreviations or "US" for national. Vector of unique states.

**Value**

vector of names corresponding to FIPs and states
Examples

```r
aaa <- convert_fips_to_names(c("11", "44"))
# [1] "DC" "RI"

bbb <- convert_fips_to_names(c("001", "013"), states = c("RI", "MA"), geo_header = "COUNTY")
# [1] "Bristol County" "Hampden County"
```

### dict_acs1_geocomponent

*List of geographic components used in ACS 1 year surveys*

**Description**

List of geographic components used in ACS 1 year surveys

**Usage**

```r
dict_acs1_geocomponent
```

**Format**

A data.table with 28 rows and 9 variables:

- **code**: code for the geocomponent, such as "01" and "M3"
- **geo_component**: description of the geographic component
- **state_2009_to_now**: whether a geocomponent available in state files since 2009
- **state_2007_2008**: whether a geocomponent available in state files in 2007 and 2008
- **state_2005_2006**: whether a geocomponent available in state files in 2005 and 2006
- **US_2009_to_now**: whether a geocomponent available in national files since 2009
- **US_2006**: whether a geocomponent available in national files in 2006
- **US_2005**: whether a geocomponent available in national files in 2005
*dict_acs1_summarylevel*

List of summary levels used in ACS 1 year surveys

**Description**

List of summary levels used in ACS 1 year surveys

**Usage**

`dict_acs1_summarylevel`

**Format**

A data.table with 23 rows and 5 variables:

- **code** code of summary level
- **summary_level** description of summary level
- **state_2006_to_now** wheather a summary level available in state files since 2006
- **state_2005** wheather a summary level available in state files in 2005
- **US_2005_to_now** wheather a summary level available in national files since 2005

*dict_acs1_table*

List of summary levels used in ACS 1 year surveys

**Description**

List of summary levels used in ACS 1 year surveys

**Usage**

`dict_acs1_table`

**Format**

A data.table with 1811 rows and 16 variables:

- **table_number** table number such as "C27013"
- **table_name** description of the table
- **acs1_2019** whether the table is available in 2019
- **acs1_2018** whether the table is available in 2018
- **acs1_2017** whether the table is available in 2017
- **acs1_2016** whether the table is available in 2016
dict_acs5_geocomponent

List of geographic components used in ACS 5 year surveys

Description

List of geographic components used in ACS 5 year surveys

Usage
dict_acs5_geocomponent

Format

A data.table with 19 rows and 4 variables:

- code: code for the geocomponent, such as "01" and "M3"
- geo_component: description of the geographic component
- state_2009_to_now: whether a geocomponent available in state files since 2009
- US_2009_to_now: whether a geocomponent available in national files since 2009
dict_acs5_summarylevel

\textit{List of summary levels used in ACS 5 year surveys}

\subsection*{Description}

List of summary levels used in ACS 5 year surveys

\subsection*{Usage}

dict_acs5_summarylevel

\subsection*{Format}

A data.table with 87 rows and 8 variables

\begin{itemize}
  \item \textbf{code} code of summary level
  \item \textbf{summary_level} description of summary level
  \item \textbf{state\_2013\_to\_now} wheather a summary level available in state files since 2013
  \item \textbf{state\_2012} wheather a summary level available in state files in 2012
  \item \textbf{state\_2009\_to\_2011} wheather a summary level available in state files in 2009 - 2011
  \item \textbf{US\_2011\_to\_now} wheather a summary level available in national files since 2011
  \item \textbf{US\_2010} wheather a summary level available in national files in 2010
  \item \textbf{US\_2009} wheather a summary level available in national files in 2009
\end{itemize}

\subsection*{Source}

generated from lookup datasets of years 2009 - 2016

---

dict_acs5_table

\textit{List of summary levels used in ACS 5 year surveys}

\subsection*{Description}

List of summary levels used in ACS 5 year surveys

\subsection*{Usage}

dict_acs5_table
dict_acs_geoheader_2005_1year

**Format**

A data.table with 1174 rows and 14 variables:

- **table_number**: table number such as "C27013"
- **table_name**: description of the table
- **acs5_2019**: whether the table is available in 2019
- **acs5_2018**: whether the table is available in 2018
- **acs5_2017**: whether the table is available in 2017
- **acs5_2016**: whether the table is available in 2016
- **acs5_2015**: whether the table is available in 2015
- **acs5_2014**: whether the table is available in 2014
- **acs5_2013**: whether the table is available in 2013
- **acs5_2012**: whether the table is available in 2012
- **acs5_2011**: whether the table is available in 2011
- **acs5_2010**: whether the table is available in 2010
- **acs5_2009**: whether the table is available in 2009
- **universe**: universe of the table

---

dict_acs_geoheader_2005_1year

*List of geographic headers used in 2005 ACS 1 year survey*

**Description**

List of geographic headers used in 2005 ACS 1 year survey

**Usage**

dict_acs_geoheader_2005_1year

**Format**

A data.table with 35 rows and 4 variables

- **reference**: reference of the geoheader
- **field**: description of the geoheader
- **start**: starting position of the geoheader in geography file
- **end**: ending position of the geoheader in geography file

**Source**

**dict_acs_geoheader_2006_2008_1year**

List of geographic headers used in 2006 - 2008 ACS 1 year survey

**Description**

List of geographic headers used in 2006 - 2008 ACS 1 year survey

**Usage**

`dict_acs_geoheader_2006_2008_1year`

**Format**

A data.table with 51 rows and 4 variables

- **reference** reference of the geoheader
- **field** description of the geoheader
- **start** starting position of the geoheader in geography file
- **end** ending position of the geoheader in geography file

**Source**


---

**dict_acs_geoheader_2009_1year**

List of geographic headers in 2009 ACS 1 year survey

**Description**

List of geographic headers in 2009 ACS 1 year survey

**Usage**

`dict_acs_geoheader_2009_1year`

**Format**

A data.table with 50 rows and 4 variables

- **reference** reference of the geoheader
- **field** description of the geoheader
- **start** starting position of the geoheader in geography file
- **end** ending position of the geoheader in geography file
dict_acs_geoheader_2010

Source

2016 ACS Summary File technical documentation, page 11.

dict_acs_geoheader_2009_5year

List of geographic headers used in ACS 5 year survey ending 2009

Description

List of geographic headers used in ACS 5 year survey ending 2009

Usage

dict_acs_geoheader_2009_5year

Format

A data.table with 51 rows and 4 variables

reference reference of the geoheader

field description of the geoheader

start starting position of the geoheader in geography file

end ending position of the geoheader in geography file

Source

2009 ACS Summary File technical documentation, page 12.

dict_acs_geoheader_2010

List of geographic headers used in 2010 ACS 1 and 5 year surveys

Description

List of geographic headers used in 2010 ACS 1 and 5 year surveys

Usage

dict_acs_geoheader_2010
dict_acs_geoheader_2011_now

Format

A data.table with 53 rows and 4 variables

reference  reference of the geoheader
field  description of the geoheader
start  starting position of the geoheader in geography file
end  ending position of the geoheader in geography file

Source

2016 ACS Summary File technical documentation, page 11.

-----------

dict_acs_geoheader_2011_now

List of geographic headers used in American Community Survey since 2011

Description

List of geographic headers used in American Community Survey since 2011

Usage

dict_acs_geoheader_2011_now

Format

A data.table with 53 rows and 4 variables

reference  reference of the geoheader
field  description of the geoheader
start  starting position of the geoheader in geography file
end  ending position of the geoheader in geography file

Source

List of all geographic components, 2000 version

Description
This dataset contains all available geographic components and codes.

Usage

dict_all_geocomponent_2000
dict_all_geocomponent_2000

dict_all_geocomponent_2000
dict_all_geocomponent_2000

Format
A data.table with 99 rows and 2 variables:

code code for the geocomponent, such as "01" and "M3"
geo_component description of the geographic component

A data.table with 99 rows and 2 variables:

code code for the geocomponent, such as "01" and "M3"
geo_component description of the geographic component

Source
2000 Census Summary File 1 technical documentation page 7-15

List of all geographic components, 2010 version

Description
This dataset contains all available geographic components and codes.

Usage

dict_all_geocomponent_2010
dict_all_geocomponent_2010

dict_all_geocomponent_2010
dict_all_geocomponent_2010

Source
2000 Census Summary File 1 technical documentation page 7-15
dict_all_summarylevel

Format

A data.table with 114 rows and 2 variables:

**code** code for the geocomponent, such as "01" and "M3"

**geo_component** description of the geographic component

A data.table with 114 rows and 2 variables:

**code** code for the geocomponent, such as "01" and "M3"

**geo_component** description of the geographic component

Source

2010 Census Summary File 1 technical documentation page 6-15

---

dict_all_summarylevel  List of all summary levels

---

Description

List of all summary levels

Usage

dict_all_summarylevel

Format

A data.table with 216 rows and 2 variables

**code** code of summary level

**summary_level** description of summary level

Source

Summary level code list
dict_cbsa

List CBSA code of Metropolitan Statistical Area/Micropolitan Statistical Area

Description

This dataset contains Metropolitan Statistical Area/Micropolitan Statistical Area CBSA code and title, plus associated metrodivision, CSA, state, and county code. Search for CBSA with function search_cbsa.

Usage

data("dict_cbsa")

Format

A data.table with 1882 rows and 12 variables:

- CBSA  CBSA code
- CBSA_title  CBSA title
- state_full  full name of the state. A cbsa could include multiple states
- county  county or county equivalent
- CSA  code of the CSA to which the CBSA belongs
- CSA_title  CSA title
- METDIV  metro division code
- METDIV_title  metro division title
- metro_micro  is the CBSA a metropolitan or a micropolitan statistic area
- STATE  FIPS of the state
- COUNTY  FIPS of the county
- central_outlying  is the country a central or outlying county in the CBSA

Source

List of CBSA
dict_decennial_geocomponent_2000

List of geographic components and codes in census 2000

Description
This dataset contains the geographic components and codes used in Census 2000 summary file 1. Search geographic components with function search_geocomponents.

Usage
dict_decennial_geocomponent_2000

Format
A data.table with 98 rows and 4 variables:
- **code** code for the geocomponent, such as "01" and "M3"
- **geo_component** description of the geographic component
- **state_file** wheather the geocomponent available in state files
- **US_file** wheather the geocomponent available in national files

Source
2000 Census Summary File 1 technical documentation page 7-15

---

dict_decennial_geocomponent_2010

List of geographic components and codes in census 2010

Description
This dataset contains the geographic components and codes used in Census 2010 summary file 1 (with urban/rural update). Search geographic components with function search_geocomponents.

Usage
dict_decennial_geocomponent_2010

Format
A data.table with 96 rows and 4 variables:
- **code** code for the geocomponent, such as "01" and "M3"
- **geo_component** description of the geographic component
- **state_file** wheather the geocomponent available in state files
- **US_file** wheather the geocomponent available in national files
Source

2010 Census Summary File 1 technical documentation page 6-15

------------

dict_decennial geoheader_2000

List of geographic headers in census 2000

Description

This dataset has the complete list of geographic header references and their description used in Census 2000 summary file 1. Search the dataset with function search_geoheaders.

Usage

dict_decennial_geoheader_2000

Format

A data.table with 83 rows and 4 variables

- reference reference of the geoheader record
- field description of the geoheader record field
- start starting position of the geoheader in the record
- end ending position of the geoheader in the record

Source

2000 Census Summary File 1 technical documentation page 2-7

------------

dict_decennial_geoheader_2010

List of geographic headers in census 2010

Description

This dataset has the complete list of geographic header references and their discription used in Census 2010 summary file 1 (with urban/rural update). Search the dataset with function search_geoheaders.

Usage

dict_decennial_geoheader_2010
dict_decennial_summarylevel_2000

Format

A data.table with 101 rows and 4 variables

- **reference**: reference of the geoheader record
- **field**: description of the geoheader record field
- **start**: starting position of the geoheader in the record
- **end**: ending position of the geoheader in the record

Source

2010 Census Summary File 1 technical documentation page 2-8

dict_decennial_summarylevel_2000

Summary levels available in Census 2000

Description

This data contains summary levels and codes used in census 2000 summary file 1. Search with function `search_summarylevels`.

Usage

dict_decennial_summarylevel_2000

Format

A data.table with 114 rows and 4 variables

- **code**: code of summary level
- **summary_level**: description of summary level
- **in_state_file**: wheather the summary level available in state files
- **in_US_file**: wheather the summary level available in national files

Source

2000 Census Summary File 1 technical documentation page 4-1.
dict_decennial_summarylevel_2010

Summary levels available in Census 2010

Description
This data contains summary levels and codes used in census 2010 summary file 1 (with urban/rural update). Search with function `search_summarylevels`.

Usage
dict_decennial_summarylevel_2010

Format
A data.table with 165 rows and 4 variables
- **code**: code of summary level
- **summary_level**: description of summary level
- **in_state_file**: wheather the summary level available in state files
- **in_US_file**: wheather the summary level available in national files

Source
2010 Census Summary File 1 technical documentation page 4-16 state summary file with urban/rural update

dict_decennial_table_2000

Complete list of 2000 census tables

Description
This dataset contains all census tables in census 2000 summary file 1.

Usage
dict_decennial_table_2000

Format
A data.table with 286 rows and 4 variables:
- **table_number**: table number such as "H1", "PCT22G"
- **table_name**: description of the table
- **universe**: universe of the data
- **table_ref**: reference code such as "H0010", "PCT022G"
Source

2000 Census Summary File 1 technical documentation all across chapter 5.

---

dict_decennial_table_2010

Complete list of 2010 census tables

---

Description

This dataset contains all census tables in census 2010 summary file 1 (with urban/rural update).

Usage

dict_decennial_table_2010

Format

A data.table with 333 rows and 4 variables:

- `table_number` table number such as "H1", "PCT22G"
- `table_name` description of the table
- `universe` universe of the data
- `table_ref` reference code such as "H0010", "PCT022G"

Source

2010 Census Summary File 1 technical documentation chapter 5.

---

dict_fips

List of FIPS code as of 2016 in the US

---

Description

This dataset contains a list of FIPS of states, counties, county subdivisions, places, consolidated cities, and their names and summary levels as well as full name and abbreviation of state. It does NOT contain FIPS of many small areas. Search for FIPS with function search_fips.

Usage

data("dict_fips")
download_generated_data

### Format

A data.table with 43934 rows and 9 variables:

- **state_full**: full name of a state such as "Alabama"
- **state_abbr**: abbreviation of a state such as "AL"
- **STATE**: FIPS code of the state
- **SUMLEV**: summary level of the entry in the row
- **COUNTY**: FIPS code of county
- **CUSUB**: FIPS of COUNTY SUBdivision
- **PLACE**: FIPS code of place
- **CONCIT**: FIPS code of CONSolidated CITY
- **NAME**: name of the entry in the row

### Source

List of FIPS as of 2016

---

### Description

Download decennial census and ACS 5-year and 1-year data from United States Census bureau. It also download generated data from Census 2010 if not exist.

### Usage

```r
download_census(survey, year, states = c(states_DC, "US", "PR"))
```

#### Arguments

- **survey**: Which survey to download from, "decennial", "acs5year", or "acs1year"
- **year**: year or ending year of the survey
- **states**: vector of abbreviations of states such as c("MA", "RI")

---

### Description

This function downloads data generated from Census 2010 from Census 2010.

### Usage

```r
download_generated_data()
```
Description

There is slight difference in the lookup tables of each year.

Usage

lookup_acs1year_2005

Format

A data.table with 27246 rows and 7 variables

- file_segment sequence number of segment data files, from "0001" to "0166"
- table_content description of columns in a table
- reference reference of the table content, such as "B01001_002". The reference is used to extract data of table content.

Source

Check for each year of ACS 1-year and 5-year Sequence Number/Table Number Lookup File.

Description

There is slight difference in the lookup tables of each year.

Usage

lookup_acs1year_2006

Format

A data.table with 27986 rows and 7 variables

- file_segment sequence number of segment data files, from "0001" to "0166"
- table_content description of columns in a table
- reference reference of the table content, such as "B01001_002". The reference is used to extract data of table content.

Source

Check for each year of ACS 1-year and 5-year Sequence Number/Table Number Lookup File.
lookup_acs1year_2007   ACS 1-year 2007 file segment and table lookup data

Description
There is slightly difference in the lookup tables of each year.

Usage
lookup_acs1year_2007

Format
A data.table with 29709 rows and 7 variables
- file_segment sequence number of segment data files, from "0001" to "0166"
- table_content description of columns in a table
- reference reference of the table content, such as "B01001_002". The reference is used to extract data of table content.

Source
Check for each year of ACS 1-year and 5-year Sequence Number/Table Number Lookup File.

lookup_acs1year_2008   ACS 1-year 2008 file segment and table lookup data

Description
There is slightly difference in the lookup tables of each year.

Usage
lookup_acs1year_2008

Format
A data.table with 34403 rows and 7 variables
- file_segment sequence number of segment data files, from "0001" to "0166"
- table_content description of columns in a table
- reference reference of the table content, such as "B01001_002". The reference is used to extract data of table content.

Source
Check for each year of ACS 1-year and 5-year Sequence Number/Table Number Lookup File.
**lookup_acs1year_2009  ACS 1-year 2009 file segment and table lookup data**

**Description**

There is slightly difference in the lookup tables of each year.

**Usage**

lookup_acs1year_2009

**Format**

A data.table with 34408 rows and 7 variables

- **file_segment** sequence number of segment data files, from "0001" to "0166"
- **table_content** description of columns in a table
- **reference** reference of the table content, such as "B01001_002". The reference is used to extract data of table content.

**Source**

Check for each year of ACS 1-year and 5-year Sequence Number/Table Number Lookup File.

---

**lookup_acs1year_2010  ACS 1-year 2010 file segment and table lookup data**

**Description**

There is slightly difference in the lookup tables of each year.

**Usage**

lookup_acs1year_2010

**Format**

A data.table with 35240 rows and 7 variables

- **file_segment** sequence number of segment data files, from "0001" to "0166"
- **table_content** description of columns in a table
- **reference** reference of the table content, such as "B01001_002". The reference is used to extract data of table content.

**Source**

Check for each year of ACS 1-year and 5-year Sequence Number/Table Number Lookup File.
**lookup_acs1year_2011  ACS 1-year 2011 file segment and table lookup data**

**Description**

There is slightly difference in the lookup tables of each year.

**Usage**

lookup_acs1year_2011

**Format**

A data.table with 34454 rows and 6 variables

- **file_segment** sequence number of segment data files, from "0001" to "0165"
- **table_content** description of columns in a table
- **reference** reference of the table content, such as "B01001_002". The reference is used to extract data of table content.

**Source**

Check for each year of ACS 1-year and 5-year Sequence Number/Table Number Lookup File.

---

**lookup_acs1year_2012  ACS 1-year 2012 file segment and table lookup data**

**Description**

There is slightly difference in the lookup tables of each year.

**Usage**

lookup_acs1year_2012

**Format**

A data.table with 34394 rows and 6 variables

- **file_segment** sequence number of segment data files, from "0001" to "0165"
- **table_content** description of columns in a table
- **reference** reference of the table content, such as "B01001_002". The reference is used to extract data of table content.

**Source**

Check for each year of ACS 1-year and 5-year Sequence Number/Table Number Lookup File.
**lookup_acs1year_2013  ACS 1-year 2013 file segment and table lookup data**

**Description**
There is slightly difference in the lookup tables of each year.

**Usage**
lookup_acs1year_2013

**Format**
A data.table with 32752 rows and 7 variables
- **file_segment** sequence number of segment data files, from "0001" to "0165"
- **table_content** description of columns in a table
- **reference** reference of the table content, such as "B01001_002". The reference is used to extract data of table content.

**Source**
Check for each year of ACS 1-year and 5-year Sequence Number/Table Number Lookup File.

---

**lookup_acs1year_2014  ACS 1-year 2014 file segment and table lookup data**

**Description**
There is slightly difference in the lookup tables of each year.

**Usage**
lookup_acs1year_2014

**Format**
A data.table with 31711 rows and 6 variables
- **file_segment** sequence number of segment data files, from "0001" to "0165"
- **table_content** description of columns in a table
- **reference** reference of the table content, such as "B01001_002". The reference is used to extract data of table content.

**Source**
Check for each year of ACS 1-year and 5-year Sequence Number/Table Number Lookup File.
Description

There is slightly difference in the lookup tables of each year.

Usage

lookup_acs1year_2015

Format

A data.table with 31751 rows and 7 variables

- **file_segment** sequence number of segment data files, from "0001" to "0165"
- **table_content** description of columns in a table
- **reference** reference of the table content, such as "B01001_002". The reference is used to extract data of table content.

Source

Check for each year of ACS 1-year and 5-year Sequence Number/Table Number Lookup File.

---

Description

There is slightly difference in the lookup tables of each year.

Usage

lookup_acs1year_2016

Format

A data.table with 31835 rows and 7 variables

- **file_segment** sequence number of segment data files, from "0001" to "0166"
- **table_content** description of columns in a table
- **reference** reference of the table content, such as "B01001_002". The reference is used to extract data of table content.

Source

Check for each year of ACS 1-year and 5-year Sequence Number/Table Number Lookup File.
## lookup_acs1year_2017

**ACS 1-year 2017 file segment and table lookup data**

### Description

There is slightly difference in the lookup tables of each year.

### Usage

lookup_acs1year_2017

### Format

A data.table with 33749 rows and 7 variables

- **file_segment** sequence number of segment data files, from "0001" to "0166"
- **table_content** description of columns in a table
- **reference** reference of the table content, such as "B01001_002". The reference is used to extract data of table content.

### Source

Check for each year of ACS 1-year and 5-year Sequence Number/Table Number Lookup File.

## lookup_acs1year_2018

**ACS 1-year 2018 file segment and table lookup data**

### Description

There is slightly difference in the lookup tables of each year.

### Usage

lookup_acs1year_2018

### Format

A data.table with 35502 rows and 7 variables

- **file_segment** sequence number of segment data files, from "0001" to "0166"
- **table_content** description of columns in a table
- **reference** reference of the table content, such as "B01001_002". The reference is used to extract data of table content.

### Source

Check for each year of ACS 1-year and 5-year Sequence Number/Table Number Lookup File.
lookup_acs1year_2019  
ACS 1-year 2019 file segment and table lookup data

Description
There is slightly difference in the lookup tables of each year.

Usage
lookup_acs1year_2019

Format
A data.table with 35527 rows and 7 variables
- **file_segment** sequence number of segment data files, from "0001" to "0166"
- **table_content** description of columns in a table
- **reference** reference of the table content, such as "B01001_002". The reference is used to extract data of table content.

Source
Check for each year of ACS 1-year and 5-year Sequence Number/Table Number Lookup File.

lookup_acs5year_2009  
ACS 5-year 2009 file segment and table lookup data

Description
ACS 5-year 2009 file segment and table lookup data

Usage
lookup_acs5year_2009

Format
A data.table with 21207 rows and 7 variables
- **file_segment** sequence number of segment data files, from "0001" to "0122"
- **table_content** description of columns in a table
- **reference** reference of the table content, such as "B01001_002". The reference is used to extract data of table content.
- **restriction** restrictions applied the the table_content
- **table_number** table number such as "B01001"
- **table_name** description of table. A table has multiple columns (table_content)
- **universe** the universe of the data
**lookup_acs5year_2010**

**Source**
Check for each year of ACS 1-year and 5-year Sequence Number/Table Number Lookup File.

---

**lookup_acs5year_2010**  
*ACS 5-year 2010 file segment and table lookup data*

---

**Description**
ACS 5-year 2010 file segment and table lookup data

**Usage**
lookup_acs5year_2010

**Format**
A data.table with 21487 rows and 7 variables

- **file_segment**  sequence number of segment data files, from "0001" to "0122"
- **table_content**  description of columns in a table
- **reference**  reference of the table content, such as "B01001_002". The reference is used to extract data of table content.
- **restriction**  restrictions applied the the table_content
- **table_number**  table number such as "B01001"
- **table_name**  description of table. A table has multiple columns (table_content)
- **universe**  the universe of the data

**Source**
Check for each year of ACS 1-year and 5-year Sequence Number/Table Number Lookup File.

---

**lookup_acs5year_2011**  
*ACS 5-year 2011 file segment and table lookup data*

---

**Description**
ACS 5-year 2011 file segment and table lookup data

**Usage**
lookup_acs5year_2011
Format

A data.table with 21038 rows and 7 variables

- file_segment sequence number of segment data files, from "0001" to "0122"
- table_content description of columns in a table
- reference reference of the table content, such as "B01001_002". The reference is used to extract data of table content.
- restriction restrictions applied the the table_content
- table_number table number such as "B01001"
- table_name description of table. A table has multiple columns (table_content)
- universe the universe of the data

Source

Check for each year of ACS 1-year and 5-year Sequence Number/Table Number Lookup File.

---

lookup_acs5year_2012  ACS 5-year 2012 file segment and table lookup data

Description

ACS 5-year 2012 file segment and table lookup data

Usage

lookup_acs5year_2012

Format

A data.table with 22527 rows and 7 variables

- file_segment sequence number of segment data files, from "0001" to "0122"
- table_content description of columns in a table
- reference reference of the table content, such as "B01001_002". The reference is used to extract data of table content.
- restriction restrictions applied the the table_content
- table_number table number such as "B01001"
- table_name description of table. A table has multiple columns (table_content)
- universe the universe of the data

Source

Check for each year of ACS 1-year and 5-year Sequence Number/Table Number Lookup File.
lookup_acs5year_2013  ACS 5-year 2013 file segment and table lookup data

Description
ACS 5-year 2013 file segment and table lookup data

Usage
lookup_acs5year_2013

Format
A data.table with 22711 rows and 7 variables

file_segment  sequence number of segment data files, from "0001" to "0122"
table_content  description of columns in a table
reference  reference of the table content, such as "B01001_002". The reference is used to extract data of table content.
restriction  restrictions applied to the table_content
table_number  table number such as "B01001"
table_name  description of table. A table has multiple columns (table_content)
universe  the universe of the data

Source
Check for each year of ACS 1-year and 5-year Sequence Number/Table Number Lookup File.

lookup_acs5year_2014  ACS 5-year 2014 file segment and table lookup data

Description
ACS 5-year 2014 file segment and table lookup data

Usage
lookup_acs5year_2014
Format

A data.table with 22627 rows and 7 variables

- **file_segment** sequence number of segment data files, from "0001" to "0122"
- **table_content** description of columns in a table
- **reference** reference of the table content, such as "B01001_002". The reference is used to extract data of table content.
- **restriction** restrictions applied the the table_content
- **table_number** table number such as "B01001"
- **table_name** description of table. A table has multiple columns (table_content)
- **universe** the universe of the data

Source

Check for each year of ACS 1-year and 5-year Sequence Number/Table Number Lookup File.

---

**lookup_acs5year_2015**  
**ACS 5-year 2015 file segment and table lookup data**

**Description**

ACS 5-year 2015 file segment and table lookup data

**Usage**

**lookup_acs5year_2015**

**Format**

A data.table with 22910 rows and 7 variables

- **file_segment** sequence number of segment data files, from "0001" to "0122"
- **table_content** description of columns in a table
- **reference** reference of the table content, such as "B01001_002". The reference is used to extract data of table content.
- **restriction** restrictions applied the the table_content
- **table_number** table number such as "B01001"
- **table_name** description of table. A table has multiple columns (table_content)
- **universe** the universe of the data

Source

Check for each year of ACS 1-year and 5-year Sequence Number/Table Number Lookup File.
lookup_acs5year_2016 ACS 5-year 2016 file segment and table lookup data

Description

ACS 5-year 2016 file segment and table lookup data

Usage

lookup_acs5year_2016

Format

A data.table with 22958 rows and 7 variables

file_segment sequence number of segment data files, from "0001" to "0122"
table_content description of columns in a table
reference reference of the table content, such as "B01001_002". The reference is used to extract
data of table content.
restriction restrictions applied the the table_content
table_number table number such as "B01001"
table_name description of table. A table has multiple columns (table_content)
universe the universe of the data

Source

Check for each year of ACS 1-year and 5-year Sequence Number/Table Number Lookup File.

lookup_acs5year_2017 ACS 5-year 2017 file segment and table lookup data

Description

ACS 5-year 2017 file segment and table lookup data

Usage

lookup_acs5year_2017
Lookup ACS 5-year 2018

Format
A data.table with 25070 rows and 7 variables

- **file_segment** sequence number of segment data files, from "0001" to "0122"
- **table_content** description of columns in a table
- **reference** reference of the table content, such as "B01001_002". The reference is used to extract data of table content.
- **restriction** restrictions applied the table_content
- **table_number** table number such as "B01001"
- **table_name** description of table. A table has multiple columns (table_content)
- **universe** the universe of the data

Source
Check for each year of ACS 1-year and 5-year Sequence Number/Table Number Lookup File.

Description
ACS 5-year 2018 file segment and table lookup data

Usage
lookup_acs5year_2018

Format
A data.table with 26996 rows and 7 variables

- **file_segment** sequence number of segment data files, from "0001" to "0122"
- **table_content** description of columns in a table
- **reference** reference of the table content, such as "B01001_002". The reference is used to extract data of table content.
- **restriction** restrictions applied the table_content
- **table_number** table number such as "B01001"
- **table_name** description of table. A table has multiple columns (table_content)
- **universe** the universe of the data

Source
Check for each year of ACS 1-year and 5-year Sequence Number/Table Number Lookup File.
lookup_acs5year_2019  

ACS 5-year 2019 file segment and table lookup data

Description
ACS 5-year 2019 file segment and table lookup data

Usage
lookup_acs5year_2019

Format
A data.table with 27039 rows and 7 variables

- **file_segment** sequence number of segment data files, from "0001" to "0122"
- **table_content** description of columns in a table
- **reference** reference of the table content, such as "B01001_002". The reference is used to extract data of table content.
- **restriction** restrictions applied the the table_content
- **table_number** table number such as "B01001"
- **table_name** description of table. A table has multiple columns (table_content)
- **universe** the universe of the data

Source
Check for each year of ACS 1-year and 5-year Sequence Number/Table Number Lookup File.

lookup_decennial_2000  

Lookup data files and table contents of Census 2000

Description
This dataset includes all data fields of data files in census 2000 summary file 1. Fucntion search_tablecontents searches content in this dataset.

Usage
lookup_decennial_2000
lookup_decennial_2010

Format
A data.table with 8321 rows and 6 variables:

- **file_segment**  sequence number of segment data files, from 1 to 48
- **table_content** description of columns in a decennial table
- **reference**  reference of table content, such as "PCT0240019"
- **table_number**  table number such as "H1", "PCT22G"
- **table_name** description of table, which has many table_content
- **universe**  the universe of the decennial data

Source
2000 Census Summary File 1 technical documentation chapter 7.

lookup_decennial_2010  Lookup data files and table contents of Census 2010

Description
This dataset includes all data fields of data files in census 2010 summary file 1 (with urban/rural update). Function `search_tablecontents` searches content in this dataset.

Usage
`lookup_decennial_2010`

Format
A data.table with 9199 rows and 6 variables:

- **file_segment**  sequence number of segment data files, from 1 to 48
- **table_content** description of columns in a decennial table
- **reference**  reference of table content, such as "PCT0240019"
- **table_number**  table number such as "H1", "PCT22G"
- **table_name** description of table, which has many table_content
- **universe**  the universe of the decennial data

Source
2010 Census Summary File 1 technical documentation chapter 6.
read_acs1year  Read summary file 1 of ACS 1-year estimates

Description

This function retrieves data from summary file of ACS 1-year estimates. In addition to selected geographic headers and table contents, it also returns total population and coordinates of selected geographic areas, as well as summary levels and geographic components.

Usage

read_acs1year(
  year,
  states,
  table_contents = NULL,
  areas = NULL,
  geo_headers = NULL,
  summary_level = NULL,
  geo_comp = "total",
  with_margin = FALSE,
  dec_fill = NULL,
  show_progress = TRUE
)

Arguments

year  year of the estimate
states  vector of state abbreviations, such as "IN" and c("MA", "RI").
table_contents  selected references of contents in census tables. Users can choose a name for each reference, such as in c("abc = B01001_009", "fff = B00001_001"). Try to make names meaningful. To find the references of table contents of interest, search with function search_tablecontents.
areas  For metro area, in the format like "New York metro". For county, city, or town, must use the exact name as those in dict_fips in the format like "kent county, RI", "Boston city, MA", and "Lincoln town, RI". And special examples like "Salt Lake City city, UT" must keep the "city" after "City".
geo_headers  vector of references of selected geographic headers to be included in the return. Search with search_geoheaders
summary_level  select which summary level to keep, default to keep all. It takes strings including "state", "county", "county subdivision", "place", "tract", "block group", and "block" for the most common levels. It also take code. Search all codes with search_summarylevels.
geo_comp  select which geographic component to keep, "*" to keep every geo-component, "total" for "00", "urban" for "01", "urbanized area" for "04", "urban cluster" for "28", "rural" for "43". Others should input code, which can be found with
function `search_geocomponents`. Availability of geocomponent depends on summary level.

with_margin read also margin of error in addition to estimate
dec_fill whether to fill geo_headers codes with data from decennial census. The # codes in ACS summary file are incomplete. "dec2010" using decennial census 2010 data.
show_progress whether to show progress in fread()

Value
A data.table of selected data.

Examples

```r
## Not run:
# read summary data using areas of selected cities
aaa <- read_acs1year(
  year = 2016,
  states = c("UT", "RI"),
  table_contents = c("male = B01001_002", "female = B01001_026"),
  areas = c("Salt Lake City city, UT",
            "Providence city, RI",
            "PLACE = RI19180"),
  summary_level = "place",
  with_margin = TRUE
)

# read data using geoheaders - all major counties
bbb <- read_acs1year(
  year = 2015,
  states = c("UT", "RI"),
  table_contents = c("male = B01001_002", "female = B01001_026"),
  geo_headers = c("COUNTY"),
  summary_level = "county",
  with_margin = TRUE
)

## End(Not run)
```

read_acs5year  Read ACS 5-year estimates

Description
This function retrieves data from summary file of ACS 5-year estimates. In addition to selected geographic headers and table contents, it also returns total population and coordinates of selected geographic areas, as well as summary levels and geographic components.
read_acs5year

Usage

read_acs5year(
  year,
  states,
  table_contents = NULL,
  areas = NULL,
  geo_headers = NULL,
  summary_level = NULL,
  geo_comp = "total",
  with_margin = FALSE,
  dec_fill = NULL,
  show_progress = TRUE
)

Arguments

year ending year of the 5-year estimate
states vector of state abbreviations, such as "IN" and c("MA", "RI")
table_contents selected references of contents in census tables. Users can choose a name for each reference, such as in c("abc = B01001_009", "fff = B00001_001"). Try to make names meaningful. To find the references of table contents of interest, search with function search_tablecontents.
areas For metro area, in the format like "New York metro". For county, city, or town, must use the exact name as those in dict_fips in the format like "kent county, RI", "Boston city, MA", and "Lincoln town, RI". And special examples like "Salt Lake City city, UT" must keep the "city" after "City".
geo_headers vector of references of selected geographic headers to be included in the return, like "COUNTY" or c("PLACE", "CBSA"). Search with search_geoheaders
summary_level select which summary level to keep, default to keep all. It takes string including "state", "county", "county subdivision", "place", "tract", "block group", and "block" for the most common levels. It also take code. Search all codes with search_summarylevels.
geo_comp select which geographic component to keep, "*" to keep every geo-component, "total" for "00", "urban" for "01", "urbanized area" for "04", "urban cluster" for "28", "rural" for "43". Others should input code, which can be found with function search_geocomponents. Availability of geocomponent depends on summary level.
with_margin read also margin of error in addition to estimate
dec_fill whether to fill geo_headers codes with data from decennial census. The codes in ACS summary file are incomplete. "dec2010" using decennial census 2010 data
show_progress whether to show progress in fread()

Value

A data.table of selected data.
Examples

```r
## Not run:
# read data using areas
aaa <- read_acs5year(
  year = 2015,
  states = c("UT", "RI"),
  table_contents = c("white = B02001_002",
                     "black = B02001_003",
                     "asian = B02001_005" ),
  areas = c("Lincoln town, RI",
            "Salt Lake City city, UT",
            "Salt Lake City metro",
            "Kent county, RI",
            "COUNTY = UT001",
            "PLACE = UT62360" ),
  summary_level = "block group",
  with_margin = TRUE
)

# read data using geoheaders
bbb <- read_acs5year(
  year = 2015,
  states = c("UT", "RI"),
  table_contents = c("male = B01001_002", "female = B01001_026"),
  geo_headers = "PLACE",
  summary_level = "block group"
)
## End(Not run)
```

read_decennial
Read decennial census data

Description

This function retrieves data from summary file 1 (with urban/rural update) of decennial censuses. In addition to selected geographic headers and table contents, it also returns total population and coordinates of selected geographic areas, as well as summary levels and geographic components.

Usage

```r
read_decennial(
  year,
```
read_decennial

states,
table_contents = NULL,
areas = NULL,
geo_headers = NULL,
summary_level = NULL,
geo_comp = "total",
show_progress = TRUE
)

Arguments

year year of the decennial census
states vector of state abbreviations, for example "IN" or c("MA", "RI").
table_contents selected references of contents in census tables. Users can choose a name for each reference, such as in c("abc = PCT012F139", "fff = P0030008", "rural_p = P0020005"). Try to make names meaningful. To find the references of table contents of interest, search with function search_tablecontents.
areas For metro area, in the format like "New York metro". For county, city, or town, must use the exact name as those in dict_fips in the format like "kent county, RI", "Boston city, MA", and "Lincoln town, RI". And special examples like "Salt Lake City city, UT" must keep the "city" after "City".
geo_headers vector of references of selected geographic headers to be included in the return. Search with search_geoheaders
summary_level select which summary level to keep, default to keep all. It takes strings including "state", "county", "county subdivision", "place", "tract", "block group", and "block" for the most common levels. It also take code for level. Search all codes with search_summarylevels.
geo_comp select which geographic component to keep, "*" to keep every geo-component, "total" for "00", "urban" for "01", "urbanized area" for "04", "urban cluster" for "28", "rural" for "43". For all other geographic component, use code, which can be found with search_geocomponents. Availability of geocomponent depends on summary level. State level contains all geographic component. County subdivision and higher level have "00", "01", and "43". Census tract and lower level have only "00".
show_progress show progress of file reading if TRUE. Turn off if FALSE, which is useful in RMarkdown output.

Value

A data.table whose columns include the selected geoheaders and table contents plus SUMLEV, GEOCOMP, and state.

Examples

## Not run:
# read one table and one area from one state
aaa = read_decennial(
Search Core Based Statistical Area (CBSA)

Description

Search CBSA code of Core Based Statistical Area in dataset dict_cbsa. The search also returns which CSA (Combined Statistical Area) that contains the CBSA. If the CBSA contains multiple counties, each county is returned as a row.

Usage

search_cbsa(keywords = NULL, view = TRUE)
## search_fips

### Search FIPS Codes

#### Description

Search FIPS code of a states, counties, county subdivisions, places, or consolidated cities in dataset `dict_fips`. The search also returns summary levels.

#### Usage

```r
search_fips(keywords = NULL, state = NULL, view = TRUE)
```

#### Arguments

- `keywords`: keyword to be searched in NAMES or FIPS.
- `state`: abbreviation of a state.
- `view`: display the search result with View if TRUE.
Details

Quite often, multiple rows are returned. It is necessary to hand pick the right one you are really looking for.

The function `search_fips` has changed summary level 061 to 060, and 162 to 160 in search results. The summary levels in `dict_fips` are 010, 040, 050, 061, 162, and 170. The level 061 is for Minor Civil Division (MCD)/Census County Division (CCD) (10,000+). It does not appear in those used in decennial census and ACS surveys, which instead have 060 for County Subdivision. Level 061 is part of 060 and is replaced with 060 in order to use the census data. Similarly, 162 is replaced with 160.

Value

A data.table

Examples

# Change view = TRUE (default) to View the returned data.table.

# Search fips of Lincoln in Rhode Island.
aaa <- search_fips("lincoln", "RI", view = FALSE)

# search FIPS number in all states
bbb <- search_fips("08375", view = FALSE)

## Not run:
# view all fips code
search_fips()

## End(Not run)
search_geoheaders

Arguments

survey  
year or ending year of the survey, can be a single year such as 2010 or a vector like 2014:2016.
keywords  
keyword to search in code or description, in the form like "abc def dsdfsa". Rows with all words are returned.
view  
display the search result with View if TRUE

Details

The most frequently used geographic components are:
00 : all geographic component 01 : urban 43 : rural

Value

A data.table

Examples

# Change view = TRUE (default) to View the returned data.
aaa <- search_geoheaders("decennial", 2010, "urban", view = FALSE)
bbb <- search_geoheaders("acs5", 2011:2015, "43", view = FALSE)

## Not run:
# view all geocomponents
search_geoheaders("dec")
search_geoheaders("acs5")

## End(Not run)
Arguments

**survey**
survey type, including "dec" (or "decennial"), "acs1" or "acs5".

**years**
year or ending year of the survey, can be a single year such as 2010 or a vector like 2014:2016.

**keywords**
keyword to search in code or description, in the form like "abc def dsdfsfa". Rows with all words are returned.

**view**
display the search result with View if TRUE

Value
data.table matching the search criteria

Examples

```r
# Change view = TRUE (default) to View the returned data.
# search geoheader that contains keyword "india" in decennial 2010
aaa <- search_geoheaders("decennial", 2010, "india", view = FALSE)

# search for lattitude
bbb <- search_geoheaders("dec", 2010, "latitu", view = FALSE)

## Not run:
# browse all geoheaders in ACS i year in View()
search_geoheaders("acs1")
## End(Not run)
```

search_summarylevels  
*Search Summary Levels*

Description

Search code or description of summary levels for summary_level argument in function `read_decennial`, `read_acs1year`, and `read_acs5year`.

Usage

```
search_summarylevels(survey, years = NULL, keywords = NULL, view = TRUE)
```

Arguments

**survey**
survey type, including "dec" (or "decennial"), "acs1" or "acs5".

**years**
year or ending year of the survey, can be a single year such as 2010 or a vector like 2014:2016.

**keywords**
keyword to search in code or description, in the form like "abc def dsdfsfa". Rows with all words are returned.

**view**
display the search result with View if TRUE
## Description

Search in lookup datasets of each survey to find references of `table_contents` argument in function `read_decennial`, `read_acs1year`, and `read_acs5year`.

## Usage

```r
search_tablecontents(survey, years = NULL, keywords = NULL, view = TRUE)
```

## Arguments

- **survey**: survey type, including "dec" (or "decennial"), "acs1" or "acs5".
- **years**: year or ending year of the survey, can be a single year such as 2010 or a vector like 2014:2016.
- **keywords**: keyword to search in code or description, in the form like "abc def dsdfsda". Rows with all words are returned.
- **view**: display the search result with View if TRUE

## Value

A data.table of searched results.

### Examples

```r
# Change view = TRUE (default) to View the returned data.
aaa = search_summarylevels("decennial", 2010, "block", view = FALSE)
bbl <- search_summarylevels("acs5", 2009:2010, "40", view = FALSE)

## Not run:
# view all summary levels
search_summarylevels("decennial")
search_summarylevels("acs1")

## End(Not run)
```
Examples

# Change view = TRUE (default) to View the returned data.
# search by what you want
aaa <- search_tablecontents("dec", 2000, "federal prison", view = FALSE)

## Not run:
# view all decennial census table contents
search_tablecontents("dec")

# view all ACS 5 year table contents
search_tablecontents("acs5")

## End(Not run)

---

search_tables Search Tables

Description

Search table numbers and description.

Usage

search_tables(survey, years = NULL, keywords = NULL, view = TRUE)

Arguments

survey survey type, including "dec" (or "decennial"), "acs1" or "acs5".
years year or ending year of the survey, can be a single year such as 2010 or a vector like 2014:2016.
keywords keyword to search in code or description, in the form like "abc def dsdfsfa". Rows with all words are returned.
view display the search result with View if TRUE

Value

A data.table

Examples

# Change view = TRUE (default) to View the returned data.
aaa <- search_tables("dec", 2010, "occupancy", view = FALSE)
bbb <- search_tables("acs5", 2014:2016, "detailed race", view = FALSE)

## Not run:
# view all tables
search_tables("dec")
set_path_to_census

    search_tables("acs1")

## End(Not run)

---

**set_path_to_census**  
*Set file path to directory storing downloaded census data*

**Description**

Set file path to directory storing downloaded census data

**Usage**

```r
set_path_to_census(path)
```

**Arguments**

- `path`: path to directory holding all downloaded census data, such as "E:/my_census_data" and "~/my_census_data/".

---

**states_DC**  
*Vector of the abbreviations of 50 states and DC*

**Description**

Abbrivation only

**Usage**

```r
data("states_DC")
```

**Format**

A vector of 51 element
Description

There is slightly difference in the table contents of each year.

Usage

table_content_acs1year_all_years

Format

A data.table with 27246 rows and 7 variables

- **reference**: reference of the table content, such as "B01001_002". The reference is used to extract data of table content.
- **table_content**: description of columns in a table
- **table_name**: table names
  - **acs1_2019**: restriction and availability of table content in 2019
  - **acs1_2018**: restriction and availability of table content in 2018
  - **acs1_2017**: restriction and availability of table content in 2017
  - **acs1_2016**: restriction and availability of table content in 2016
  - **acs1_2015**: restriction and availability of table content in 2015
  - **acs1_2014**: restriction and availability of table content in 2014
  - **acs1_2013**: restriction and availability of table content in 2013
  - **acs1_2012**: restriction and availability of table content in 2012
  - **acs1_2011**: restriction and availability of table content in 2011
  - **acs1_2010**: restriction and availability of table content in 2010
  - **acs1_2009**: restriction and availability of table content in 2009
  - **acs1_2008**: restriction and availability of table content in 2008
  - **acs1_2007**: restriction and availability of table content in 2007
  - **acs1_2006**: restriction and availability of table content in 2006
  - **acs1_2005**: restriction and availability of table content in 2005
- **universe**: the universe of the data

Source

Check for each year of ACS 1-year and 5-year Sequence Number/Table Number Lookup File.
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