## Query Database Like you Chat

You:

For each year, how many five to nine year olds are in Kentucky?

---

## Question:

For each year, how many five to nine year olds are in Kentucky?

---

## SQL Prompt:

Please return a syntactically correct SQLite query answering the following question:

For each year, how many five to nine year olds are in Kentucky?

Using the table information below:

| Table Name | Column Name | Column T |
|---|---|---|
| acs | Unnamed: 0 | INTEGER |
| acs | Geography | TEXT |
| acs | Geographic Area Name | TEXT |
| acs | Total population | INTEGER |
| acs | Male | INTEGER |
| acs | Female | INTEGER |
| acs | Under 5 years | INTEGER |
| acs | 5 to 9 years | INTEGER |
| acs | 10 to 14 years | INTEGER |
| acs | 15 to 19 years | INTEGER |
| acs | 20 to 24 years | INTEGER |
| acs | 25 to 34 years | INTEGER |
| acs | 35 to 44 years | INTEGER |
| acs | 45 to 54 years | INTEGER |
| acs | 55 to 59 years | INTEGER |
| acs | 60 to 64 years | INTEGER |
| acs | 65 to 74 years | INTEGER |
| acs | 75 to 84 years | INTEGER |
| acs | 85 years and over | INTEGER |
| acs | Median age (years) | REAL |
| acs | 18 years and over | INTEGER |
| acs | 21 years and over | INTEGER |
| acs | 65 years and over | INTEGER |
| acs | One race | INTEGER |
| acs | Two or more races | INTEGER |
| acs | White | INTEGER |
| acs | Black or African American | INTEGER |
| acs | American Indian and Alaska Native | INTEGER |
| acs | Asian | INTEGER |
| acs | Native Hawaiian and Other Pacific Islander | INTEGER |
| acs | Some other race | INTEGER |
| acs | Hispanic or Latino (of any race) | INTEGER |
| acs | Not Hispanic or Latino | INTEGER |
| acs | Total housing units_x | INTEGER |
| acs | YEAR | INTEGER |
| acs | Total households | REAL |
| acs | Households with one or more people under 18 years | REAL |
| acs | Households with one or more people 65 years and over | REAL |
| acs | Average household size | REAL |
| acs | Males 15 years and over | REAL |
| acs | Never married, Males 15 years and over | REAL |
| acs | Now married, except separated, Males 15 years and over | REAL |
| acs | Separated, Males 15 years and over | REAL |
| acs | Widowed, Males 15 years and over | REAL |
| acs | Divorced, Males 15 years and over | REAL |
| acs | Females 15 years and over | REAL |
| acs | Never married, Females 15 years and over | REAL |
| acs | Now married, except separated, Females 15 years and over | REAL |
| acs | Separated, Females 15 years and over | REAL |
| acs | Widowed, Females 15 years and over | REAL |
| acs | Divorced, Females 15 years and over | REAL |
| acs | Population 3 years and over enrolled in school | REAL |
| acs | Population 25 years and over | REAL |
| acs | Less than 9th grade | REAL |
| acs | 9th to 12th grade, no diploma | REAL |
| acs | High school graduate (includes equivalency) | REAL |
| acs | Some college, no degree | REAL |
| acs | Associate's degree | REAL |
| acs | Bachelor's degree | REAL |
| acs | Graduate or professional degree | REAL |

```
acs         Native                                                REAL
acs         Foreign born                                          REAL
acs         Language other than English                           REAL
acs         Population 16 years and over                          INTEGER
acs         In labor force                                        INTEGER
acs         Civilian labor force                                  INTEGER
acs         Employed                                              INTEGER
acs         Unemployed                                            INTEGER
acs         Armed Forces                                          INTEGER
acs         Not in labor force                                    INTEGER
acs         Civilian employed population 16 years and over        INTEGER
acs         Management, business, science, and arts occupations   INTEGER
acs         Service occupations                                   INTEGER
acs         Sales and office occupations                          INTEGER
acs         Natural resources, construction, and maintenance occupations  INTEGER
acs         Production, transportation, and material moving occupations    INTEGER
acs         Median family income (dollars)                        INTEGER
acs         Mean family income (dollars)                          INTEGER
acs         Per capita income (dollars)                           INTEGER
acs         Civilian noninstitutionalized population              INTEGER
acs         With health insurance coverage                        INTEGER
acs         With private health insurance                         INTEGER
acs         With public coverage                                  INTEGER
acs         No health insurance coverage                          INTEGER
acs         Total housing units_y                                 INTEGER
acs         Occupied housing units                                INTEGER
acs         Vacant housing units                                  INTEGER
acs         Homeowner vacancy rate                                REAL
acs         Rental vacancy rate                                   REAL
acs         Median rooms                                          REAL
acs         Median (dollars), Value                               INTEGER
acs         Owner-occupied units                                  INTEGER
acs         Housing units with a mortgage                         INTEGER
acs         Housing units without a mortgage                      INTEGER
acs         Median (dollars), Rent                                INTEGER
acs         No rent paid                                          INTEGER
```

Always quote the table columns used in the query.

If you are not able to exactly answer the question, please return the following mess

I am not able to answer the question exactly.

---

## SQL:

```
SELECT YEAR, SUM("5 to 9 years") AS "Number of 5 to 9 year olds"
FROM acs
WHERE Geography = '0400000US21'
GROUP BY YEAR
```

---

## Result:

```
YEAR    Number of 5 to 9 year olds
2012                  280790
2013                  282464
2014                  282577
2015                  281090
2016                  282564
2017                  280088
2018                  281151
2019                  275466
2020                  275013
2021                  279548
```

---

## Readable Format Prompt:

Please put the following result in readable format:

```
YEAR    Number of 5 to 9 year olds
2012                  280790
2013                  282464
2014                  282577
2015                  281090
2016                  282564
2017                  280088
2018                  281151
```

```
   2019                    275466
   2020                    275013
   2021                    279548
```

It was generated by this SQL query:

```
SELECT YEAR, SUM("5 to 9 years") AS "Number of 5 to 9 year olds"
FROM acs
WHERE Geography = '0400000US21'
GROUP BY YEAR
```

---

### Readable Format:

```
Year | Number of 5 to 9 year olds
2012 | 280,790
2013 | 282,464
2014 | 282,577
2015 | 281,090
2016 | 282,564
2017 | 280,088
2018 | 281,151
2019 | 275,466
2020 | 275,013
2021 | 279,548
```

---

### Plot Prompt:

Please return Python code to plot Pandas DataFrame self.df, containing this:

```
   YEAR    Number of 5 to 9 year olds
   2012                    280790
   2013                    282464
   2014                    282577
   2015                    281090
   2016                    282564
   2017                    280088
   2018                    281151
   2019                    275466
   2020                    275013
   2021                    279548
```

The code should not create a new data frame but use the existing Pandas DataFrame, s
Also, the code should not show the plot, but save it as a file named "_plot.png".

The data answers this question:

For each year, how many five to nine year olds are in Kentucky?

Which was generated by this SQL query:

```
SELECT YEAR, SUM("5 to 9 years") AS "Number of 5 to 9 year olds"
FROM acs
WHERE Geography = '0400000US21'
GROUP BY YEAR
```

---

### Python Code for Plot:

```python
import pandas as pd
import matplotlib.pyplot as plt

# Create a bar plot using the existing Pandas DataFrame, self.df
plt.bar(self.df['YEAR'], self.df['Number of 5 to 9 year olds'])

# Add labels and title to the plot
plt.xlabel('Year')
plt.ylabel('Number of 5 to 9 year olds')
plt.title('Number of 5 to 9 year olds in Kentucky')

# Save the plot as a file named "_plot.png"
plt.savefig('_plot.png')
```
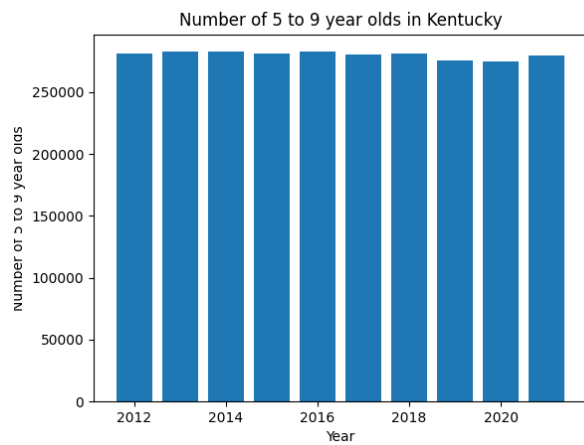
---

## More than one data point:

True

---

## Plot Code Error:

False

---

## Plot:



For each year, how many five to nine year olds are in Kentucky?

---