

Python Project 5: Population Estimate

INSTRUCTIONS:

- Create a Python program. Save As: **PopEstimate.py**
- Include the necessary Program Header and use descriptive comments.

1. This programming project will estimate the population of the United States based on some information provided by the US census. (**Newer data can be found at <https://www.census.gov/popclock/>**)

For this project, use the following data:

- A number that represents the **current population**. Use the following number for the starting point for this project at the value: **307357870**
- 3 RATES:
 - every 7 seconds, a **birth**
 - every 13 seconds, a **death**
 - every 35 seconds, a **new immigrant**

Predicting into the future using only these numbers is not very accurate since the rates are likely to change, but it does give you a general idea for short predictions (only a few years into the future). Longer predictions (100's of years) are likely to be more inaccurate.

2. Your program will prompt the user for the number of **years** into the future we are predicting. Your program then prints out the predicted population size as an **integer**. You must use the above-indicated values: the starting point and the rates. The input value must represent years.

Use the following information about Time Conversion:

- 365 days in a year
- 24 hours in a day
- 60 minutes in an hour
- 60 seconds in a minute

Python Project 5: Population Estimate

3. Calculate and Output. Use the sample data in the graphic below to test your program and output as described.

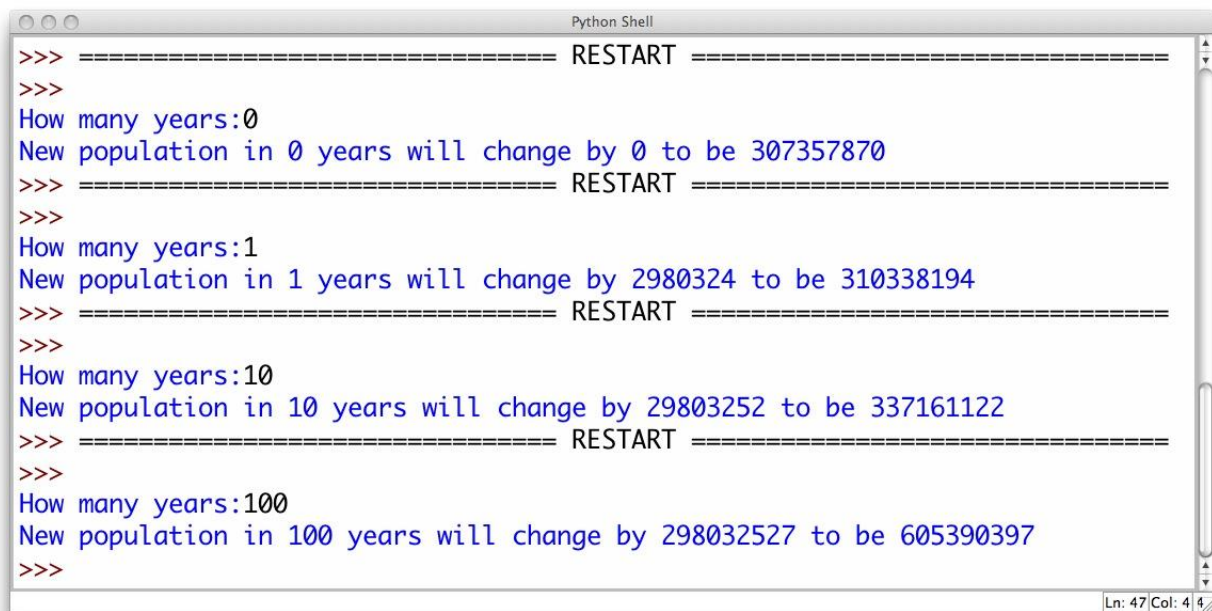
- How many years
- New population

4. Handle Errors

- If trying to divide by zero?
- If a letter is entered instead of a number for years at the prompt?

5. **TIP:** Start by calculating just for one year. Once that works then write a block of code to Repeat #2 until the user indicates an action to STOP.

6. Run the program and handle any errors.



```
>>> ===== RESTART =====
>>>
How many years:0
New population in 0 years will change by 0 to be 307357870
>>> ===== RESTART =====
>>>
How many years:1
New population in 1 years will change by 2980324 to be 310338194
>>> ===== RESTART =====
>>>
How many years:10
New population in 10 years will change by 29803252 to be 337161122
>>> ===== RESTART =====
>>>
How many years:100
New population in 100 years will change by 298032527 to be 605390397
>>>
```

Ln: 47 Col: 44