## Write algorithm for Lab1 here.

## Remember to follow the rules of what makes a good algorithm from Notes #2.

Algorithm:

1. Display Welcome Message that states purpose:
   * Output "Welcome! This program predicts the future population of a country based on factors you input."
2. Set seconds\_in\_a\_year to the total number of seconds in a year:

* seconds\_in\_a\_year = 365 \* 24 \* 60 \* 60

1. Prompt user to enter the birth rate (seconds between each birth).

* Store the input as a float in birth\_rate

1. Prompt user to enter the death rate (seconds between each death).

* Store the input as a float in death\_rate.

1. Prompt user to enter the immigration rate (seconds between each new immigrant).

* Store the input as a float in immigrant\_rate

1. Prompt user to enter the current population.

* Store the input as an integer in current\_population.

1. Prompt user to enter the number of years into the future.

* Store the input as an integer in years

1. Calculate births per year as: births per year = seconds\_in\_a\_year / birth\_rate
2. Calculate deaths per year as: deaths per year = seconds\_in\_a\_year / death\_rate
3. Calculate immigrants per year as: immigrants per\_year = seconds\_in\_a\_year / immigrant\_rate
4. Calculate population change per year as: population\_change\_per\_year = births\_per\_year + immigrants\_per\_year - deaths\_per\_year
5. Calculate future\_population as: future\_population = current\_population + (population\_change\_per\_year \* years)
6. Convert future\_population to an integer.
7. If future\_population > current\_population:
   * set population\_change to "increased".

Else if future\_population < current\_population,

* set population\_change to "decreased".

Otherwise,

* set population\_change to "stayed the same".

1. Output result: "The population in [years] years will be [future\_population]."
2. Output result: "The population [population\_change]."