CS 112 Assignment 7b

Submit your finished code to the Dropbox. You will need to pass off the assignments with the TA or tutor during their office hours (their information is in the CS 112 Course Information section of the Table of Contents), or the instructor in class. Follow the formatting guide, which is also found in the CS 112 Course Information section.

Read the instructions carefully. Make sure your output matches the example run.

Objectives:

In this assignment, you will learn how to do the following:

- Import a module into Python (datetime)
- Use functions and objects from datetime to determine the current year
- Call a function from another function (not main())

Program: functions check_eligibility() and calculate_age()

Write a program that asks the user to enter a name and a year, which represents the name of a potential student and the year they were born. Use input validation to ensure the user entered a valid whole number. You may use either .isdigit() or try-except to perform input validation on the year.

Have your main() function call a function that you write called check_eligibility(), passing the name and year as arguments. Your check_eligibility() function will call another function you write called calculate_age(), passing the year as an argument, to get the age of the person. The check_eligibility() function will then use the age to determine which type of school, if any, the student is eligible for and print the result as shown in the example. Use the table found in the technical design below to determine the output.

The calculate_age() function will use the datetime.datetime.now() function from the datetime module to calculate the age of the person based on the year that was passed in from the calling function. Return the age to the calling function.

Key program requirements:

- Do input validation on the birth year and the 'Y'/'N' play again question
- Use the datetime.datetime.now() function from the datetime module
- Write a function called check_eligibility() which is called from main()
- Write a function called calculate_age() which is called from check_eligibility()
- Print your results from the check_eligibility() function
- Use of global variables is NOT allowed
- Use good naming conventions for all variables and parameters.

Technical Design:

Main program body (outside of any function)

- Import the datetime module in the main body of your program

The main() function will:

- Ask the user for a potential student's name and the year they were born.
- Call the check_eligibility() function passing the name and year as arguments
- Repeat the program until the user wants to quit

The check_eligibility() function will:

- Accept a string and an integer
- Call the calculate_age() function passing the year as an argument
- Use the age returned from calculate_age() to determine which type of school, if any, the student is eligible for and print the result as shown in the example

The calculate_age() function will:

- Accept an integer (year) as an argument
- Use the datetime.datetime.now() function to get the current year
    - Create a variable 'now' that gets the current time from datetime
        - [CODE: now = datetime.datetime.now()]
    - Create a variable 'thisYear' to store the year from the 'now' variable you just created
        - [CODE: thisYear = now.year]
    - Calculate the age of the person using the year they were born and thisYear.
    - Return the age to the calling function()

Eligibility table

Age	Eligibility
0-4	Not eligible to attend school
5-11	Elementary School
12-14	Jr. High School
15-17	High School
18 +	College

Ponder – Discuss the following with your partner. Failure to do this activity and discuss these questions before you attempt to pass off your program will result in a failed pass off.

- On a separate piece of paper, draw boxes that represent the various memory locations that will be used by your program. MAKE SURE that you indicate which function the variables belong to.
- With your partner, use your finger or a pen to point at each line of code as you trace through the program from beginning to end. Yes, really use your finger or a pen.

Example Run

```
This program will ask the user to enter a name and a birth year for a potential student.
The program will then determine what type of school, if any, the potential student is
eligible to attend.

Please enter the name of a potential student: Martin
Please enter the potential student's birth year: Long ago
Invalid response.  Please enter a whole number for the birth year.

Please enter the potential student's birth year: 1955
Martin is 62 years old.  Martin may attend college.

Would you like to play again? (Y/N): y


Please enter the name of a potential student: Sally
Please enter the potential student's birth year: 2001
Sally is 16 years old.  Sally may attend High school.

Would you like to play again? (Y/N): y


Please enter the name of a potential student: Billy
Please enter the potential student's birth year: 2014
Billy is 3 years old.  Billy is too young to attend school.

Would you like to play again? (Y/N): n
>>>
```