



Assignment Three

Comp1310

Assignment # 3 Due Date: Saturday (11/6/2022) 11:59 pm only on ITC-Meta Course

Question One:

Write a C program to calculate some future investment rate for a user. Your program should start by asking the user to input the values of the following required parameters:

1. Annual rate as a double.
2. Investment Amount as a double.
3. Number of Years as integer.

The program should display a menu to the user that gives them the option of calculating different types of interest rates. Each of the options is expected to call the relevant function to do the calculations:

1. Annual Future Interest rate, computed according to the formula:

$$\text{Annual Future Investment Rate} = \text{investment Amount} * (1 + \text{Monthly Interest Rate})^{(\text{Number Of Years} * 12)}$$

2. Monthly future Interest rate, computed according to the formula:

$$\text{Monthly Future Investment Rate} = \text{Investment Amount} * (1 + \text{Daily Interest Rate})^{(\text{Number Of Months} * 12)}$$

3. Exit the program.

If the user did not choose to exit the program, after the value is calculated a second menu gives the user the option of how to display the result:

1. Display the result as it was computed.
2. Display the result approximated to a specific number of decimal points read from the user, up to 5 decimal points. The rounding must be done in a function that returns the rounded value (i.e. do not use %.3f for example in your output).

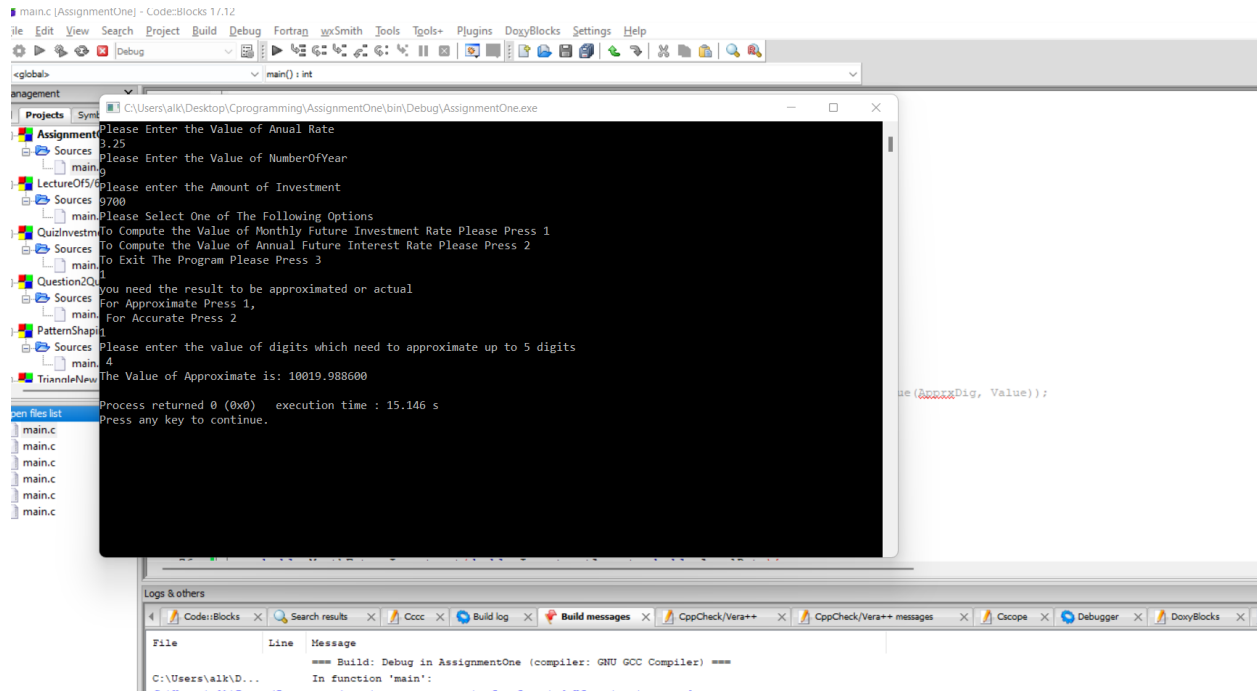
A specific function to do approximation according to the number specified by the user based on the following formula:

$$\text{Approximated value} = \text{floor}(\text{actual value} * 10^{\text{number of decimal points}} + 0.5) / 10^{\text{number of decimal points}}$$

You will need additional functions to calculate the following:

- **Monthly interest rate = annual interest rate / 12**
- **Daily interest rate = monthly interest rate / 30**

Simple Run for the Program as Follow:



Question Two

Write C Program that receive number of students in a Lecture, and decide how much form of exam should be build to avoid cheating, the number of forms is based on the following formula if the Number of Students above 65:
$$\text{No. Form} = \frac{\text{Number of Students}}{\text{Size of Lecture}} * 1.6$$

If number of students between 20-30 The number of Forms is 2

If Number of students between 30-40 The number of Forms is 3

If Number of Students between 45-65 The number of Forms 4

Size of Lecture = Length of Lecture Room * width of Lecture Room.

A specific Function is required to Compute the Size of Lecture Room (which will used the Function of Size of Lecture).

A Specific Function is required to Find the Number of Forms

The Program will display The Number of Lecture based on the given Parameters (Number of Students, Width and Hight of Lecture Room).