**COP 2334 Programming Project 1**

**See Assignment for due date**

**Project Outcomes - Develop a C++ program that:**

* Displays messages to the monitor and reads data from the keyboard using cout and cin operators.
* Creates and uses different types of variables
* Performs assignment operations
* Perform basic arithmetic functions
* Uses library math functions.
* Uses a simple if/else statement

**Program Description:**

Write a C++ program that calculates the area of various geometric shapes.

1. Create the following constants to use in the program

PI = 3.14159;

CIRCLE\_CHOICE = 1;

RECTANGLE\_CHOICE = 2;

TRIANGLE\_CHOICE = 3;

QUIT\_CHOICE = 4;

1. Program Menu
   1. The program displays the follow menu, store the choice in an integer variable:

*Geometry Calculator*

*1. Calculate the area of a Circle*

*2. Calculate the area of a Rectangle*

*3. Calculate the area of a Triangle*

*4. Quit*

*Enter your choice (1-4):*

1. Menu functionality
   1. If 1 is selected
      1. Prompt the user for the radius of the circle and store the radius in a double variable called radius.
      2. Calculate the area of the circle using the formula: areaCircle = PI \* r2 where r is the radius of the circle
      3. Store the results of the calculation in a double called areaCircle
      4. Display the area of the Circle such as: *The area of the circle is 98.5203*
   2. If 2 is selected
      1. Prompt the user for the length and width of the rectangle and store those values in integer variables called length and width
      2. Calculate the area of the rectangle using the formula: areaRectangle = length \* width;
      3. Store the results of the calculation in a double called areaRectangle
      4. Display the area of the Circle such as: *The area of the rectange is 36*
   3. If 3 is selected
      1. Prompt the user for the length of the triangle’s base and the height of the triangle and store those values in integer variables called base and height
      2. Calculate the area of the triangle e using the formula: areaTriangle = base \* height \* .5;
      3. Store the results of the calculation in a double called areaTriangle
      4. Display the area of the Circle such as: *The area of the triangle is 36.3*
   4. If 4 is selected
      1. Display a message “No select made”
      2. End the program

***Remember that the user will press <ENTER> after inputting their values, which will drop the cursor to the next line!***

**Submission:**

1. Compile and run your program one last time before submitting it.
2. Follow the Required Programming Submission Instruction on elearning
3. Review the rubric associated with the project to ensure all functionality is completed.

**Important Notes:**

1. Projects will be graded on whether they correctly solve the problem and whether they adhere to good programming practices.
2. Projects must be submitted by the time specified on the due date. Projects submitted after that time will get a grade of zero.
3. Please review UWF's academic conduct policy that was described in the syllabus. Note that viewing another student’s solution, whether in whole or in part, is considered academic dishonesty. Also note that submitting code obtained through the Internet or other sources, whether in whole or in part, is considered academic dishonesty. All programs submitted will be reviewed for evidence of academic dishonesty, and all violations will be handled accordingly.

Sample run

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Geometry Calculator

1. Calculate the area of a Circle

2. Calculate the area of a Rectangle

3. Calculate the area of a Triangle

4. Quit

Enter your choice (1-4): 1

Enter the circle's radius: 4.5

The area is 63.6172

Geometry Calculator

1. Calculate the area of a Circle

2. Calculate the area of a Rectangle

3. Calculate the area of a Triangle

4. Quit

Enter your choice (1-4): 2

Enter the rectangle's length: 12

Enter the rectangle's width: 4

The area is 48

Geometry Calculator

1. Calculate the area of a Circle

2. Calculate the area of a Rectangle

3. Calculate the area of a Triangle

4. Quit

Enter your choice (1-4): 3

Enter the length of the base: 13

Enter the triangle's height: 6

The area is 39

Geometry Calculator

1. Calculate the area of a Circle

2. Calculate the area of a Rectangle

3. Calculate the area of a Triangle

4. Quit

Enter your choice (1-4): 4

Program ending.