

C++ Programming – ENG TECH 1CP3

Introduction to Computers and Programming

Decision Structures

Lab L1

For each of the following problems, be sure to output the results to the console.

1. Create a program that assigns values for variables that hold data for the first name, age, hourly wage, and gender (M or F), of a person, and outputs the data contained in those variables in a format such as the following.

First Name: Jim
Age: 23
Hourly Wage: \$11.75
Gender: M

2. Create a program that prompts the user for a value representing an angle (θ) in degrees, converts it to radians, and
 - (a) outputs the length (s) of an arc of a circle with a constant radius (r) of 5 cm. Use Formula:
$$s = r\theta$$
 where θ is in radians.
 - (b) outputs the cosine, sine and tangent of the radian angle.

Use variables to store degrees, radians and length of an arc. Define radius as a constant.

3. Create a program that performs the following tasks:
 - a. Prompt the user for an integer number.
 - b. Display the following menu:
 1. Number divisible by 3?
 2. Number between 10 and 100?
 - c. Prompt the user to enter a choice. If the user enters the value 1, determine whether the value 3 is a divisor of the integer number and output an appropriate message. If the user enters the value 2, determine whether the integer number is less than 10, between 10 and 100, or greater than 100 and output an appropriate message. If the user enters a value other than 1 or 2, output a message indicating that the value is not a menu item. It is not expected to loop back to show the menu again. This is a run-once application.

Note: - Indicate the units for all I/O values required from- or provided to- the user.

Create a Word .doc file that contains the source code and a screen captures of the console window as the program is running, for all C++ programs. Save this file as *YourName_Lab_1.doc* and upload and submit to the appropriate AVENUE lab assignment drop-box.