Hawassa University – IoT

Faculty of Informatics

Department of Information System

Fundamentals of Programming in C++

Lab Exercise 4

1. Write a c++ function that displays "Hello World!" Message?

2. Write a C++ function that accepts two numbers and finds sum, difference, product and quotient of the numbers. Write a four functions for those operations?

3. Write a function named abs_val that returns the absolute value of an int passed to it by value. You cannot use the abs() function library.

4. Write a C++ program to swap two numbers using:

   a. Call -by-value

   b. Call -by-reference

5. Write a simple menu-driven program using a do-while loop in C++. This program should allow the user to perform four different operations: addition, subtraction, multiplication, and division. The menu should be displayed is:

   Enter your choice (1-5):

   1. Addition

   2. Subtraction

   3. Multiplication

   4. Division

   5. Exit

   Your program should use separate functions to do all these operations.

6. Write a C++ program to find factorial of a given number. (Using recursive and non-recursive functions)

7. Write a C++ program to illustrate use of function overloading. (Write a C++ program to find areas of different shapes (square, rectangle and triangle)).

   Description:

During execution, the program should print the following messages one by one on the console as:

Menu

1. Area of the square

2. Area of the Rectangle

3. Area of the Triangle

Enter the value from the menu

Menu

1. Area of the square

2. Area of the Rectangle

3. Area of the Triangle

Enter the value from the menu: 3

Enter length of side if Triangle: 34

8. Write a function named "swap_floats" that takes two floating point arguments and interchanges the values that are stored in those arguments. The function should return no value. To take an example, if the following code fragment is executed

```
float x = 5.8, y = 0.9;
swap_floats (x, y);
cout << x << " " << y << endl;
then the output will be
0.9          5.8
```