**Introduction – Day 2 \*\* Save all your programs \*\***

1. Write a function called **day\_week(n)** which given an integer*, n*, prints the corresponding day of the week (e.g. “Monday”) or a suitable error message for an invalid value. Assume the user entered an integer. Test your function in the main program with the following values for *n*: 1, 7, 3, 10, 0, -1.

That is, in the main part of the program, make these function calls:

**Expected Output:**

Monday

Sunday

Wednesday

Error - Enter an integer between 1 and 7!

Error - Enter an integer between 1 and 7!

Error - Enter an integer between 1 and 7!

**day\_week(1)**

**day\_week(7)**

**day\_week(3)**

**day\_week(10)**

**day\_week(0)**

**day\_week(-1)**

1. Write a function called  **sum\_first(n)** which calculates the sum of the first n positive integers and prints the result. Assume the user entered a positive integer. Test your function in the main program with the following values   
   for *n*: 0, 1, 5, 10, 50.

**Expected Output:**

The sum is: 0

The sum is: 1

The sum is: 15

The sum is: 55

The sum is: 1275

1. Write a function called  **sum\_first\_odd(n)**, which calculates the sum of the first n odd integers and prints the result. Test your function in the main program with the following values for *n*: 0, 1, 3, 10, 30.

**Expected Output:**

The sum is: 0

The sum is: 1

The sum is: 9

The sum is: 100

The sum is: 900

4. A common and useful function provides the ability to swap two values.  This concept is used frequently when sorting values.  Write a function called s**wap(a,b)** that will take two real values as parameters, and the function will then exchange the values and print them out.  Test your program with these values: s**wap**(3, 5) and s**wap**(**"**Boo**"**, **"**Hoo**"**)

5. Write a function called  **area(a, b, c)** that will calculate the area of a triangle given the side lengths a, b, and c as parameters and prints the result. You need to do trigonometry to determine the height!  Test your program with these values: area(3, 4, 5) – the area should be 6.

6. Write a function called  **angle(a,b,c)** that will determine the measure of the angle opposite side a in a triangle given side lengths a, b, and c as parameters and prints the result.  Test your program with these values:

**Expected Output:**

Angle is: 37 degrees

Angle is: 53 degrees

Angle is: 90 degrees

**angle**(3, 4, 5)

**angle**(4, 3, 5)

**angle**(5, 4, 3)