UNIT -1 – Lab Questions

1. Write a program to display the formatted output as given below.

   Formatting the output :

   The value of pi : 3.1416

   The value of pi 4 decimal place of total width 8 : | 3.1416|

   The value of pi 4 decimal place of total width 10 : | 3.1416|

   The value of pi 4 decimal place of total width 8 : |--3.1416|

   The value of pi 4 decimal place of total width 10 : |----3.1416|

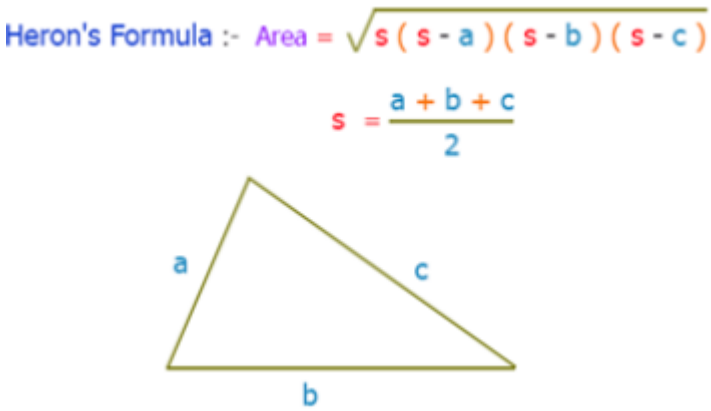
   The value of pi in scientific format is : 3.1416e+00

   Status in number : 0

   Status in alphabet : false

2. Write a C++ program to find the area of any triangle using Heron's formula.

   Visual Presentation:



   Find the area of any triangle using Heron's Formula :

   Input the length of 1st side of the triangle : 5

   Input the length of 2nd side of the triangle : 5

   Input the length of 3rd side of the triangle : 5

   The area of the triangle is : 10.8253

3. Write a C++ program to input a single-digit number and print it in a rectangular form of 4 columns and 6 rows.

   Visual Presentation:

4. Write a C++ program that takes a number as input and prints its multiplication table up to 10.

   Sample Output:

   Print the multiplication table of a number upto 10:

   Input a number: 5

   5 x 1 = 5

   5 x 2 = 10

   5 x 3 = 15

   5 x 4 = 20

   5 x 5 = 25

   5 x 6 = 30

   5 x 7 = 35

   5 x 8 = 40

   5 x 9 = 45

   5 x 10 = 50

5. Write a C++ program to compute the distance between two points on the surface of the earth.

   Sample Output:

   Print the the distance between two points on the surface of earth:

   Input the latitude of coordinate 1: 25

   Input the longitude of coordinate 1: 35

   Input the latitude of coordinate 2: 35.5

   Input the longitude of coordinate 2: 25.5

   The distance between those points is: 1480.08

6. Write a C++ program to compute the sum of the two given integers and count the number of digits in the sum value.

   Sample input : 15 20

   Sample Output:

   2

7. Input Format

   Input consists of the following space-separated values:

   int, long, char, float, and double, respectively.

   Output Format

   Print each element on a new line in the same order it was received as input.

   Note that the floating point value should be correct up to 3 decimal places

   and the double to 9 decimal places.

   Sample Input

   3 12345678912345 a 334.23 14049.30493

   Sample Output

   3 12345678912345 a 334.230 14049.304930000

8. You can convert temperature from degrees Celsius to degrees Fahrenheit by multiplying by 9/5 and adding 32. Write a program that allows the user to enter a floating-point number representing degrees Celsius, and then displays the corresponding degrees Fahrenheit.
9. If you have two fractions, a/b and c/d, their sum can be obtained from the formula

   Write a program that encourages the user to enter two fractions, and then displays their sum in fractional form. (You don't need to reduce it to lowest terms.) The interaction with the user might look like this:

   Enter first fraction: 1/2

   Enter second fraction: 2/5

   Sum = 9/10

   You can take advantage of the fact that the extraction operator (>>) can be chained to read in more than one quantity at once:

10. Formulate statements to perform the following:

    a. Left-justify the number 0.123456 in an output field with a width of 15.

    b. Output the number 23.987 as a fixed point number rounded to two decimal places, right-justifying the output in a field with a width of 12.

    c. Output the number –123.456 as an exponential and with four decimal spaces. How useful is a field width of 10?