Sohag University
Faculty Of Engineering
Electrical Engineering Department

Programming Languages
1st Year
2022

Sheet 3

Loops and Conditions

Problem1

Write a C++ program that ask the user to enter the radius of a circle and display the area then display the message "Good one to fit!" if the area of the circle is greater than 30 and less than 100, otherwise display the message "Not good to fit!".

Sample output:

```
Enter the radius: 4
circle area = 50.24
Good one to fit!
```

Problem2

Write a C++ program let the user enter a character then display its ascii code and show the user if the entered character is a capital alphabetical letter, small alphabetical letter, or not an alphabetical letter.

Sample output:

```
Enter a single Character: F
The ASCII code of F is : 70
F is a Capital alphabetical letter
Enter a single Character: %
The ASCII code of % is : 37
% is not an alphabetical letter
```

Problem3

Write a C++ program using nested if that take 3 float numbers and find the largest one.

Sample output:

```
Enter the first number: 23
Enter the second number: 90
Enter the third number: 2
Largest number: 90
```

Problem4

Write a C++ program let the user enter an integer number n, then print the numbers from 0 to n.

Sample output:

```
Enter a number: 3
0
1
2
3
```

Problem5

Write a C++ program to compute the summation and average of number of x marks determined by the user.

Sample output:

```
Enter number of Marks: 3
Enter mark #1: 10
Enter mark #2: 2
Enter mark #3: 3
the summation of Marks = 15
the average of Marks = 5
```

Problem6

Write a C++ program to raise any number X to power N. (Note: without using pow() function)

Sample output:

```
Enter X: 2
Enter N: 4
2^4 = 16
```

Problem7

Write a C++ program that takes a positive integer, show if it is a prime integer or not.(Notice: A positive integer n is said to be "a prime number" if and only if n is greater than 1 and is divisible only by 1 and n.)

Sample output:

```
Enter a number: 0
Please enter number greater than 1.
Enter a number: 12
12 is not a prime number.
Enter a number: 13
13 is a prime number.
```

Problem8

Write a C++ program using switch to let the user perform the basic mathematical operation with two numbers.

Sample output:

```
Enter the first number: 2
Enter the second number: 4
choose the operator (+, -, *, /): *
2 * 4 = 8
```

Problem9

Write a C++ program to print half star pyramid pattern whit number of rows determined by the user.

Sample output:

```
Enter number of rows: 5
*
* *
* * *
* * * *
* * * * *
```