Sheet (1)

Create the following programs:

1. C++ Program to Find Largest Number Among Three Numbers.
    a. In this program, the user is asked to enter three numbers.
    b. Then this program finds out the largest number among three numbers entered by user and displays it with a proper message.

Example

```
Enter three numbers: 2
8
-4
Largest number: 8
```

2. C++ Program to Print Number Entered by User.
    a. This program asks the user to enter a number.
    b. When the user enters an integer, it is stored in variable number.
    c. Then it is displayed on the screen.

Example

```
Enter an integer: 28
You entered 28
```

3. C++ Program to Swap Numbers (Using Temporary Variable).

a. To perform swapping in the above example, three variables are used.
b. The content of the first variable is copied into the temp variable. Then, the content of the second variable is copied to the first variable.
c. Finally, the content of the temp variable is copied back to the second variable which completes the swapping process.

Example

```
Before swapping.
a = 5, b = 10

After swapping.
a = 10, b = 5
```

4. C++ Program to Check Whether Number is Even or Odd.
    a. Integers that are perfectly divisible by 2 are called even numbers.
    b. And those integers that are not perfectly divisible by 2 are not known as odd numbers.
    c. To check whether an integer is even or odd, the remainder is calculated when it is divided by 2 using modulus operator %. If the remainder is zero, that integer is even if not that integer is odd.

Example

```
Enter an integer: 23
23 is odd.
```

5. C++ Program to Find Quotient and Remainder.

a. In this program, the user is asked to enter two integers (divisor and dividend) and the quotient, and the remainder of their division is computed.
b. To compute quotient and remainder, both divisor and dividend should be integers.
c. The division operator / computes the quotient (either between float or integer variables).
d. The modulus operator % computes the remainder when one integer is divided by another (modulus operator cannot be used for floating-type variables).

Example

```
Enter dividend: 13
Enter divisor: 4
Quotient = 3
Remainder = 1
```

6. C++ Program to Calculate Sum of Natural Numbers.
   a. Positive integers 1, 2, 3, 4... are known as natural numbers.
   b. This program takes a positive integer from user(suppose user entered n) then, this program displays the value of 1+2+3+....+n.
   c. This program assumes that user always enters positive number.
   d. If user enters negative number, Sum = 0 is displayed and program is terminated.

Example

```
Enter a positive integer: 50
Sum = 1275
```

7. C++ Program to Generate Multiplication Table.
    a. Display Multiplication Table up to 10

Example

```
Enter a positive integer: 5
5 * 1 = 5
5 * 2 = 10
5 * 3 = 15
5 * 4 = 20
5 * 5 = 25
5 * 6 = 30
5 * 7 = 35
5 * 8 = 40
5 * 9 = 45
5 * 10 = 50
```

8. C++ Program to Find GCD.
    a. The largest integer which can perfectly divide two integers is known as GCD or HCF of those two numbers.
    b. For example, the GCD of 4 and 10 is 2 since it is the largest integer that can divide both 4 and 10.

Example

```
Enter two numbers: 16
76
HCF = 4
```

9. C++ Program to Check Whether a Number is Prime or Not.
    a. A positive integer which is only divisible by 1 and itself is known as prime number.

b. For example: 13 is a prime number because it is only divisible by 1 and 13 but, 15 is not prime number because it is divisible by 1, 3, 5 and 15.

Note: 0 and 1 are not prime numbers.

Example

```
Enter a positive integer: 29
29 is a prime number.
```

10. C++ Programs To Create Pyramid and Pattern
    a. Programs to Print Triangle Using *

Example: Program to Print a Full Pyramid Using *

```
    *
   * * *
  * * * * *
 * * * * * * *
* * * * * * * * *
```