Experiment No. 02

Aim: Study of if-else structure in "C"

Problem Statement: Write a program to accept three numbers and display largest of three using a nested if else statement

Problem Definition:

Input: Accept three numbers

Process: Find the maximum of three numbers

Output: Display maximum number

Theory:

The if statement

The if statement gives the user the choice of executing a statement (possibly compound) if the expression is evaluated to true or skipping it is the expression is evaluated to false.

Format 1: The syntax of the if statement:

if (test expression/condition)

{

Statement-block; //code to be executed

}

Statement-x;

The *statement* is executed if and only if the *expression* is true.

Example

```
if (num > 10)
{
        result = 2 * num;
}
```

The content of *num* is multiply by 2 if and only if the value of *num* is greater than 10.

Format 2: C language also lets one choose between two statements by using the if-else if structure.

Syntax :

```
   if(test expression/condition)
{
True statements-block;
}              //code to be executed if condition is true}
```

```
    else
{
False statements-block;                //code to be executed if condition is false
}
 statement- n;
```

In this case, if the *expression* is true, then the *statement 1* is executed. Otherwise, *statement 2* is executed.

Format 3: Nested if else Statement:

Nested if…else statement can be used to choose an option from more than two alternatives. When an if statement is placed in another if statement, it is called nested if statement.

Nested if-else statement is similar to if-else statement, where new block of if-else statement is defined in existing if or else block statement. The nested if-else statement allows us to verify for multiple test expressions and execute different codes for more than two conditions.

Syntax:

```
if(test expression-1)
    {
        if(test expression-2)
            {
              block of statement-1;
            }
        else
            {
              block of statement-2;
            }
 else
    {
        block of statement-3;
    }
  statement-n;
```

Algorithm:

Step1: Start
Step2: Accept three numbers a, b, c
Step3: if (a>b) and
if(a>c) then
display a
else then
if(b>c) then
display b
else then
display c
Step4: Display largest number
Step5: Stop

##Write a program to display largest number from three integer numbers using nested if-else statements.

```
#include<stdio.h>
void main()
{
   int a,b,c;
 printf("Enter three integer numbers:\n ");
 scanf("%d %d %d",&a,&b,&c);
 if(a > b)
{
 if(a > c)
 {
 printf("Largest Number is: %d\n", a);
```

```
 }
 else
{
 printf("Largest number is: %d\n", c);
}
 }
 else
{
 if(c > b)
 {
 printf("Largest Number is: %d\n",c);
 }
 else
 {
 printf("Largest Number is: %d\n",b);
 }
 }
}
```

o/p:

Enter The values of a, b, c

10 15 20

20 is the largest number