Batch: P4-1 **Roll No.: 16010423076**

Experiment / assignment / tutorial No. 2

Grade: AA / AB / BB / BC / CC / CD /DD

Signature of the Staff In-charge with date

TITLE: **a.** Write a program to accept 3 numbers from the user and find the largest of the 3 numbers using
If - else if-else
Ternary operator
b. Write a C program to find the grade of a student using switch case statements.

AIM: a. Write a program to accept 3 numbers from the user and find the largest of the 3 numbers using
If - else if-else
Ternary operator
b. Write a C program to find the grade of a student using switch case statements. The below table shows the grading system.

Score in subject	Grade
>=90	A
80-89	B
70-79	C
60-69	D
50-59	E
<50	F

Expected OUTCOME of Experiment:
Apply basic concepts of C programming for problem solving.(CO1 and CO2).

Books/ Journals/ Websites referred:

1. Programming in C, second edition, Pradeep Dey and Manas Ghosh, Oxford University Press.

2. Programming in ANSI C, fifth edition, E Balagurusamy, Tata McGraw Hill.
3. Introduction to programming and problem solving , G. Michael Schneider ,Wiley India edition.
4. **http://cse.iitkgp.ac.in/~rkumar/pds-vlab/**

Problem Definition:

1. Ask user to input three numbers. Compare three numbers to find the largest of them using
    a. Nested if else statement
    b. Using ternary operator
2. Write a C program to find the grade of a student using switch case statements. The below table shows the grading system.

Score in subject	Grade
>=90	A
80-89	B
70-79	C
60-69	D
50-59	E
<50	F

Algorithm:

1)a.

1.Input three numbers: num1, num2, and num3.
2.Check if num1 is greater than num2.
 a.If true, check if num1 is greater than num3.
  i. If true, print "The 1st Number is the greatest."
  ii. If false, print "The 3rd Number is the greatest."
 b. If false, check if num2 is greater than num3.
  i. If true, print "The 2nd Number is the greatest."
  ii. If false, print "The 3rd Number is the greatest."

1)b.

1.Input three numbers: num1, num2, and num3.
2.Use the ternary operator to find the largest among the three numbers:
 a. If num1 is greater than num2, then:
  i. If num1 is greater than num3, set largest to num1.
  ii. If num3 is greater than num1, set largest to num3.
 b. If num2 is greater than num1, then:
  i. If num2 is greater than num3, set largest to num2.
  ii. If num3 is greater than num2, set largest to num3.
3.Print the value of largest.

2)
1.Input the student's score: n.
2.Use a switch statement to check the value of n in different ranges.
  a. If n is between 0 and 49 (inclusive), print "Your Grade is F."
  b. If n is between 50 and 59 (inclusive), print "Your Grade is E."
  c. If n is between 60 and 69 (inclusive), print "Your Grade is D."
  d. If n is between 70 and 79 (inclusive), print "Your Grade is C."
  e. If n is between 80 and 89 (inclusive), print "Your Grade is B."
  f. If n is between 90 and 100 (inclusive), print "Your Grade is A."

Implementation Details:

Using Nested if else if

```
#include <stdio.h>
void main()
{
int num1, num2, num3;
printf("Input the 1st Number : ");
scanf("%d",&num1);
printf("Input the 2nd Number : ");
scanf("%d",&num2);
printf("Input the 3rd Number : ");
scanf("%d",&num3);

if (num1>num2)
{
    if (num1>num3)
    {
    printf("The 1st Number is the greatest.\n");
    }
    else
    {
    printf("The 3rd Number is the greatest.\n");
    }
}
else if (num2 > num3)
printf("The 2nd Number is the greatest.\n");
else
printf("The 3rd Number is the greatest.\n");
}
```

Using Ternary Operator

```
#include<stdio.h>

void main(){

int num1,num2,num3,largest;

printf("Input the 1st Number : ");

scanf("%d",&num1);

printf("Input the 2nd Number : ");
```

```
scanf("%d",&num2);
printf("Input the 3rd Number : ");
scanf("%d",&num3);

largest = (num1 > num2) ?
        (num1 > num3 ? num1 : num3):
        (num2 > num3 ? num2 : num3);

printf("The largest of the three numbers is = %d",largest);
}
```

2.

```
#include<stdio.h>
void main(){
int n;
printf("Enter your Score : ");
scanf("%d",&n);

switch(n){
case 0 ... 49 :
        printf("\nYour Grade is F\n");
        break;
case 50 ... 59 :
        printf("\nYour Grade is E\n");
```

```
                break;
case 60 ... 69 :
                printf("\nYour Grade is D\n");
                break;
case 70 ... 79 :
                printf("\nYour Grade is C\n");
                break;
case 80 ... 89 :
                printf("\nYour Grade is B\n");
                break;
case 90 ... 100 :
                printf("\nYour Grade is A\n");
                break;
}
}
```

Output(s):

1)a.

```
Input the 1st Number : 5
Input the 2nd Number : 12
Input the 3rd Number : 9
The 2nd Number is the greatest.
```

1)b.

```
Input the 1st Number : 5
Input the 2nd Number : 7
Input the 3rd Number : 1
The largest of the three numbers is = 7
```

2)

```
Enter your Score : 54

Your Grade is E
```

Conclusion:

Through coding these C programs, I learned to use if-else and ternary operators for comparing numbers and implemented switch case statements for grade determination. These exercises improved my understanding of control flow structures, enhancing my problem-solving skills and programming versatility.

Post Lab Descriptive Questions

1. **Virtual lab for switch statement**
   https://cse02-iiith.vlabs.ac.in/exp/basic-control-flow/simulation.html

2. Virtual lab for if statement
   https://cse02-iiith.vlabs.ac.in/exp/basic-control-flow/simulation.html

Date:
Signature of faculty in-charge _____