Batch: C5_3	**Roll No.: 16010123320**

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)

Step1: take in input of 3 numbers from the user

Step2: Compare them using if else / switch case.

Step 3: print the output

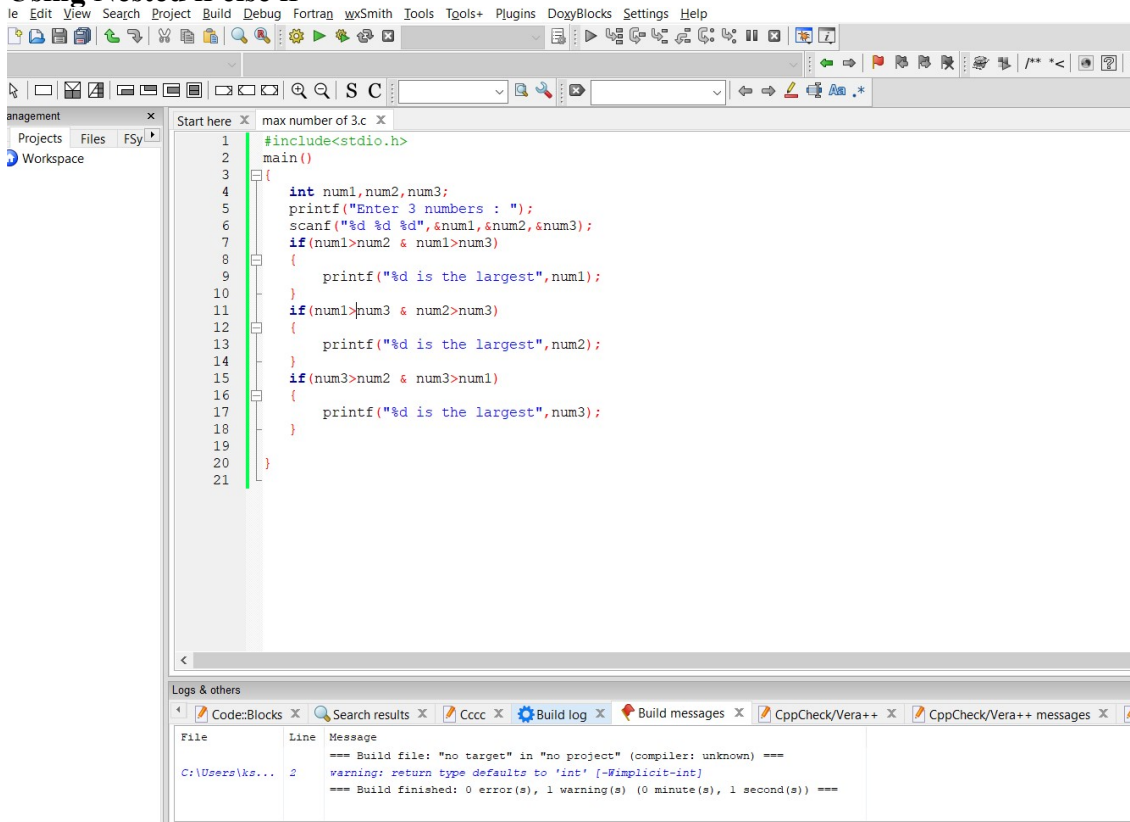**2)**

Step1: take input from the user

Step2: Compare using switch case with marks/10 i.e cases will have

   9,8,7,6,5, default .

Step3: print the output.

Implementation Details:
Using Nested if else if

Start here   max number of 3.c

```c
#include<stdio.h>
main()
{
    int num1,num2,num3;
    printf("Enter 3 numbers : ");
    scanf("%d %d %d",&num1,&num2,&num3);
    if(num1>num2 & num1>num3)
    {
        printf("%d is the largest",num1);
    }
    if(num1>num3 & num2>num3)
    {
        printf("%d is the largest",num2);
    }
    if(num3>num2 & num3>num1)
    {
        printf("%d is the largest",num3);
    }

}
```

Logs & others

Code::Blocks   Search results   Cccc   Build log   Build messages   CppCheck/Vera++   CppCheck/Vera++ messages

File	Line	Message
		=== Build file: "no target" in "no project" (compiler: unknown) ===
C:\Users\ks...	2	warning: return type defaults to 'int' [-Wimplicit-int]
		=== Build finished: 0 error(s), 1 warning(s) (0 minute(s), 1 second(s)) ===

Using Ternary Operator


```c
#include<stdio.h>
main()
{
    int num1,num2,num3;
    printf("Enter 3 numbers : ");
    scanf("%d %d %d",&num1,&num2,&num3);
    (num1>num2)?((num1>num3)?printf("%d is largest",num1):printf("%d is largest",num3)):printf("%d is largest",num2);
}
```

Grading of Student

GradeofStudent.c - Code::Blocks 20.03

File Edit View Search Project Build Debug Fortran wxSmith Tools Tools+ Plugins DoxyBlocks Settings Help

Start here   GradeofStudent.c

```c
#include<stdio.h>
main()
{
    int marks;
    printf("Enter your marks : ");
    scanf("%d",&marks);
    marks=marks/10;
    switch (marks)
        {
            case 9:
                printf("A grade");
                break;
            case 8:
                printf("B grade");
                break;
            case 7:
                printf("C grade");
                break;
            case 6:
                printf("D grade");
                break;
            case 5:
                printf("E grade");
                break;
            default :
                printf("F grade");
                break;
        }

}
```

Logs & others

Code::Blocks   Search results   Cccc   Build log   Build messages   CppCheck/Vera++   CppCheck/Vera++ messages   Cscope   Debugger

File	Line	Message
		=== Build file: "no target" in "no project" (compiler: unknown) ===
C:\Users\ks...	2	warning: return type defaults to 'int' [-Wimplicit-int]
		=== Build finished: 0 error(s), 1 warning(s) (0 minute(s), 1 second(s)) ===

Output(s):
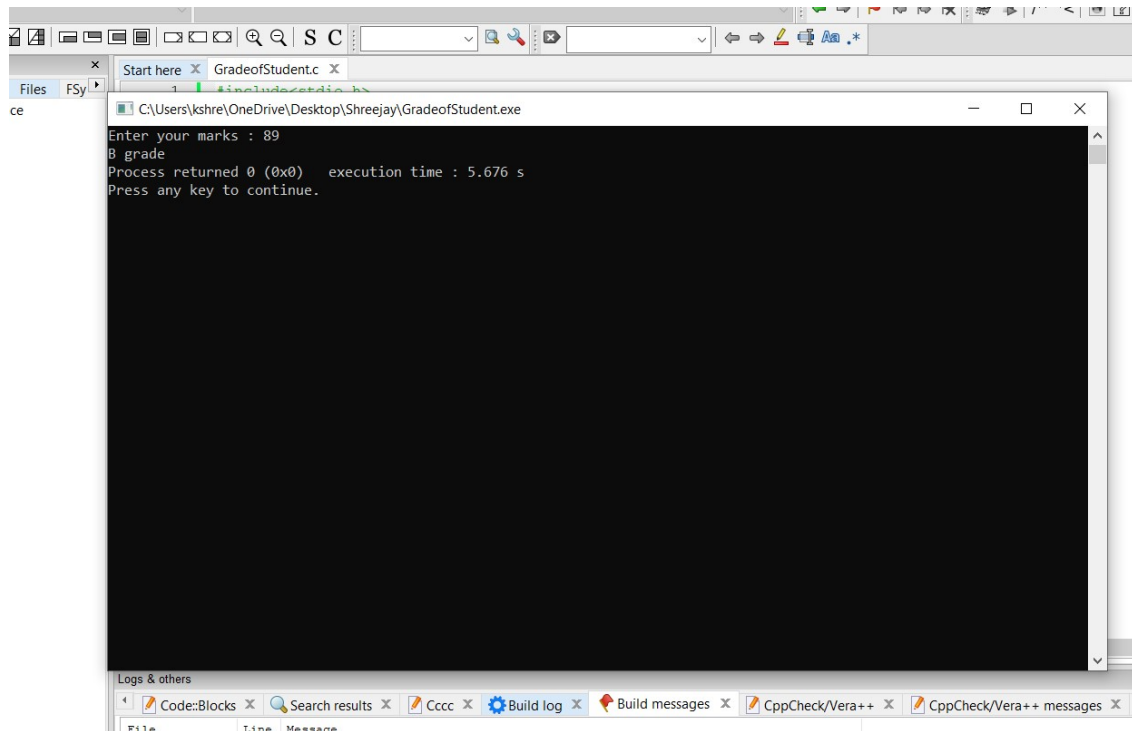
```
Enter 3 numbers : 23 45 12
45 is the largest
Process returned 0 (0x0)   execution time : 8.038 s
Press any key to continue.
```

```
Enter 3 numbers : 90 21 66
90 is largest
Process returned 0 (0x0)   execution time : 6.524 s
Press any key to continue.
```

File   Line   Message
=== Build file: "no target" in "no project" (compiler: unknown) ===
C:\Users\ks...   2   warning: return type defaults to 'int' [-Wimplicit-int]
=== Build finished: 0 error(s), 1 warning(s) (0 minute(s), 0 second(s)) ===

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Conclusion:

Use of switch case in C is very efficient when dealing with huge cases. Its is also very secure compared to if else when making an application.

The ternary operator is very useful for forming logic with less syntax.

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

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Date:
Signature of faculty in-charge