Basic Programming Lab

— — 0x04

getchar() & putchar()

```c
// Program to take single character input and print
that output

#include<stdio.h>

int main()
{
        int ch;
        ch=getchar();
        putchar(ch);
        return 0;
}
```

switch case

```c
// Program to make calculator


#include<stdio.h>
int main()
{
    char operator;
    int Number_1, Number_2, Result;
    printf("Enter an operator --> +, -, *, /: ");
    scanf("%c", &operator);
    printf("\nEnter First Number: ");
    scanf("%d", &Number_1);
    printf("\nEnter Second Number: ");
    scanf("%d", &Number_2);

    switch(operator)
    {
       case '+': Result = Number_1 + Number_2;
               printf("%d + %d = %d",Number_1, Number_2, Result);
                break;
       case '-': Result = Number_1 - Number_2;
               printf("%d + %d = %d",Number_1, Number_2, Result);
                break;
       case '*': Result = Number_1 * Number_2;
               printf("%d + %d = %d",Number_1, Number_2, Result);
                break;
       case '/': Result = Number_1 / Number_2;
               printf("%d + %d = %d",Number_1, Number_2, Result);
                break;
       default:  printf("Error! operator is not correct");
    }

        return 0;
}
```

if... & if...else...

// Program to find <u>Largest number between 3 nos</u>.

```c
#include <stdio.h>
int main()
{
    int a, b, c, max;
    printf("\nEnter 3 numbers");
    scanf("%d %d %d", &a, &b, &c);
    max = a;
    if(b > max)
        max = b;
    if(c > max)
        max = c;
    printf("Largest No is %d", max);
    return 0;
}
```

// Program to find <u>whether number is odd or even</u>

```c
#include <stdio.h>
int main()
{
    int Number, Result;
    printf("\nEnter the number");
    scanf("%d", &n);
    Result = Number % 2;
    if(Result == 0)
        printf("EVEN");
    else
        printf("ODD");
    return 0;
}
```

```c
// Program to find Largest number between 3 nos
using if... else if... else...

#include <stdio.h>
int main()
{
    int a, b, c, max;
    printf("\nEnter 3 numbers");
    scanf("%d %d %d", &a, &b, &c);

    if(a > b && a > c)
        max = a;
    else if(b > a && b > c)
        max = b;
    else
        max = c;
    printf("Largest No is %d", max);
    return 0;
}
```

Assignment

//Use scanf for input in Every Program

1. Write a program to print formatted integers.

Input : 123
Output:

```
|1|2|3| | | | | | | | //Width = 10
| | | | | | | |1|2|3| //Width = 10
```

2. Write a program to print formatted floating point numbers.

Input : 1234.56
Output:

```
|1|2|3|4|.|5|6|0|0|0|0|
|1|.|2|3|4|5|6|0|e|+|0|3|
|1|2|3|5|
|1|2|3|4|.|6|
|1|2|3|4|.|5|6|0| | |
| | |1|2|3|4|.|5|6|0|
| |1|.|2|3|5|e|+|0|3|
```

3. A strict college under FAkirchand and Lakirchand Trust University has following Grade System:

Marks	Grade
90–100	A1
80–89	A2
70–79	B1
60–69	B2
50–59	C
<50	F

They have asked for our help. Write a program using **switch case** to determine the grade scored by a student in a subject.

4. Write a program that determines whether a year is a **leap year or not.**

5. Write a program that will **print the date** in the the format given below.

Input : 21 02 1992
Output: 21st February 1992

Do not forget about "th", "nd", "st", and "rd" i.e. 1st, 2nd, 3rd, 4th; and then 11th, 12th, 13th, 14th; and 21st, 22nd, 23rd, and 24th.

6. Once again my friend from Mathematics Department asked for my help and again I cannot turn down her request. She needs a program to **check whether the triangle can be formed or not** if the <u>lengths of three sides of a triangle</u> is given. And If possible then classify the triangle as <u>equilateral, isosceles or scalene.</u>

Input : 3 4 5
Output: yes, scalene

Points to Remember

1. Filetype: .c

2. Naming Convention for Directory: Assignment_X
        where X = Lab No
        example: Assignment_1

3. Naming Convention for File: RollNo_Q_Y.c
        where Y = Question No in that Assignment
        example: 123XXX4567_Q_1.c

Commands:

	Command	Example
Create Directory	mkdir <directory_name>	mkdir test_directory
Create File	vi <filename>	vi test.c
Compile a C Program	gcc <filename>	gcc test.c
Run a C Program	./a.out	

4. Write your details in every program

```
/*
 --------------------------------------------------------
|Author : Your_Name                                      |
|Roll No: Your_Roll_No                                   |
|Department: Your_Department                             |
 --------------------------------------------------------
*/
```