

# Practical Assignment

18.11.2022

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**Course Name** - BCA

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**Program Name** - Q1. Write a C program to check whether a number is negative, positive or zero.

**Code:-**

```
#include <stdio.h>

int main()
{
    int num;

    printf("Enter a number: ");
    scanf("%d", &num);

    if (num == 0)
        printf("Number is Zero");
    else if (num >= 1)
        printf("%d is a Positive Number",num);
    else
        printf("%d is a Negative Number",num);

    return 0;
}
```

**output:-**

```
Enter a number: 91
91 is a Positive Number
```

```
Enter a number: -12    Enter a number: 0
-12 is a Negative Number    Number is Zero
```

**Program Name** - Q2. Write a C program to check whether a number is divisible by 5 and 11 or not.

**Code:-**

```
#include <stdio.h>

int main()
{
    int num;

    printf("Enter a number: ");
    scanf("%d", &num);

    if (num % 5 == 0 && num % 11 == 0)
        printf("Number is divisible by 5 and 11");
    else
        printf("Number is not divisible by 5 and 11");

    return 0;
}
```

**output:-**

```
Enter a number: 110
Number is divisible by 5 and 11
```

```
Enter a number: 67
Number is not divisible by 5 and 11
```

**Program Name** - Q3. Write a C program to check whether a year is a leap year or not.

**Code:-**

```
#include <stdio.h>

int main()
{
    int year;

    printf("Enter Year: ");
    scanf("%d", &year);

    if (year % 100 == 0)
    {
        if (year % 400 == 0)
            printf("%d is leap a year.", year);
        else
            printf("%d is not a leap year.", year);
    }
    else
    {
        if (year % 4 == 0)
            printf("%d is leap a year.", year);
        else
            printf("%d is not a leap year.", year);
    }

    return 0;
}
```

**output:-**

```
Enter Year: 2024
2024 is leap a year.
```

```
Enter Year: 2022
2022 is not a leap year.
```

**Program Name** - Q4. Write a C program to check whether a character is alphabet or not.

**Code:-**

```
#include <stdio.h>

int main()
{
    char ch;

    printf("Enter a character: ");
    scanf("%c", &ch);

    if (ch >= 'a' && ch <= 'z' || ch >= 'A' && ch <= 'Z')
        printf("%c is an alphabet", ch);
    else
        printf("%c is not an alphabet", ch);

    return 0;
}
```

**output:-**

```
Enter a character: k
'k' is an alphabet
```

```
Enter a character: \
'\ ' is not an alphabet
```

**Program Name** - Q5. Write a C program to input any alphabet and check whether it is vowel or consonant.

**Code:-**

```
#include <stdio.h>

int main()
{
    char ch;

    printf("Enter any alphabet: ");
    scanf("%c", &ch);

    if (ch == 'a' || ch == 'e' || ch == 'i' || ch == 'o' || ch == 'u' ||
        ch == 'A' || ch == 'E' || ch == 'I' || ch == 'O' || ch == 'U')
        printf("%c is a vowel.", ch);
    else
        printf("%c is a consonant.", ch);

    return 0;
}
```

**output:-**

```
Enter any alphabet: i
i is a vowel.
```

```
Enter any alphabet: T
T is a consonant.
```

**Program Name** - Q6. Write a C program to input any character and check whether it is alphabet, digit or special character.

**Code:-**

```
#include <stdio.h>

int main()
{
    char ch;

    printf("Enter any character: ");
    scanf("%c", &ch);

    if (ch >= 'a' && ch <= 'z' || ch >= 'A' && ch <= 'Z')
        printf("'%c' is an alphabet.", ch);
    else if (ch >= '0' && ch <= '9')
        printf("'%c' is a digit.", ch);
    else
        printf("'%c' is a special character.", ch);

    return 0;
}
```

**output:-**

```
Enter any character: j
'j' is an alphabet.
```

```
Enter any character: 7
'7' is a digit.
```

```
Enter any character: ?
'?' is a special character.
```

**Program Name** - Q7. Write a C program to check whether a character is uppercase or lowercase alphabet.

**Code:-**

```
#include <stdio.h>

int main()
{
    char ch;

    printf("Enter any alphabet: ");
    scanf("%c", &ch);

    if (ch >= 'A' && ch <= 'Z')
        printf("'%c' is an uppercase alphabet.", ch);
    else if (ch >= 'a' && ch <= 'z')
        printf("'%c' is an lowercase alphabet.", ch);
    else
        printf("'%c' is not an alphabet.", ch);

    return 0;
}
```

**output:-**

```
Enter any alphabet: V
'V' is an uppercase alphabet.
```

```
Enter any alphabet: h
'h' is an lowercase alphabet.
```

**Program Name** - Q8. Write a C program to input week numbers and print week day.

**Code:-**

```
#include <stdio.h>

int main()
{
    int week;

    printf("Enter week number: ");
    scanf("%d", &week);

    if (week == 1)
        printf("Monday");
    else if (week == 2)
        printf("Tuesday");
    else if (week == 3)
        printf("Wednesday");
    else if (week == 4)
        printf("Thursday");
    else if (week == 5)
        printf("Friday");
    else if (week == 6)
        printf("Saturday");
    else if (week == 7)
        printf("Sunday");
    else
        printf("Invalid Input! Please enter week number between 1-7.");

    return 0;
}
```

**output:-**

```
Enter week number: 5
Friday
```



**Program Name** - Q9. Write a C program to input month number and print number of days in that month.

**Code:-**

```
#include <stdio.h>

int main()
{
    int month;
    printf("Enter month number: ");
    scanf("%d", &month);
    if (month == 1)
        printf("31 days");
    else if (month == 2)
        printf("28 or 29 days");
    else if (month == 3)
        printf("31 days");
    else if (month == 4)
        printf("30 days");
    else if (month == 5)
        printf("31 days");
    else if (month == 6)
        printf("30 days");
    else if (month == 7)
        printf("31 days");
    else if (month == 8)
        printf("31 days");
    else if (month == 9)
        printf("30 days");
    else if (month == 10)
        printf("31 days");
    else if (month == 11)
        printf("30 days");
    else if (month == 12)
        printf("31 days");
    else
        printf("Invalid input! Please enter month number between (1-12).");

    return 0;
}
```

**output:-**

```
Enter month number: 11
30 days
```

**Program Name** - Q10. Write a C program to input angles of a triangle and check whether triangle is valid or not.

**Code:-**

```
#include <stdio.h>

int main()
{
    int a1, a2, a3, sum;

    printf("Enter three angles of triangle: ");
    scanf("%d%d%d", &a1, &a2, &a3);

    sum = a1 + a2 + a3;

    if (sum == 180 && a1 > 0 && a2 > 0 && a3 > 0)
    {
        printf("Triangle is valid.");
    }
    else
    {
        printf("Triangle is not valid.");
    }

    return 0;
}
```

**output:-**

```
Enter three angles of triangle: 30 60 90
Triangle is valid.
```

```
Enter three angles of triangle: 45 45 60
Triangle is not valid.
```

**Program Name** - Q11. Write a C program to input all sides of a triangle and check whether triangle is valid or not.

**Code:-**

```
#include <stdio.h>

int main()
{
    int s1, s2, s3;

    printf("Enter three sides of triangle: ");
    scanf("%d%d%d", &s1, &s2, &s3);

    if ((s1 + s2) > s3)
    {
        if ((s2 + s3) > s1)
        {
            if ((s3 + s1) > s2)
            {
                printf("Triangle is valid.");
            }
            else
            {
                printf("Triangle is not valid.");
            }
        }
        else
        {
            printf("Triangle is not valid.");
        }
    }
    else
    {
        printf("Triangle is not valid.");
    }
    return 0;
}
```

**output:-**

```
Enter three sides of triangle: 7 7 7
Triangle is valid.
```

```
Enter three sides of triangle: 4 7 11
Triangle is not valid.
```

**Program Name** - Q12. Write a C program to check whether the triangle is equilateral, isosceles or scalene triangle.

**Code:-**

```
#include <stdio.h>

int main()
{
    int a, b, c;

    printf("Enter three sides of triangle: ");
    scanf("%d%d%d", &a, &b, &c);

    if ((a == b) && (b == c))
        printf("Equilateral Triangle");
    else if (a == b || b == c || c == a)
        printf("Isosceles Triangle");
    else
        printf("Scalene Triangle");

    return 0;
}
```

**output:-**

```
Enter three sides of triangle: 6 6 6
Equilateral Triangle
```

```
Enter three sides of triangle: 4 4 7
Isosceles Triangle
```

```
Enter three sides of triangle: 4 5 2
Scalene Triangle
```

**Program Name** - Q13. Write a C program to input marks of five subjects Physics, Chemistry, Biology, Mathematics and Computer.

**Code:-**

```
#include <stdio.h>

int main()
{
    int phy, chem, bio, math, comp;
    float percentage;

    printf("Enter marks of 5 subjects: ");
    scanf("%d%d%d%d%d", &phy, &chem, &bio, &math, &comp);

    percentage = ((phy + chem + bio + math + comp) / 500.0) * 100.0;
    printf("Percentage = %.2f%%\n", percentage);

    if (percentage >= 90)
        printf("Grade A");
    else if (percentage >= 80)
        printf("Grade B");
    else if (percentage >= 70)
        printf("Grade C");
    else if (percentage >= 60)
        printf("Grade D");
    else if (percentage >= 40)
        printf("Grade E");
    else
        printf("Grade F");

    return 0;
}
```

**output:-**

```
Enter marks of 5 subjects: 67 90 88 71 55
Percentage = 74.20%
Grade C
```

**Program Name** - Q14. Write a C program to input basic salary of an employee and calculate its Gross salary according to following:

**Code:-**

```
#include <stdio.h>

int main()
{
    float BasicSalary, GrossSalary, hra, da;

    printf("Enter basic salary of an employee: ");
    scanf("%f", &BasicSalary);

    if (BasicSalary <= 10000)
    {
        hra = BasicSalary * 0.2;
        da = BasicSalary * 0.8;
    }
    else if (BasicSalary > 20000)
    {
        hra = BasicSalary * 0.3;
        da = BasicSalary * 0.95;
    }
    else
    {
        hra = BasicSalary * 0.25;
        da = BasicSalary * 0.9;
    }

    GrossSalary = BasicSalary + hra + da;

    printf("GROSS SALARY OF EMPLOYEE = %.2f", GrossSalary);

    return 0;
}
```

**output:-**

```
Enter basic salary of an employee: 18960
GROSS SALARY OF EMPLOYEE = 40764.00
```

```
Enter basic salary of an employee: 35700
GROSS SALARY OF EMPLOYEE = 80325.00
```