Assignment - 3

A Job Ready Bootcamp in C++, DSA and IOT MySirG Decision Control Statements

1. Write a program to check whether a given number is positive or non-positive.

```c
#include<stdio.h>
int main()
{
    int n = 5;
    if (n>0)
    {
        printf("positive");
    }
    else
    {
        printf("non-positive");
    }
}
```

2. Write a program to check whether a given number is divisible by 5 or not

```c
#include<stdio.h>
int main()
{
    int n = 10;
    if (n%5==0)
    {
        printf("divisible");
    }
    else
    {
        printf("not");
    }
    return 0;
}
```

3. Write a program to check whether a given number is an even number or an odd number.

```
#include<stdio.h>
int main()
{
    int n = 13;
    if (n%2==0)
    {
        printf("Even");
    }
    else
    {
        printf("Odd");
    }
}
```

4. Write a program to check whether a given number is an even number or an odd number without using % operator.

```
#include<stdio.h>
int main()
{
    int n = 11;
    if (n&1)
    {
        printf("Odd");
    }
    else
    {
        printf("Even");
    }
}
```

5. Write a program to check whether a given number is a three-digit number or not.

```
#include<stdio.h>
int main()
```

```
{
    int n = 987;
    if (n>99 && n<1000)
    {
        printf("three digit num");
    }
    else
    {
        printf("not");
    }
}
```

6. Write a program to print greater between two numbers. Print one number of both are the same.

```
#include<stdio.h>
int main()
{
    int a = 2, b = 8;
    if (a>b)
    {
        printf("a is greater");
    }
    else if (b>a)
    {
        printf("b is gresater");
    }
    else
    {
        printf("%d",a);
    }
}
```

7. Write a program to check whether roots of a given quadratic equation are real & distinct, real & equal or imaginary roots

```
#include<stdio.h>
int main()
{
    int a = 1, b =12, c =4, d;
    d = b*b - 4*a*c;
```

```
    if (d>0)
    {
        printf("real and distinct");
    }
    else if (d<0)
    {
        printf("imaginary roots");
    }
    else if(d=0)
    {
        printf("real and equal");
    }
}
```

8. Write a program to check whether a given year is a leap year or not.

```
#include<stdio.h>
int main()
{
    int y = 2000;
    if (y%4 == 0)
    {
        printf("Leap year");
    }
    else if (y%400 == 0)
    {
        printf("leap year");
    }
    else if (y%100 == 0)
    {
        printf("Not a leap year");
    }
    else
    {
        printf("not a leap year");
    }
}
```

9. Write a program to find the greatest among three given numbers.
Print number once if the greatest number appears two or three times.

```
#include<stdio.h>
int main()
{
    int a = 4, b = 3, c = 4;
    if (a >= b && a>=c)
    {
        printf("a = %d is greatest",a);
    }
    else if (b>=a && b>=c)
    {
        printf("b = %d is greatest",b);
    }
    else if (c>=a && c>=b)
    {
        printf("c = %d is greatest",c);
    }
}
```

10. Write a program which takes the cost price and selling price of a product from the user.
Now calculate and print profit or loss percentage.

```
#include<stdio.h>
int main()
{
    int cost, sell;
    float per;
    printf("Enter cost price and selling price: ");
    scanf("%d %d",&cost,&sell);
    per = ((sell - cost)* 100) / sell;
    printf("%f",per);
    if (cost < sell)
    {
       printf("\nprofit of %f",per);
    }
    else
    {
        printf("\nloss of %f",per);
    }
```

```
}
```

11. Write a program to take marks of 5 subjects from the user. Assume marks are given out of 100 and passing marks is 33.
Now display whether the candidate passed the examination or failed.

```
#include<stdio.h>
int main()
{
    int s1,s2,s3,s4,s5, total;
    printf("Enter five subjects marks: ");
    scanf("%d %d %d %d %d",&s1,&s2,&s3,&s4,&s5);
    total = s1 +s2 +s3 + s4 +s4 / 5;
    if (total > 33 && s1 > 33 && s2 > 33 && s3 > 33 && s4 > 33 && s5 > 33)
    {
        printf("You're passed");
    }
    else
    {
        printf("you're failed");
    }
}
```

12. Write a program to check whether a given alphabet is in uppercase or lowercase.

```
#include<stdio.h>
int main()
{
    char ch ='a';
    if (ch >= 'A' && ch<='Z')
    {
        printf("Letter is in UpperCase");
    }
    else
    {
        printf("Letter is in LowerCase");
    }
}
```

13. Write a program to check whether a given number is divisible by 3 and divisible by 2

```
#include<stdio.h>
int main()
{
    int a = 24;
    if (a % 3 == 0 && a % 2 == 0)
    {
        printf("Number is divisible");
    }
    else
    {
        printf("Number is not divisible");
    }
}
```

14. Write a program to check whether a given number is divisible by 7 or divisible by 3.

```
#include<stdio.h>
int main()
{
    int a = 14;
    if (a % 7 == 0 || a % 3 == 0)
    {
        printf("Number is divisible");
    }
    else
    {
        printf("Number is not divisible");
    }
}
```

15. Write a program to check whether a given number is positive, negative or zero.

```
#include<stdio.h>
int main()
{
```

```
    int n=-3;
    if (n>0)
    {
        printf("positive");
    }
    else if (n<0)
    {
        printf("negative");
    }
    else
    {
        printf("zero");
    }
}
```

16. Write a program to check whether a given character is an alphabet (uppercase), an alphabet (lower case),
a digit or a special character.

```
#include<stdio.h>
int main()
{
    char ch = 'G';
    if (ch>='A' && ch<='Z')
    {
        printf("Character is in uppercase");
    }
    else if (ch>='a' && ch<='z')
    {
        printf("Character is in lowercase");
    }
    else if (ch>='0' && ch<='9')
    {
        printf("character is in Digit");
    }
    else
    {
        printf("Special Character");
    }
}
```

17. Write a program which takes the length of the sides of a triangle as an input. Display whether the triangle is valid or not.

```c
#include<stdio.h>
int main()
{
    int a, b, c, sum =0;
    printf("Enter three sides of triangles: ");
    scanf("%d %d %d", &a,&b,&c);
    if (a + b > c && a+c> b && b+c>a)
    {
        printf("Triangle is valid");
    }
    else
    {
        printf("Not valid");
    }
}
```

18. Write a program which takes the month number as an input and display number of days in that month

```c
#include<stdio.h>
int main()
{
    int m;
    printf("Enter month:");
    scanf("%d", &m);
    if (m == 1|| m ==3|| m ==5|| m ==7|| m ==8|| m ==10|| m ==12)
    {
        printf("Days are: 31");
    }
    else if (m == 4|| m ==6|| m ==9|| m ==11)
    {
        printf("Days are: 30");
    }
    else if(m == 2)
    {
        printf("days are: 28||29");
    }
}
```