

Assignment - 3 A Job Ready Bootcamp in C++, DSA and IOT

Decision Control Statements

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

```
int main()
{
    int x=10;

    if(x>0)
        printf("Positive Number");
    else
        printf("Non-Positive");
}
```

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

```
int main()
{
    int x=55;

    if(x%5==0)
        printf("Divisible by 5");
    else
        printf("Not divisible");
}
```

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

```
int main()
{
    int x=543;

    if(x%2==0)
        printf("Even Number");
    else
        printf("odd Number");
}
```

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

```
int main()
{
    int x=540;

    if(x&1==1)
        printf("Odd Number");
    else
        printf("Even Number");
}
```

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

```
int main()
{
    int x=126;

    x=x/100;

    if(x>=1 && x<9)
        printf("Three digit number");
    else
        printf("Not- three digit number");
}
```

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

```
int main()
{
    int x,y;

    printf("Enter two numbers");
    scanf("%d%d",&x,&y);

    if(x>y)
        printf("Greater number is %d",x);
    else
        if(x<y)
            printf("Greater Number is %d ",y);
        else
            printf("Both are same numbers is %d",x);
}
```

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

```
int main()
{
    int a,b,c,disc;
    printf("Enter values of a b c");
    scanf("%d%d%d",&a,&b,&c);

    //Quadratic Equation = ax^2+bx+c=0
    disc = b*b + 4*a*c ;
    if(disc>0)
        printf("Real and Distinct");
    else if(disc<0)
        printf("Imaginary roots");
    else
        printf("Real and Equal");
    return 0;
}
```

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

```
int main()
{
    int x;

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

    if(x%4==0)
        printf("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.

```
int main()
{
    int x,y,z;

    printf("Enter three numbers");
    scanf("%d%d%d",&x,&y,&z);

    if(x>y && x>z)
        printf("Greater number is %d",x);
    else
        if(y>z)
            printf("Greater Number is %d ",y);
        else
            printf("Greater Number is %d ",z);
}
```

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()
{
    float x,y,a,b;
    printf("Enter CP and SP ");
    scanf("%f%f",&x,&y);

    if(x<y)
    {
        float profit;
        profit = y-x;
        a=profit/x*100;
```

```

        printf("Profit Percent = %.2f",a);
    }
else
    {
        float loss;
        loss=x-y;
        b=loss/x*100;

        printf("Loss Percent = %.2f",b);
    }

    return 0;
}

```

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 a,b,c,d,e;

    printf(" Enter numbers");
    scanf("%d%d%d%d%d",&a,&b,&c,&d,&e);

    if(a>=33 && b>=33 && c>=33 && d>=33 && e>=33)
        printf("You are Passed");
    else
        printf("You failed");

    return 0;
}

```

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

#include<stdio.h>

```

int main()
{
    char x='S';

    if(x>='A' && x<='Z')
        printf("uppercase") ;
    else
        printf("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 x=18;

    if(x%3==0 && x%2==0)
        printf("Divisible by 3 and 2");
    else
        printf("Not-Divisible by 3 and 2");
}
```

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

```
int main()
{
    int x=18;

    if(x%7==0 && x%3==0)
        printf("Divisible by 7 or 3");
    else
        printf("Not-Divisible by 7 or 3");
}
```

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

```
#include<stdio.h>
```

```
int main()
{
    int x=26;

    if(x>0)
        printf("positive");

    else
        if(x<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.

```
int main()
{
    char x='a';

    if(x>='A' && x<='Z')
        printf("uppercase") ;
    else
        if(x>='a' && x<='z')
            printf("lowercase") ;
        else
            if(x>='0' && x<='9')
                printf("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.

```
int main()
{
    int x,y,z;
    printf("Enter the lengths of the triangles");
    scanf("%d%d%d",&x,&y,&z);

    if(x+y>z && y+z>x && x+z>y)
        printf("Valid Triangle");
    else
        printf("Not-Valid Triangle");

    return 0;
}
```

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

```
int main()
{
    int x;
    printf("Enter month number");
    scanf("%d",&x);

    if(x==1 || x== 3 || x== 5 || x== 7 || x== 8 || x== 10 || x== 12)
        printf("31");
    else
        printf("30");

    return 0;
}
```