

A Job Ready Bootcamp in C++, DSA and IOT

Assignment-3

Name:-Sourav Samanta

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

Ans:-

```
#include<stdio.h>
#include<conio.h>
int main()
{
    int x;
    printf("Enter a number ");
    scanf("%d",&x);
    if(x>0)
        printf("Positive Number");
    else
        printf("Non-positive Number");
    getch();
}
```

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

Ans:-

```
#include<stdio.h>
#include<conio.h>
int main()
{
    int x;
    printf("Enter a number ");
    scanf("%d",&x);
    if(x%5)
        printf("Not Divisible by 5");
    else
```

```
        printf("Divisible by 5");  
    getch();  
}
```

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

Ans:-

```
#include<stdio.h>  
#include<conio.h>  
int main()  
{  
    int x;  
    printf("Enter a number ");  
    scanf("%d",&x);  
    if(x%2)  
        printf("Odd Number");  
    else  
        printf("Even Number");  
    getch();  
}
```

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

```
#include<stdio.h>  
#include<conio.h>  
int main()  
{  
    int x,y;  
    printf("Enter a number ");  
    scanf("%d",&x);  
    y=x/2;  
    if(y*2==x)  
        printf("Even number");  
}
```

```
else
    printf("Odd Number");
    getch();
}
```

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

Ans:-

```
#include<stdio.h>
#include<conio.h>
int main()
{
    int x,count=0;
    printf("Enter a number ");
    scanf("%d",&x);
    while(x)
    {
        x/=10;
        count++;
    }
    if(count==3)
        printf("Three Digit number");
    else
        printf("Not a three-digit number");
    getch();
}
```

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

Ans:-

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

```

int x,y;

printf("Enter Two number ");

scanf("%d%d",&x,&y);

if(x>y)

    printf("%d",x);

else if(x==y)

    printf("%d",x);

else

    printf("%d",y);

getch();

}

```

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

Ans:-

```

#include<stdio.h>

#include<conio.h>

int main()

{

    int a,b,c,d;

    printf("Enter the value of a,b,c,");    //equation = a*x*x+b*x+c=0

    scanf("%d%d%d",&a,&b,&c);

    d=b*b-4*a*c;    //d=Discriminant

    if(d>0)

        printf("The roots are real & distinct");

    else if(d==0)

        printf("The roots are real & equal ");

    else

        printf("The roots are imaginary");

    getch();

}

```

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

Ans:-

```
#include<stdio.h>
#include<conio.h>
int main()
{
    int a,b;
    printf("Enter a year ");
    scanf("%d",&a);
    b=a/100;
    if(b*100==a)
        a%400?printf("%d is Not a Leap year",a):printf("%d is a leap Year",a);
    else
        a%4? printf("%d is Not a Leap year",a):printf("%d is a Leap year",a);
    return 0;
}
```

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

Ans:-

```
#include<stdio.h>
#include<conio.h>
int main()
{
    int a,b,c;
    printf("Enter three number ");
    scanf("%d%d%d",&a,&b,&c);
    a>b?a>c?printf("%d",a):printf("%d",c):b>c?printf("%d",b):printf("%d",c);
    getch();
}
```

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.

Ans:-

```

#include<stdio.h>
#include<conio.h>
int main()
{
    float x,y,profit,loss;
    printf("Enter the cost price and selling price:>");
    scanf("%f%f",&x,&y);
    if(x<y)
    {
        profit=(y-x)/x*100;
        printf("Profit percentage =%.2f%%",profit);
    }
    if(x>y)
    {
        loss=(x-y)/x*100;
        printf("Loss percentage is =%.2f%%",loss);
    }
    getch();
}

```

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.

Ans:-

```

#include<stdio.h>
#include<conio.h>
int main()
{
    int a[5],x,i;
    printf("Enter the marks of five subject out of 100 :-");
    for(i=0;i<5;i++)
        scanf("%d",&a[i]);
}

```

```

for(i=1,x=a[0];i<5;i++)
    x=x<a[i]?x:a[i];
if(x<33)
    printf("You failed in the examination");
else
    printf("You passed in the examination");
getch();
}

```

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

Ans:-

```

#include<stdio.h>
#include<conio.h>
int main()
{
    char c;
    printf("Enter an Alphabet");
    scanf("%c",&c);
    if(c>64 && c<91)
        printf("Uppercase Alphabet");
    else if(c>96 && c<123)
        printf("Lowercase Alphabet");
    else
        printf("You enter an invalid input");
    getch();
}

```

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

Ans:-

```

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

```

```

int a;

printf("Enter a number ");

scanf("%d",&a);

if(a%6)

    printf("Not Divisible by 3 and 2");

else

    printf("Divisible by 2 and 3");

getch();

}

```

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

Ans:-

```

#include<stdio.h>

#include<conio.h>

int main()

{

    int a;

    printf("Enter a number ");

    scanf("%d",&a);

    if((a%7==0) || (a%3==0))

        printf("The number is divisible by 7 or 3");

    else

        printf("The Number is not divisible by 7 or 3");

    getch();

}

```

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

Ans:-

```

#include<stdio.h>

#include<conio.h>

int main()

{

    int a;

```



```

printf("Enter a number ");
scanf("%d",&a);
if(a>0)
    printf("Positive Number");
else if(a==0)
    printf("Zero");
else
    printf("Negative Number");
getch();
}

```

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

Ans:-

```

#include<stdio.h>
#include<conio.h>
int main()
{
    char c;
    printf("Enter a character ");
    scanf("%c",&c);
    if(c>64 && c<93)
        printf("Uppercase alphabet");
    else if(c>96 && c<123)
        printf("Lower case alphabet ");
    else if(c>47 && c<58)
        printf("A digit");
    else
        printf("A special Character");
    getch();
}

```

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.

Ans:-

```
#include<stdio.h>

#include<conio.h>

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

    printf("Enter the length of the sides of a triangle ");

    scanf("%d%d%d",&a,&b,&c);

    if((a+b>c) && (b+c>a) && (c+a>b) )

        printf("Valid triangle");

    else

        printf(" A Invalid triangle");

    getch();
}
```

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

Ans:-

```
#include<stdio.h>
#include<conio.h>
int main()
{
    int a;
    printf("Enter the month number ");
    scanf("%d",&a);
    switch(a)
    {
        case 1:
        case 3:
        case 5:
        case 7:
        case 8:
        case 10:
        case 12:
            {
                printf("31 Days");
                break;
            }
        case 2:
            {
                printf("28 days");
            }
    }
}
```

```
        break;
    }
case 4:
case 6:
case 9:
case 11:
    {
        printf("30 Days");
        break;
    }
default :
    printf("You enter an invalid input");
}
getch();
}
```