



Chapter 10 & 11

/* Program - use of variable*/

```
#include<stdio.h>
int main()
{
    int a=10;
    float b=20.1;
    char c='a';
    printf("\n the value of a:=%d",a);
    printf("\n the value of b:=%f",b);
    printf("\n the value of c:=%c\n",c);
    return 0;
}
```

/* Program - Average of 3 numbers*/

```
#include<stdio.h>
int main()
{
    float first,second,third,avg;
    printf("\n Enter the value of first no.");
    scanf("%f",&first);
    printf("\n Enter the value of second no.");
    scanf("%f",&second);
    printf("\n Enter the value of third no.");
    scanf("%f",&third);
    avg=(first+second+third)/3;
    printf("Average:=%f",avg);
    return 0;
}
```

/* Program to calculate circumference of circle */

```
#include<stdio.h>
#define PI 3.14
int main()
{
    float r,cf;
    printf("\n Enter the value of radius.");
    scanf("%f",&r);
    cf=2*PI*r;
    printf("Circumference of circle with radius %f:=%f",r,cf);
    return 0;
}
```

/* Program to convert rupees into paise */

```
#include<stdio.h>
int main()
{
    float rupees,paise;
    printf("\n Enter the value of rupees.");
    scanf("%f",&rupees);
    paise=rupees*100.0;
    printf(" %f Rupees=%f paise\n",rupees,paise);
    return 0;
}
```



/* Program to convert centimeter into meter */

```
#include<stdio.h>
int main()
{
    float cm,meter;
    printf("\n Enter the value of centimeter.");
    scanf("%f",&cm);
    meter=cm/100.0;
    printf(" %f Centimeter=%f meter\n",cm,meter);
    return 0;
}
```

/* Program to find surface area of a sphere */

```
#include<stdio.h>
#define P printf
#define S scanf
#define PI 3.14
int main()
{
    float r,sarea;
    P("\n Enter the value of radius.");
    S("%f",&r);
    sarea= 4*PI*r*r;
    P(" Surface area of circle with radius %f=%f \n",r,sarea);
    return 0;
}
```

/* Program of swapping. */

```
#include<stdio.h>
int main()
{ int g1,g2,g3;
    printf("\n c.");
    scanf("%d%d",&g1,&g2);
    printf("\nBefore swapping value of g1=%d",g1);
    printf("\nBefore swapping value of g2=%d",g2);
    g3=g1;
    g1=g2;
    g2=g3;
    printf("\n After swapping value of g1=%d",g1);
    printf("\n After swapping value of g2=%d\n",g2);
    return 0;
}
```

/* Program of Pattern print (textbook ch- 10 Lab q.1)

```
#include<stdio.h>
#define P printf
int main()
{ P("*****\n");
    P("Name \t : \t\t*\n");
    P("School Name \t : \t\t*\n");
    P("Standard \t : \t\t*\n");
    P("Address \t : \t\t*\n");
    P(" * \t\t\t*\n");
    P("*****\n");
    return 0;
}
```



/* Program to calculate the square root of a given no. */

```
#include<stdio.h>
#include<math.h>
int main()
{
    float num,ans;
    printf("\n Enter the value of any number.");
    scanf("%f",&num);
    ans= sqrt(num);
    printf(" The Square root of %f =%f \n",num,ans);
    return 0;
}

for compilation: $ gcc sqrt.c -o sqrt -lm
for execution $./sqrt
```

/* Program for use of typedef (Calculate simple interest)*/

```
#include<stdio.h>
int main()
{
    typedef float real;
    real p,r,t,SI;
    printf("\nEnter the value of principal, rate and time in years-");
    scanf("%f%f%f",&p,&r,&t);
    SI=(p*r*t)/100;
    printf("Simple Interest :=%f\n",SI);
    return 0;
}
```

/* Program for use of comma and sizeof() operator */

```
#include<stdio.h>
int main()
{
    int a,b,c,size;
    c=(a=30,b=20,a/b);
    printf("\n The value of a:=%d\n, b:=%d\n, c:=%d\n",a,b,c);
    size=sizeof(c);
    printf("The size allocated to c variable :=%d\n",size);
    return 0;
}
```

/* Program for use of typecast (Calculation of cost of one item) */

```
#include<stdio.h>
int main()
{
    int cost,qty;
    float ans;
    printf("\n Enter the cost and quantity-");
    scanf("%d%d",&cost,&qty);
    ans=cost/(float)qty;
    printf("Cost of one item after type casting is %f\n",ans);
    return 0;
}
```



/* Program to use of conditional operator (? :) */

```
#include<stdio.h>
int main()
{
    int n1,n2,min;
    printf("\n Enter two values-");
    scanf("%d%d",&n1,&n2);
    min=(n1<=n2)?(n1):(n2);
    printf("\n The minimum value =%d\n",min);
    return 0;
}
```

Chapter 12

/*Program to use getch and putchar function */

```
#include<stdio.h>
int main()
{
    char grade;
    printf("Enter your grade-");
    grade=getchar();
    printf("Your grade is ");
    putchar(grade);
    return 0;
}
```

/* Program to use of a gets and puts function */

```
#include<stdio.h>
int main()
{
    char name[85];
    printf("\n Enter your state name:");
    gets(name);
    printf("You state name is:");
    puts(name);
    return 0;
}
```

/*Program to use of %[characters] specification */

```
#include<stdio.h>
int main()
{
    char n[25];
    printf("Enter your name containing only alphabets and spaces-");
    scanf("%[a-z A-Z]",n);
    printf("Your name is %s \n",n);
    return 0;
}
```

/*Program to use of %[^characters] specification*/

```
#include<stdio.h>
int main()
{
    char data[100];
    printf("Enter your details- );
    printf("Enter * to exit-\n");
    scanf("%[ ^*]",data);
    printf("Your details stored in variable is \n%s\n",data);
    return 0;    }
```



Chapter 13

/* Program to calculate Bigger number between 2 numbers */

```
#include<stdio.h>
int main()
{
    int a,b;
    printf("\n Enter two values.-");
    scanf("%d%d",&a,&b);
    if(a>b)
    {
        printf("%d is bigger number\n",a);
    }
    else
    {
        printf("%d is bigger number\n",b);
    }
    return 0;
}
```

/* Program to find even or odd number (DIY Leap year)*/

```
#include<stdio.h>
int main()
{
    int number;
    printf("\n Enter the value of any number.");
    scanf("%d",&number);
    if(number%2==0)
    {
        printf("\n The number =%d is even\n",number);
    }
    else
    {
        printf("\n The number =%d is odd\n",number);
    }
    return 0;
}
```

/*Program to check voting eligibility */

```
#include<stdio.h>
int main()
{
    int age;
    printf("Enter your age-");
    scanf("%d",&age);
    if(age>=18)
    {
        printf("You are %d years old so you are eligible for vote\n",age);
    }
    else
```



```

{
    printf("You are %d years old so you are not eligible for vote\n",age);
}
return 0;    }

```

/*Program to find positive or negative number */

```

#include<stdio.h>
int main()
{
    int no;
    printf("Enter any number-");
    scanf("%d",&no);
    if(no==0)
    {
        printf("%d is Zero\n",no);
    }
    else if(no>0)
    {
        printf("%d is Positive number \n",no);
    }
    else
    {
        printf("%d is Negative number \n",no);
    }
    return 0;    }

```

/* Program to find greater no. between 3 numbers */

```

#include <stdio.h>
int main()
{
    int n1,n2,n3;
    printf("\n Enter three-.");
    scanf("%d%d%d",&n1,&n2,&n3);
    if((n1>n2)&&(n1>n3))
    {
        printf("The greater number is =%d\n",n1);
    }
    else if((n2>n1)&&(n2>n3))
    {
        printf("The greater number is =%d\n",n2);
    }
    else
    {
        printf("The greater number is =%d\n",n3);
    }
    return 0;    }

```

**/*Program to find the student's division */**

```
#include<stdio.h>
int main()
{
    int per;
    printf("Enter your Percentage-");
    scanf("%d",&per);
    if(per>69)
        printf("First class with Distinction\n");
    else if(per>59)
        printf("First Class\n");
    else if(per>49)
        printf("Second Class\n");
    else if(per>39)
        printf("Third Class\n");
    else
        printf("Fail\n");
    return 0;
}
```

/* Program of display Weekday name*/

```
#include<stdio.h>
int main()
{
    char day;
    printf("\n Enter the first character of any day");
    day=getchar();
    switch(day)
    {
        case 's':
            printf("Today is Sunday\n");
            break;
        case 'm':
            printf("Today is Monday\n");
            break;
        case 't':
            printf("Today is Tuesday\n");
            break;
        case 'w':
            printf("Today is Wednesday\n");
            break;
        case 'h':
            printf("Today is Thrusday\n");
            break;
        case 'f':
            printf("Today is Friday\n");
            break;
    }
}
```



```
    case 'a':
    printf("Today is Saturday\n");
    break;
    default:
    printf("%c character not belong to week day letter\n",day);
    }
return 0;
}
```

/* Program of simple calculator using switch statement */

```
#include<stdio.h>
int main()
{
    int n1,n2,choice;
    printf("1 for Addition\n");
    printf("2 for Subtraction\n");
    printf("3 for Multiplication\n");
    printf("4 for Division\n");
    printf("5 for Modulus\n");
    printf("\n Enter two values-");
    scanf("%d%d",&n1,&n2);
    printf("Enter your choice within the range of 1 -5:");
    scanf("%d",&choice);
    switch(choice)
    {
        case 1:
        printf("Addition:=%d\n",(n1+n2));
        break;
        case 2:
        printf("Subtraction:=%d\n",(n1-n2));
        break;
        case 3:
        printf("Multiplication:=%d\n",(n1*n2));
        break;
        case 4:
        printf("Division:=%d\n",(n1/n2));
        break;
        case 5:
        printf("Modulus:=%d\n",(n1%n2));
        break;
        default:
        printf("Wrong choice);
        break;
    }
    return 0;
}
```




/* Program of check vowel or consonant using switch statement */

```
#include<stdio.h>
int main()
{
    char choice;
    printf("\n Enter any letter to find vowel or not\n");
    scanf(" %c",&choice);
    switch(choice)
    {
        case 'a':
        case 'A':
        case 'e':
        case 'E':
        case 'i':
        case 'I':
        case 'o':
        case 'O':
        case 'u':
        case 'U':
            printf("Entered %c letter is vowel \n",choice);
            break;
        default:
            printf("Entered %c letter is a consonant \n ",choice);
            break;
    }
    return 0; }
```

Chapter 14

/* Program of Counting using for loop*/

```
#include<stdio.h>
int main()
{
    int i;
    for(i=1;i<=10;i++)
        printf("%d\n",i);
    return 0;
}
```

/* Program of Counting using while loop*/

```
#include<stdio.h>
int main()
{
    int i=1;
    while(i<=10)
    {
        printf("%d\n",i);
        i++;
    }
    return 0; }
```



/* Program of Counting using do-while loop*/

```
#include<stdio.h>
int main()
{
    int i=1;
    do
    {
        printf("%d\n",i);
        i++;
    } while(i<=10);
    return 0;
}
```

/*Program to series 2,4,6,8..... (Even numbers)DIY Odd numbers */

```
#include<stdio.h>
int main()
{
    int i;
    for(i=2;i<=20;i=i+2)
    printf("%d\n",i);
    return 0;
}
```

/* Program to print table of any number according to user's choice */

```
#include<stdio.h>
int main( )
{
    int i,t,no;
    printf("Enter any number \n");
    scanf(" %d",&no);
    printf("Table of %d as follows\n",no);
    for(i=1;i<=10;i++)
    {
        t=i*no;
        printf("%d * %d = %d\n",no,i,t);
    }
    return 0;
}
```

/* Program of counting using while loop */

```
#include<stdio.h>
int main()
{
    int count=0;
    char choice;
    printf("enter your choice (y/n)?\n");
    scanf(" %c",&choice);
    while(choice=='y')
    {
        count++;
        printf("enter your choice (y/n)?\n");
    }
}
```



```
scanf(" %c",&choice);
}
printf("You enter in loop %d times\n",count);
return 0;
}
```

/* Program to display reverse counting (10,9,8,7....) using for loop */

```
#include<stdio.h>
int main()
{
    int i;
    for(i=10;i>=1;i--)
    printf("%d\n",i);
    return 0;
}
```

/*Program to print star pattern*/

```
#include<stdio.h>
int main()
{
    int i,j;
    for(i=1;i<=4;i++)
    {
        for(j=1;j<=i;j++)
        {
            printf("* "); // printf("%d ",i) or printf("%d ",j);
        }
        printf("\n");
    }
    return 0;
}
```

Chapter 15

/* Program to illustrate Array and initialized it at compile time */

```
#include<stdio.h>
int main()
{
    int i,number[5]={5,10,15,20,25};
    printf("The array elements are: \n");
    for(i=0;i<5;i++)
    printf("%d\n",number[i]);
    return 0;
}
```



/* Program of read and display 5 student marks & display average marks using Array*/

```
#include<stdio.h>
int main()
{
    int i,mark[5],total=0;
    for(i=0;i<5;i++)
        {
            printf("Enter marks[%d]",i);
            scanf("%d",&mark[i]);
        }
    for(i=0;i<5;i++)
        {
            total=total+mark[i];
            printf("The total marks is %d\n",total);
            printf("The average marks of student is %d\n",(total/5));
        }
    return 0;
}
```

Chapter 16

/* Program to display welcome message with 'No Argument No Return' */

```
#include<stdio.h>
void pl();
int main()
{
    pl();
    printf("Welcome to the world of C programing...\n");
    pl();
    return 0;
}
void pl()
{
    printf("===== \n");
}
```



/* Program to display Sum of two numbers with 'No Argument with Return' */

```
#include<stdio.h>
int sum( );
int main()
{
    int total;
    total=sum();
    printf("The Addition of two numbers: %d\n",total);
    return 0;
}
int sum()
{
    int a,b;
    printf("Enter Two numbers-");
    scanf("%d%d",&a,&b);

    return (a+b);
}
```

/*Program to display cube of a number with 'With Argument No Return' */

```
#include<stdio.h>
void cube(int );
int main()
{
    int n;
    printf("Enter any number-");
    scanf("%d",&n);
    cube(n);
    return 0;
}
void cube(int i)
{
    printf("The cube of %d number is %d\n",i,i*i*i);
}
```

/*Program to display square of a number with 'With Argument With Return' */

```
#include<stdio.h>
int sqrt(int );
int main()
{
    int n,ans;
    printf("Enter any number-");
    scanf("%d",&n);
    ans=sqrt(n);
    printf("The square of %d number is %d\n",n,ans);
    return 0;
}
int sqrt(int i)
{
    return(i*i);
}
```