

SS

Output:
program1

Enter a number : 5,8

The area is : 40

Program 1

(Start)



Initialize length
(l), breadth(b),
area(a)



Enter value of

l and b



$a = l \times b$



print a



(Stop)

Program 2

(Start)



Initialize variables and
declare a constant a pi



Enter value of r



$$v = \frac{4}{3} \cdot \pi \cdot r^3$$



print v



(Stop)

Program 2:

Enter the value : 7

The volume is 1436.026733

PRACTICAL NO.1

Aim-

Program to understand the basic datatype and input/output

Program 1: Area of Rectangle

```
#include <stdio.h>
#include <conio.h>
void main()
{
    clrscr();
    int l, b, area;
    printf("Enter the number");
    scanf("%d %d", &l, &b);
    area = l * b
    printf("The area is %d", area);
    getch();
}
```

Program 2: Volume of sphere.

```
#include <stdio.h>
#include <conio.h>
void main()
{
    float r, v, pi;
    printf("Enter numbers:");
}
```

```
scanf ("%f", &r);
pi = 3.14;
v = 4.0 / 3.0 * pi * r * r * r;
printf ("The volume is %.f", v);
getch();
}.
```

PROGRAM 3: Average of Three numbers

```
#include <stdio.h>
#include <conio.h>
void main()
{
    float a, b, avg;
    printf ("Enter the number:");
    scanf ("%f %f %f", &a, &b, &c);
    avg = (a+b+c)/3;
    printf ("Avg %.f", avg);
    getch();
}
```

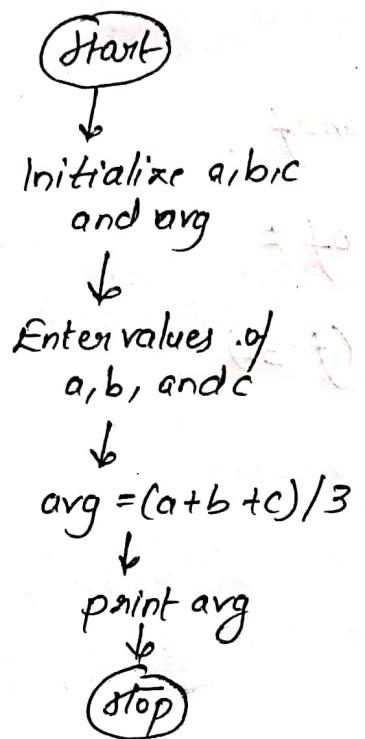
Program 4: Convert temperature from celsius to fahrenheit.

```
#include <stdio.h>
#include <conio.h>
void main()
{
    float cf:
```

Revised
output :

Program 3: Enter the number : 7, 9, 2

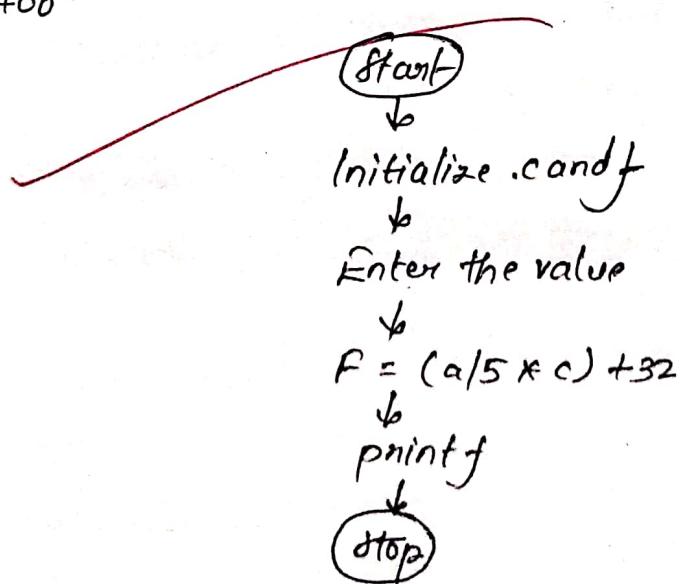
Arg: 6.00



Output

Enter the value of radius : 3

Fo = 37.400



Program 5
Enter the value of F = 80

$$C = 26.6$$



Initialize c and f



Enter value of F



$$c = (5/9) * (f - 32)$$



print 'C'



```
printf ("Enter value C'');  
scanf ("%f", &c);  
f = (c*9/5) + 32  
printf ("F: %.f", f);  
getch();  
3.
```

Program 5 : Convert temperature from F to C.

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

```
#include <conio.h>
```

```
void main ()
```

```
{
```

```
float c,f;
```

```
printf ("Enter the value of F:'");
```

```
scanf ("%f", &f);
```

~~```
c = (5.0/9.0)* (f-32)
```~~~~```
printf ("%.2f", c);
```~~~~```
getch();
```~~~~```
3.
```~~

89
11/02

PRACTICAL 2:

Aim-

Programs on operation and expression

Program 1-

include <stdio.h>

include <conio.h>

void main()

{

int a, b, c, d;

a = 15, b = 10

printf ("\\n a = %.d - b = %.d", a, b);

c = ++a - b;

d = b + +a;

printf ("\\n a = %.d, b = %.d, c = %.d, d = %.d", a, b, c, d);

c = a % b.

d = b + +a;

printf ("\\n a mod b: %.d", c);

printf ("\\n a divided by b: %.d", d);

getch()

}

output:

program

$a=15, b=10$

$a=16, b=11, c=6, d=26$

$a \bmod b : 5$

a divided by $b : 1$

Start



Initialize a, b

and d



b

$a=15$

$b=10$



print a and b



$c = ++a - b$

$d = b ++a$



print a, b, c and d



$e = a \% b$

$d = a / b$



print c and d

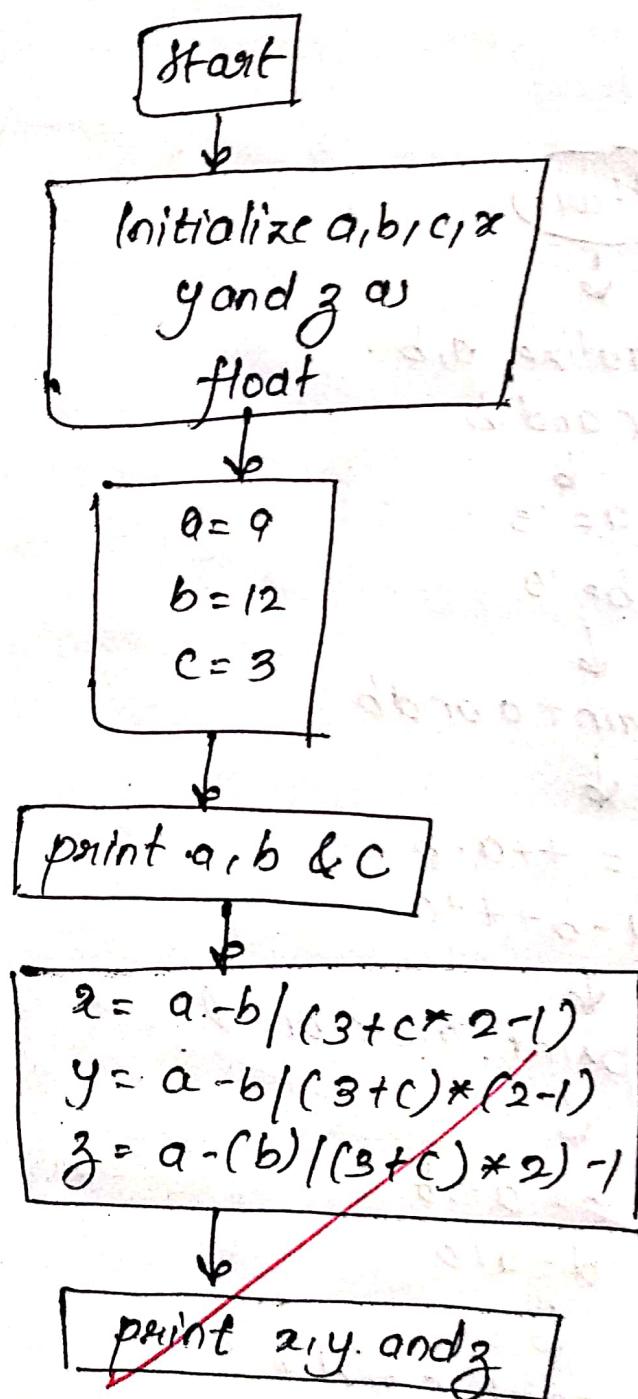


Stop

O/P

PROGRAM 2

$$a = 9.000000 \quad b = 12.000000 \quad c = 3.000000$$
$$x = 10.000000 \quad y = 7.000000 \quad z = 4.000000$$



PROGRAM 2 -

```
#include <stdio.h>
#include <conio.h>
void main()
{
    clrscr();
    float a,b,c,x,y,z;
    a = 9 - b / 3 + c * 2 - 1;
    y = a - b / (3 + c) * (2 - 1);
    z = a - (b / (3 + c)) * 2 - 1;
    printf ("In : x = %f : y = %f : z = %f" , x, y, z);
    getch();
}
```

PROGRAM 3 :

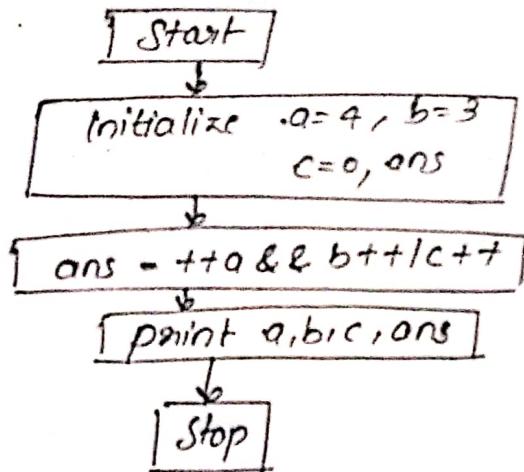
```
#include <stdio.h>
#include <conio.h>
void main()
{
    clrscr();
    int a = 4, b = 3, c = 0, ans;
    ans = ++a && ++b + !c++;
    printf ("In : a = %d , b = %d , c = %d , ans = %d" , a, b, c, ans);
    getch();
}
```

PROGRAM 4-

```
#include <stdio.h>
#include <conio.h>
void main()
{
    clrscr();
    int a=5, b, c;
    a = a++ * a - b;
    printf ("In a=%d , b=%d , c=%d . a=%d \n", a, b, c, a);
    getch()
}
```

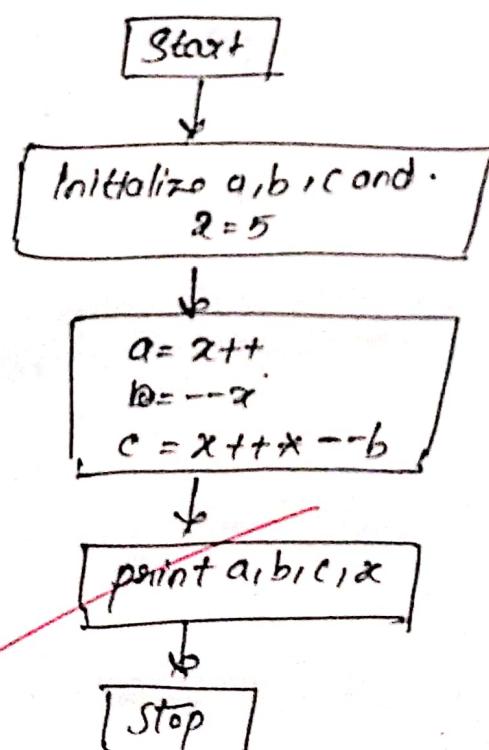
O/P

PROGRAM 3-

 $a=5, b=4, c=1, ans=1$ 

O/P

PROGRAM 4-

 $a=5, b=4, c=20, x=6$ 

PROGRAM 1 -

O/P

Enter value of = 12
12 is even.

Enter value = 51

51 is odd.

PROGRAM 2 -

O/P

Enter year 2001

2001 is not leap year

Enter the year 2004.

It is a leap year.

Ranjan
11/15/2

PRACTICAL NO.3

Aim - Programs on decision making and branching

PROGRAM 1 -

Check whether number is odd or even;

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

void main()
{
    clrscr();
    int n, r;
    printf ("Enter value .\n");
    scanf ("%d", &n);
    r = n%2;
    if (r==0)
        printf ("\n %d. is Even", n);
    else
        printf ("\n %d is odd", n);
    getch();
}
```

PROGRAM 2 :

Check if entered year is leap year or not.

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

void main()
```

```
class();
int x,y;
printf ("In Enter year");
scanf ("%d", &y);
if (y%4==0)
    printf ("In %d is a leap year", y);
else
    printf ("In %d is not leap year", y);
getch();
```

OIP
PROGRAM 3.

Enter alphabet;
i is vowel

Enter alphabet:
s is not a consonant.

PROGRAM 3 -

Check whether entered alphabet is vowel or consonant

```
#include <stdio.h>
#include <conio.h>
void main()
{
    class();
    char ch;
    printf ("In Enter alphabet");
    ch = getch();
    if (ch == 'a' || ch == 'e' || ch == 'i' || ch == 'o' || ch == 'u' ||
        ch == 'A' || ch == 'E' || ch == 'I' || ch == 'O' || ch == 'U')
        printf ("In %c is vowel", ch);
}
```

Program 4:

O/P
Enter value :: 5 9 1
9 is largest.

31

```
else  
printf ("In %c is constant", ch);  
getch();  
3.
```

PROGRAM 4-

Print largest of 3 numbers using nested if

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

```
#include <conio.h>
```

```
void main ()
```

```
{
```

```
clrscr();
```

```
int a, b, c;
```

```
printf ("Enter values :: ");
```

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

```
if (a > b)
```

```
{
```

```
if (a > c)
```

```
{
```

```
printf ("In %d is largest", a);
```

```
}
```

```
else,
```

```
{
```

```
if (b > c)
```

```
{
```

```
printf ("In %d is largest", b);
```

```
}
```

18

```
#include <iostream.h>
#include <conio.h>
void main()
{
    int a, b, c;
    cout << "Enter three numbers : ";
    cin >> a >> b >> c;
    if (a > b & a > c)
        cout << "a is largest";
    else if (b > c)
        cout << "b is largest";
    else
        cout << "c is largest";
    getch();
}
```

PROGRAM 5:

Program to calculate electric bill rates using else if ladder.
unit consumed

Rate

1-100 Rs 2 per unit

101-200 ₹ 200 + ₹ 4 per unit & above

201-300 ₹ 600 + ₹ 5 / unit & above

301-above ₹ 1000 + ₹ 7 / per unit & above

```
#include <iostream.h>
#include <conio.h>
void main()
{
    clrscr();
    int eno, unit, amount;
```

PROGRAM 5.

O/P

Enter consumer no. & unit consumed : 1 267

cust no. 1

unit consumed : 267

bill amount : 935.

```
printf ("In Enter consumer no & unit consumed :");
```

```
scanf ("%d %d", &cno, &unit);
```

```
if (unit <=100 && unit >=0)
```

```
{
```

```
amount = unit * 2;
```

```
}
```

```
else if (unit <=200 && unit >100)
```

```
{
```

```
amount = 200 + (unit - 100) * 4;
```

```
}
```

```
else if (unit <=300, && unit >200)
```

```
{
```

```
amount = 600 + (unit - 200) * 5;
```

```
}
```

```
else if (unit >300) {
```

```
amount = 100 + (unit - 300) * 7;
```

```
}
```

```
else
```

```
{
```

```
printf ("In Error");
```

```
}
```

```
printf ("In custo no. %d", cno);
```

```
printf ("In unit consumed %d", unit);
```

```
printf ("In bill amount %d", amount);
```

```
getch();
```

```
.
```

PROGRAM 6:

Program to enter single digit decimal numbers from keyboard
and print that digit in word form,

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

```
#include <conio.h>
```

```
void main()
```

```
{
```

```
clrscr();
```

```
int n;
```

```
printf("In Enter single digit decimal no:");
```

```
scanf("%d", &n);
```

```
If (n==0)
```

```
printf("In zero");
```

```
else if (n==1)
```

```
else if (n==2)
```

```
printf("In two");
```

```
else if (n==3)
```

```
printf("In three");
```

```
else if (n==4)
```

```
printf("In four");
```

```
else if (n==5)
```

```
printf("In five");
```

```
else
```

```
printf("In error");
```

```
getch();
```

```
}
```

PROGRAM 6.

O/P

Enter single digit decimal no : 1
ONE

Enter single ~~lit~~ decimal -15

Error.

Program 7:

0/1
Addition
Subtraction
Multiplication
Division
Exit

Enter your choice = 3
Enter value of a & b : 5
10

$$5 * 10 = 50.$$

CASE2:
 $a = a - b$
printf ("In T.d T.d = T.d ", a, b, n);
break;
CASE3:
 $a = a * b$
printf ("In T.d T.d = T.d ", a, b, n);
break;
CASE4:
 $a = a / b$
printf ("In T.d T.d T.d = T.d ", a, b, n);
break;
default:
printf ("In No operation");
{ getch();
}

Program 7: Program to perform add, sub, multi and division using switch case.

```
#include <iostream.h>
#include <conio.h>
void main()
{
    clrscr();
    int a, b, n, choice;
    printf("In selected choice");
    printf("In Add ");
    printf("In Sub ");
    printf("In Multiplication ");
    printf("In Division ");
    printf("In Exit ");
    scanf("In %d", &choice);
    if (choice >= 1 & & choice <= 4)
    {
        printf("In Enter value a and b :");
        scanf("%d %d", &a, &b);
        switch (choice)
        {
            case 1:
                n = a + b;
                printf("In T.d + T.d + T.d = T.d ", a, b, n);
                break;
        }
    }
}
```

8/10

78

PRACTICAL No. 4. *Program to understand looping structures*

Aim - Programs to understand looping structures.

→ while loop

Program 1 - A program to print even numbers from 1 to 100

#include <stdio.h>

#include <conio.h>

void main()

{

int i, n;

i=1

while (i<=100)

{

n = i%2

if (n==0) .

{ printf ("%d", i); }

}

i+=i

}

getch(); }

Program 2 - Print numbers between 1 to 'n' which is divisible by

#include <conio.h>

#include <stdio.h>

void main()

{

P1 O/P
2
4
6
8
10
:
100.

Program 2
O/P -
Enter value of n=70

7
14
21
28
35
42
49
56
63
70

36

Program 3 -

O/P

1 2
1 2
1 2 3
1 2 3 4
1 2 3 4 5.

int i, n;
printf ("In Enter value of n ");
scanf ("%d", &n);
i=1;
while (i<=n)
{
 a = i%7;
 if (a==0)
 {
 printf ("In %d", i);
 }
 i++;
}
getch();

Program 3: Program to obtain the following O/P

1
1 2
1 2 3 4
1 2 3 4 5

```
#include <stdio.h>
#include <conio.h>
{
    int i, k;
    i=1;
    while (i<=5)
    { k=i;
```

37

```

while (k<=1)
{
    printf ("%d", k);
    ++k;
}
printf ("%d", k);
i++;
}
getch();
}

```

Program 4 - Write a program to print following O/P

1
 2 2
 3 3 3
 4 4 4 4
 5 5 5 5 5

```

#include <stdio.h>
#include <conio.h>
void main()
{
    int i, k;
    i = 1;
    while (i <= 5)
    {
        k = 1;
        while (k <= i)
        {
            printf ("%d", i);
            ++k;
        }
    }
}

```

Program 4

O/P
 1
 2 2
 3 3 3
 4 4 4 4
 5 5 5 5 5

DO whileProgram 1

Enter value of n = 20
 Sum of all even numbers between 1 to 20 = 110

```

3
printf ("\n");
i++;
} getch ();
3.
  
```

⇒ DO WHILE -

Program 1 - Program to print sum of all even numbers between

#include <stdio.h>

#include <conio.h>

void main()

{

int i, n, s;

printf ("\nEnter value of n: ");

scanf ("%d", &n);

i=1;

s=0;

do

{

n = i%2;

if (n==0)

{

s = s+i;

}

i++;

}

while (i<=n);

`printf("The sum of all even numbers between 1 to %d = %d", n, s);`

`getch();
}`

→ FOR LOOP

Program 1 - Write program to obtain the following o/p

`*
**

*****`

`#include <stdio.h>`

`#include <conio.h>`

`void main()
{`

~~`int i, k;
for (i=1; i<=5; i++)
{ for (k=1; k<=i, k++)
printf("*");
}
printf("\n");
}`~~

`getch(); }`

For loop

P1 - O/P

`*`
`**`
`***`
`*****`

P2 - O/P

~~`1 2 3 4 5
2 3 4 5
3 4 5
4 5
5`~~

P3
O/P
Fibonacci Series -

```
0
1
1
2
3
5
8
13
21
34
55
89
144
233
377
610
987
1597
2587
```

Program 2 - Program to print the following o/p

```
1 2 3 4 5
```

```
2 3 4 5
```

```
3 4 5
```

```
4 5
```

```
5
```

```
#include <stdio.h>
#include <conio.h>
void main()
{
    int i, k;
    for (i=5, i>=1, i--)
    {
        for (k=1, k<=i, k++)
        {
            printf ("%d", k);
        }
        printf ("\n");
    }
    getch();
}
```

Program 3 - Fibonacci series of first 20 terms.

```
#include <stdio.h>
#include <conio.h>
void main()
{
    int a, b, i, f;
    printf ("\n %d : fibonacci series : \n");
    a = 1;
```

11

```
b=0;  
printf ("In 7.d ",b);  
for (i=3,i<=20,i++)  
{  
    f=a+b;  
    printf ("In 7.d ",f);  
    a=b;  
    b=f;  
}  
getch();  
}.
```

11/2

P1 O/P
Enter 10 data of array:

1 2 3 4 5 6 7 8 9 10 11

Largest = 11

P2

O/P

Enter 10 data of array :

12 56 90 7 1 46 77 60 10 34

smallest : 7

PRACTICAL NO. 5.

Aim - To understand the concept of Arrays.

ONE DIMENSIONAL ARRAY:

Program1 - Find the largest number in an array of 10 numbers

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

```
#include <conio.h>
```

```
void main()
```

```
{
```

```
int i, l, a[10];
```

```
printf ("In Enter 10 data of array :");
```

```
for (i=0; i<10, i++)
```

```
{
```

```
scanf ("%d", &a[i]);
```

```
} l=a[0]
```

```
for (i=1, i<10; i++)
```

```
{ if (l>a[i])
```

```
l=a[i];
```

```
}
```

```
}
```

```
printf ("In largest : %d", l);
```

```
getch();
```

```
}
```

Program2 - Find the smallest number in an array of 10 elements

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

```
#include <conio.h>
```

```
void main()
```

```
{
```

84

```
int i, s, a[10];
printf ("In Enter 10 data of array : ");
for (i=0; i<10; i++)
{
    scanf ("%d", &a[i]);
    s = a[i];
    for (j=i+1; j<10; j++)
    {
        if (s>a[j])
        {
            s = a[j];
        }
    }
    printf ("In smallest : %d", s);
}
getch();
```

Program 3: Find number of positive number present in an array
of 10 data

```
#include <stdio.h>
#include <conio.h>
void main()
{
    int i, c, a[10];
    printf ("In Enter 10 data secoreny ");
    for (i=0; i<10; i++)
    {
        scanf ("%d", &a[i]);
    }
}
```

```
#opp
Enter 10 data of array:
1 2 3 4 -5 6 7 -8 -9, -10
No. of positive no = 6
```

P4

#O/P
Enter 10 data of array:

-1 2 3 4 -5 6 -7 8 9 -10

No. of negative no = 5

```
c=0;
for (i=0, i<10, i++)
    if (a[i]>0)
        c=c+1;
printf ("In No. of positive no - %d", c);
getch();
```

Program 4 - Find number of negative number present in an array of 10 data.

```
#include <stdio.h>
#include <conio.h>
void main()
{
    printf ("Enter 10 data of array");
    for (i=0, i<10, i++)
    {
        scanf ("%d", &a[i]);
    }
    c=0;
    for (i=0, i<10, i++)
    {
        if (a[i]<0)
            c=c+1;
    }
    printf ("In No. of negative no - %d", c);
    getch();
}
```

Program 5-
Write a program to find numbers of odd no. present in array
of 10 data:

```
#include <stdio.h>
#include <conio.h>
void main()
{
    int i, a, c[10];
    printf ("In Enter 10 data of array :");
    for (i=0, i<10, i++)
    {
        scanf ("%d", &a[i]);
    }
    c=0;
    for (i=0, i<10, i++)
    {
        if (a[i] % 2 == 1)
            c++;
    }
    printf ("In No. of odd no = %d", c);
    getch();
}
```

P5
#O/P
Enter 10 data of array -
1 2 3 4 5 6 7 8 9 10
No. of odd no. 5.

P6
#O/P
Enter 10 data of array -
1 2 3 4 5 6 7 8 9 10
No. of even no. 5.

PROGRAM - 6

Find no. of even numbers.

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

```
#include <conio.h>
```

```
void main()
```

```
{
```

```
int i, n, c, a[10];
```

```
printf ("In Enter 10 data of array :");
```

```
for (i=0, i<10, i++)
```

```
{
```

```
printf ("%d ", &a[i]);
```

```
}
```

```
c=0;
```

```
for (i=0, i<10, i++)
```

```
{
```

```
    a=a[i] % 2;
```

```
    if (a==0)
```

```
        c++;
```

```
}
```

```
printf ("In No of even no = %d", c);
```

```
getch();
```

```
3.
```

52

Program 7 - Write a program to find average of 10 data of array.

```
#include <stdio.h>
#include <conio.h>
void main()
{
    int a[10], i, s;
    float avg;
    printf ("Enter 10 data of array");
    for (i=0, i<10, i++)
    {
        scanf ("%d", &a[i]);
    }
    s=0;
    for (i=0, i<10, i++)
    {
        s=s+a[i];
    }
    avg = s/10;
    printf ("SUM = %d", s);
    printf ("Average = %.2f", avg);
    getch();
}
```

Program 7

#O/P

Enter 10 data of array;

1 2 3 4 5 6 7 8 9 10

sum = 55

average = 5.500000

O/P

Enter elements of array

2 6 5 1 4 3

Sorted array in ascending order

1 2 3 4 5 6

Program 8 - To sort an array of 5 data in ascending order.

#include <stdio.h>

#include <conio.h>

void main()

{

int a[5], i, k, t;

printf ("In Enter 5 data into array");

for (i=0 ; i<5 , i++)

{

scanf ("%d", &a[i]);

}

for (i=0 , i<5 , i++)

{

for (k = i+1 - k<5 , k++)

{ if (a[i] > a[k])

{ t = a[i];

a[i] = a[k];

a[k] = t;

}

{

3 printf ("In sorted array");

for (i=0 , i<5 , i++)

{ printf ("%d", a[i]);

3 getch();

3.

Program9 - Sort an array of 5 data in decreasing order.

```
#include <stdio.h>
#include <conio.h>
void main()
{
    int i, k, t, a[5];
    float avg;
    printf("Enter element into array a:");
    for (i=0; i<5; i++)
    {
        scanf("%f", &a[i]);
    }
    for (i=0, j=5; i<5; i++)
    {
        for (k=j+1; k<5; k++)
        {
            if (a[i] < a[k])
            {
                t = a[i];
                a[i] = a[k];
                a[k] = t;
            }
        }
    }
    printf("In sorted array:");
    for (i=0; i<5; i++)
    {
        printf("\t%5.2f", a[i]);
    }
    getch();
}
```

O/P

Enter element of array a:

5 6 7 8 9

Sorted array : 9 8 7 6 5

#O/P

(P9)

Enter element matrix x:

0 1 2 3 4 5 6 7 8

Enter element of matrix y:

0 1 2 3 4 5 6 7 8

Matrix z: 0 2 4
6 8 10
12 14 16

Two DIMENSIONAL ARRAY,

Program - To add two matrix each size 3x3

#include <stdio.h>

#include <conio.h>

void main()

{

int x[8][8], y[3][3], z[3][3];

int n, c;

printf ("In Enter elements of matrix x: ");

for (n=0, n<3, n++)

{

for (c=0, c<3; c++)

{

scanf ("%d", &x[n][c]);

}

{

printf ("In Enter element of matrix y: ");

for (n=0, n<3, n++)

{

for (c=0, c<3; c++)

{

scanf ("%d", &y[n][c]);

}

{

for (n=0, n<3, n++)

{

for (c=0, c<3, c++)

{

z[n][c] = x[n][c] + y[n][c];

12

```
printf ("%d", z[n][c]);  
}  
printf ("\n");  
}  
getch();  
}
```

Program 2 - Write a program to do matrix multiplication

```
#include <stdio.h>  
#include <conio.h>  
void main()  
{  
    int x[3][3], y[3][3], z[3][3];  
    int n, c, k, t;  
    printf ("In Enter element of matrix x: ");  
    for (n=0, n<3, n++)  
    {  
        for (c=0, c<3, c++)  
        {  
            scanf ("%d", &x[n][c]);  
        }  
    }  
    printf ("In Enter element of matrix y: ");  
    for (n=0, n<3, n++)  
    {  
        for (c=0, c<3, c++)  
        {  
            scanf ("%d", &y[n][c]);  
        }  
    }
```

O/P

(x) Enter element - 1 2 3 4 5 6 7 8 9

(y) Enter element - 1 2 3 4 5 6 7 8 9

Matrix z -

| | | |
|-----|-----|-----|
| 30 | 36 | 42 |
| 66 | 81 | 96 |
| 102 | 126 | 150 |

```
printf ("In Enter elements of matrix y:");
for (r=0; r<3; r++)
{
```

```
    scanf ("%d", &y[r][c]);
}
```

```
for (r=0, r<3; r++)
{
```

```
    for (c=0; c<3; c++)
{
```

```
        t=0;

```

```
        for (k=0, k<3; k++)
{
```

```
            t=t+x[r][k]*y[k][c];
        }
```

```
        z[r][c]=t;
    }
```

```
printf ("In Matrix z:");

```

```
for (r=0, r<3, r++)
{
```

```
    for (c=0; c<3; c++)
{
```

```
        printf ("It %d", z[r][c]);
    }
```

```
    printf ("\n");
}
```

```
getch();
}
```

Program 3 - Write a program to enter following table of marks
and find row wise height.

| Roll No. | Psy | Chem | Maths | Eng | Total |
|----------|-----|------|-------|-----|-------|
| 1 | 10 | 15 | 12 | 14 | 51 |
| 2 | 19 | 18 | 16 | 17 | 70 |
| 3 | 17 | 20 | 11 | 14 | 62 |
| 4 | 18 | 16 | 19 | 12 | 65 |
| 5 | 10 | 12 | 11 | 19 | 52 |

```
#include <stdio.h>
#include <conio.h>
void main()
{
    int, n, c, h; m[5][4];
    printf("\nEnter table marks:");
    for (n=0, n<5, n++)
    {
        for (c=0, c<4, c++)
            scanf(" %d", &m[n][c]);
    }
    h = m[n][0];
    for (c=1, c<4, c++)
    {
        if (h < m[n][c])
            h = m[n][c];
    }
}
```

#O/P

Enter table marks 1 2 3 4 5 6 7 8 9 10
 11 12 13 14 15 16 17 18 19 20

Height in row : 0:4

Highest row 1:0

Highest row 2:12

Highest row 3:16

Highest row 4:20

O/P

Enter table marks 1 2 3 4 5 6 7 8 9
 10 11 12 13 14 15 16 17 18 19 20

Lowest in column no 4: 17

```
printf("In highest row %d is %d", n, h);
g
getch();
g
```

Program 4-
 WAP to find columnwise lowest

```
#include <conio.h>
#include <stdio.h>
void main()
{
  int a, c, l, m[5][4];
  printf("Enter table marks");
  for (a=0, a<5, a++)
  {
    for (c=0, c<4, c++)
      scanf("%d", &m[a][c]);
    if (l>m[a][c])
      l=m[a][c];
  }
  printf("In lowest column %d : %d", c, l);
  getch();
}
```

Programs

WAP to print columnwise addition

```
#include <conio.h>
#include <stdio.h>
void main()
{
    int r, c, total, m[5][4];
    printf ("In Enter table of marks");
    for (r=0, r<5, r++)
    {
        for (c=0, c<4, c++)
        {
            scanf ("%d", &m[r][c]);
        }
        for (c=0, c<4 ; c++)
        {
            total = 0;
            for (r=0, r<5, r++)
            {
                total = total + m[r][c];
            }
            printf ("In Total of columns is %d", c, total);
        }
    }
    getch();
}
```

O/P

Enter the table marks

1
2
3
4

Total Table no. of 0 column is 4
Total Table no. of 1 column is 6.

8
11/ovr

Practical No.6.

Aim - Programs using string function.

Program 1 - To read string of words using scanf();

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

```
#include <conio.h>
```

```
#include <string.h>
```

```
void main()
```

```
{
```

```
char w1[20], w2[20], w3[20], w4[20]
```

```
printf ("In Enter text of words");
```

```
scanf ("%s, %s, %s, %s", &w1, &w2, &w3, &w4);
```

```
printf ("In word 1 = %s", w1);
```

```
printf ("In word 2 = %s", w2);
```

```
printf ("In word 3 = %s", w3);
```

```
printf ("In word 4 = %s", w4);
```

```
getch();
```

```
}
```

Program 2 - Read line of text using putchar.

```
#include <string.h>
```

```
#include <conio.h>
```

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

```
void main()
```

```
{
```

```
char city [10] "Parks";
```

```
int k;
```

```
for (k=0, k<5, k++)
{
    putchar (city[k]);
    printf ("\n");
}
getch();
```

Program 3 - Read line of text: using gets()

```
#include <stdio.h>
#include <conio.h>
#include <iostream.h>
void main()
{
    char l[20];
    printf ("In Enter line of text ");
    gets (l);
    puts (l);
    getch();
}
```

Program 4 - Read line of text using getch()

```
#include <stdio.h>
#include <conio.h>
#include <iostream.h>
void main()
{
    char l[80]; p;
```

#o/p

Enter line of text - HelloWorld
Hello World

#o/p

Enter line of text = Shrinchan
My name is Shrinchan.

O/P
Enter string - Hello
Reverse string - olleh.

```
printf ("In Enter line of text ");
do
{
    p = getchar ();
    l[k] = p;
    ++k;
}
while (p != '\n');
l[k] = '\0';
printf ("In .%s", l);
getch();
}
```

Program 5 - Reverse a string using strok();

```
#include <stdio.h>
#include <conio.h>
#include <string.h>
void main ()
{
    char h[10];
    printf ("In Enter string :");
    scanf ("%s", h);
    strok (h);
    printf ("In Reverse string %s", h);
    getch();
}
```

Practical 7

Programs using USER-defined function.

Program 1 -

Area & circumference of a circle.

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

```
#include <conio.h>
```

```
void circle()
```

```
{
```

```
circle();
```

```
getch();
```

```
}
```

```
void circle(void)
```

```
{
```

```
int r;
```

```
float a,c;
```

```
printf ("In Enter value of r :");
```

```
scanf ("%d", &r);
```

```
a = 3.14 * r * r
```

```
b = 2 * 3.14 * r
```

```
printf (" Area = %.2f ", a)
```

```
printf (" Circumference = %.2f ", c);
```

```
g
```

O/P

Enter the value of r = 5

Area = 78.5000

Circumference = 31.400000

O/P
Enter num = 5
Entered num = 5.

Program 2 -
Print digit of entered numbers

```
#include <stdio.h>
#include <conio.h>
int get_no(void);
void main()
{
    int m;
    m = get_no();
    printf ("\n Entered num = %d", m);
    getch();
}
int get_no(void)
{
    int num;
    printf (" Enter num ");
    scanf ("%d", &num);
    return (num);
}
```

Program 4 Arrange 3 entered numbers

```
#include <stdio.h>
#include <conio.h>
void average (int sum);
void sum (int a, int b, int c);
void main()
```

```
2  
int x,y,z;  
printf ("In Enter value of x,y,z");  
scanf ("%d %d %d", &x, &y, &z);  
sum (x,y,z);  
getch();  
}  
  
void sum (int a, int b, int c);  
{int s;  
s=a+b+c;  
average (s);  
}  
  
void average (int sum)  
{  
float avg;  
avg = sum/3 -0;  
printf ("In Average %.2f", avg);  
}
```

Program 5-
Factorial of number using RECURSION.

```
#include <stdio.h>  
#include <conio.h>  
int factorial (int m);  
void main ()  
{  
int n, fact;
```

#O/P
Enter value of x,y,z : 4 6 9
Average = 6.333333.

```

printf ("In Enter value of x");
scanf ("%d", &x);
fact = factorial (x);
printf ("In Factorial of %d = %d", x, fact);
getch();
}

int factorial (int n);
{
    int f;
    if (n == 1)
        return (1)
    else
        f = n * factorial (n - 1);
    return (f);
}

```

8
11/02

PRACTICAL No. 8:

Aim - Programs on structure.

Program - Student structure.

```
#include <stdio.h>
#include <conio.h>
struct student {
    int rollno;
    char name[20];
    int total;
};

void main()
{
    struct student x;
    printf("Enter name, rollno, total stud :");
    printf(" %d %s %d", &x.roll, &x.name, &x.total);
    printf("Roll no = %d", x.rollno);
    printf("Name = %s", x.name);
    printf("In total = %d", x.total);
    getch();
}
```

O/P

Enter rollno, name, total student : 1825
Sk
100
Rollno: 1825
Name: Sk
Total: 100

Program 2 - Employee Comparison

```
#include <stdio.h>
#include <conio.h>
struct employee {
    int eno, salary;
};

void main()
{
    struct employee n, y;
    printf ("In Enter eno & salary :");
    scanf ("%d %d", &n.eno, &n.salary);
    printf ("In Enter eno and salary");
    scanf ("%d %d", &y.eno, &y.salary);
    if (n.eno == y.eno & n.salary == y.salary)
        printf (" both are equal");
    else
        printf (" both are unequal");
    getch();
}
```

O/P

Enter eno .& salary : 5 20000
 Enter eno & salary 5 20000
 both are equal

Enter eno & salary : 5 20000
 Enter eno & salary : 2 50000
 both are unequal

Program 3 -
Fruit structure

```
#include <stdio.h>
#include <conio.h>
struct fruit {
    char name[20];
    int price, qty, total;
}
void main()
{
    struct fruit f[5];
    int k;
    printf("Enter name, price & qty :");
    for (k=0, k<5, k++)
    {
        scanf("%s %d %d", &f[k].name, &f[k].price, &f[k].qty);
        f[k].total = f[k].price * f[k].qty;
    }
    for (k=0, k<5, k++)
    {
        printf("In name = %s , price = %d , qty = %d ", f[k].name,
               f[k].price, f[k].qty);
    }
    getch();
}
```

#O/P

Enter name , price & qty :

Apple 20 5

Mango 15 3

Banana 50 9

name = apple , price = 20 , qty = 5

name = mango , price = 15 , qty = 3

name = Banana , price = 50 , qty = 9

Program 4 -
Cricketers & their teams -

```
#include <stdio.h>
#include <conio.h>
#include <string.h>
struct cricket
{
    char pname[20], tname[20];
    int average;
};

void main()
{
    struct cricket p[5], t;
    int i, k, s;
    printf("Enter records of players");
    for (i=0, i<5, i++)
    {
        scanf("%s %s %s %d", &p[i].name, &p[i].tname, &p[i].average);
    }
    for (i=0, i<4, i++)
    {
        for (k=i+1, k<5, k++)
        {
            if (strcmp(p[i].tname, p[k].tname) > 0)
            {
                p[i] = p[k];
                p[k] = t;
            }
        }
    }
    printf("Teamwise player name\n");
    for (i=0, i<5, i++)
    {
        printf("%s %s %s %d\n", p[i].name, p[i].tname, p[i].average);
    }
}
```

Records of players

| | | |
|----------|-------|-----|
| MS Dhoni | India | 100 |
| Yuvraj | India | 50 |
| Rohit | India | 70 |

Records Player Names

| | | |
|----------|-------|-----|
| MS Dhoni | India | 100 |
| Yuvraj | India | 50 |
| Rohit | India | 70 |

Program 5 - Structure within structure

```
#include <stdio.h>
#include <conio.h>
struct employee
{
    int salary;
    struct employee
    {
        int id;
    } s;
    char name[10];
    struct employee h2;
} s;
void main()
{
    int i;
    struct employee s = {22, "Sk", 500};
    printf("In Roll no = %d It Name = %s It salary = %d ;\n", s.id, s.name, s.h2.salary);
    getch();
}
```

O/P 1

Rollno. 25

Name - Sk Salary - 5000/-

~~11/02~~

O/P

```

a = 12
b = 4
x = 42
y = 42

```

Practical No. 9

Aim- WAP on pointers in c-language

Program 1 -

#include <stdio.h>

#include <conio.h>

void main()

{

int a=12, b=4, x, y * p * q;

p=&a;

q=&b;

x = *p * q = 6;

y = 4 * (*p - *q) + 10;

printf ("In a = %d", a);

printf ("In b = %d", b);

printf ("In x = %d", x);

printf ("In y = %d", y);

getch();

}

Program 2 -

#include <stdio.h>

#include <conio.h>

void main()

{

int x[5] = {10, 20, 30, 40, 50};

int *p; i, sum=0;

p = &x[10];

```
for(i=0, i<5, i++)
{
    sum = sum + *p;
    p = p+1;
}
printf("In sum = %d", sum);
getch();
```

O/P
Sum = 150

Program 3 - Pointers as function arguments.

```
#include <stdio.h>
#include <conio.h>
void change (int*x);
void main()
{
    int x=20;
    change (&x);
    printf ("In x=%d", x);
    getch();
}

void main ( ) (int*x)
{
    x = x + 10;
}
```

O/P
x = 30

Program 4 -

```
#include <stdio.h>
#include <conio.h>
void exchange (int*a, int*b);
void main()
```

O/P

Before exchange $x=10, y=20$
 After exchange $x=20, y=10.$

```

void exchange (int*x, int*y);
{
    int x, y;
    x=10;
    y=20;
    printf (" Before exchange =x =%d y=%d : ,x,y);
    exchange (&x, &y);
    printf ("In After exchange x=%d, y=%d : ,x,y);
    getch();
}

void exchange (int*x, int*y);
{
    int t;
    t=x;
    x=y;
    y=t;
}
  
```

Program 5 - Arrange array in ascending orders using pointers

```

#include <stdio.h>
#include <conio.h>
void main()
{
    int x[5] = {17, 15, 18, 12, 14};
    int *p, *q, i, k, t;
    p = &x[0];
    for (i=0, i<=4, ++i)
        q = p+i;
        for (k=i+1, k<=4, ++k)
            if (q->x < p+k->x)
                t = q->x;
                q->x = p+k->x;
                p+k->x = t;
}
  
```

```

if (xp > xq)
    te = xp;
    xp = xq;
    tq = te;
    tp = tq;
printf("In Sorted array");
p = &x[0];
for (i = 0, i < 5, ++i)
{
    printf("In %d", *p);
    p++;
}
getch();
}

```

O/P
 Sorted array
 12
 14
 15
 17
 18

#O/P

Opening file test

Enter some text from keyboard to write file

Hi, How are you doing?

Closing the file test .c.

Practical No. 10.

Aim- Programs on file Handling.

Program 1 - Open file → write and close file.

```
#include <stdio.h>
#include <conio.h>
#include <string.h>
int main()
{
    FILE *fp;
    char data[50];
    printf ("Opening file test.");
    fp = fopen ('test.c', "w");
    if (fp == NULL)
        printf ("Could not open file test.c");
    return 1;
}
printf ("In Enter some text from keyboard to write in file.");
while (scanf ("%s", data) > 0)
{
    fputs (data, fp);
    fputs ("\n", fp);
    printf ("closing the file test.c");
    fclose (fp);
    return 0;
}
```

Program 2- File opening → Reading & closing the file

```
#include <stdio.h>
#include <conio.h>
int main()
{ FILE *fp;
char data[50];
printf ("Opening file Test");
fp = fopen ("test.c", "r");
if (fp == NULL)
{ printf ("Could not open");
return 1;
}
printf ("Reading the file");
while (fgets (data, 50, fp) != NULL)
printf ("Closing the file");
fclose (fp);
return (fp);
}
```

Program 3- Using putw() & getw() function

```
#include <stdio.h>
#include <conio.h>
int main()
{ FILE *fp;
int i=1, j=2, k=3, num;
fp = fopen ("test.c", "w");
putw (i, fp);
putw (j, fp);
putw (k, fp);
```

O/P

Opening the file test
Reading the file
How are you doing?
Using the file

O/P

Data in test.c

- 1
- 2
- 3.

#O/P

Opening the file test
 Reading the file
 Hi, how are you?
 Closing the file.

O/P

Not O/P procedure!

```
fclose (fp);
fp = fopen ("test.c", "r");
while (getchar (fp) != EOF);
```

Program 4 - *fgetc()* function.

```
#include <stdio.h>
int main ()
{
    FILE *fp;
    char c;
    printf ("Opening the file ");
    while (1)
    {
        c = fgetc (fp);
        if (c == EOF)
            break;
        printf ("%c", c);
        if (c == 'q')
            break;
    }
    fclose (fp);
    return 0;
}
```

Program 5 - *fputc()* function.

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

```

char ch;
FILE *fp1;
FILE *fp2;
if (fp1 = fopen ("text1", "r"))
    ch = getc(fp1);
    fp2 = fopen ("text 2.c", "w");
    while (ch != EOF)
        fputc (ch, fp2);
        ch = getc(fp1);
        feof(fp1);
        feof(fp2);
    return 0;
}
return 1;
}.

```

Program 6 - fgets() function

```

#include <stdio.h>
int main()
{
    file *fp;
    char c;
    printf ("Opening the file test");
    printf (" Reading the file");
    while (1)
    {
        c = fgetc (fp);
        if (feof (fp))
            break;
        printf ("%c", c);
    }
}

```

O/P

Opening the file test
 Reading the file
 How are you!
 Closing the file.

O/P

Enter some character (f to exit)
 A

Entered character:A

B

Entered character:B

\$

Entered character:\$

O/P 7

Name - Fresh 2fresh

Age : 5

Total number of character : 5.

77

```
printf (" Closing the file text");
fclose (fp);
return 0;
}
```

Program 7 - fgetchar() function.

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

```
#include <ctype.h>
```

```
int main ()
```

```
{
```

```
char c;
```

```
printf (" Enter char ! $ to exit");
```

```
while (c != '$');
```

```
?c = fgetchar ();
```

```
printf (" \n Enter char ");
```

```
putchar (c);
```

```
printf (" \n");
```

```
}
```

```
return 0; }
```

Program 8 - fscanf(), fprintf(), rewind() functions.

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

```
int main ()
```

```
{ char age, length;
```

```
file * fp;
```

```
fprintf (fp, "text .text ", "W");
```

```
fprintf (fp, "9.8 %d ", "fresh2fresh ", 5);
```

```
length = strlen (ln);
```

```
scanf(fp, "%d", &age);
scanf(fp, "%s", Bnames);
fclose(fp);
printf("Name %s is age %d, name %d");
printf("Total number in file");
return 0;
}
```

Program 9 - fputchar() function.

```
#include <stdio.h>
int main()
{
    clrscr();
    char ch = 'a';
    while (ch <='z')
    {
        fputchar(ch),
        ch++;
    }
    return 0;
}
```

O/P
abcdefghijklmnopqrstuvwxyz