| | | | | |
|---|---|---|---|---|
| 1. | Area of rectangle, volume of sphere addition. ~~cal~~ | | 3-12-19 | |
| 2. | Program on operators and Expression | | 10-12-19 | |
| 3. | Program using if and nested if statements | | 24-12-19 | |
| 4. | Program using loop | | 7-1-2020 | |
| 5. | Array | | 14-1-2020 | |
| 6. | String function | | 21-1-2020 | |
| 7. | User define function | | 4-2-2020 | |
| 8. | Structures | | 9-2-2020 | 25/02 |
| 9. | pointers | | 23-2-2020 | |
| 10. | file handling | | 28-2-2020 | |

Practical - 1

Aim :- Program to understand basic datatypes and input and output

Program 1 :- Area of triangle

Algorithm :-

step 1 :- specify 2 header files namely stdio and conio.
step 2 :- define 3 variables of data type float namely, l - length, b - breadth and other
step 3 :- Use clrscr ()
step 4 :- Accept the length of triangle from the user and store it in the variable l
step 5 :- Accept the breadth from the user and store it in a variable b
step 6 :- Calculate the area of the rectangle by multiplying the width and height i.e length and breadth taken from user.
step 7 :- print the area of the rectangle

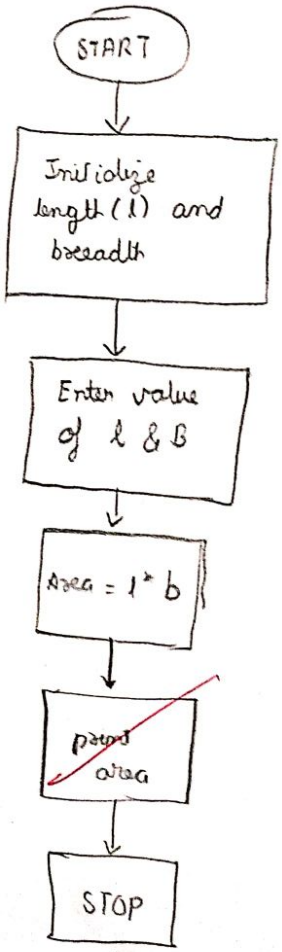
Source code :-

```
# include <stdio.h>
# include <conio.h>
  void main ()
  {
        int l, b, area ;
        printf ("Enter the number : ") ;
        scanf (" %d", &l, &b)
```

as

Output : Enter length and breadth - 7 3
The area of rectangle 21

flowchart :



```
    area = l * b
    printf ("The area is %d");
    getch ()
}
```

Program : 2 Volume of sphere

Algorithm :

Step 1 : specify 2 header files i.e stdio and conio

Step 2 : Define 3 variables in float data type i.e pi, r and ~~area~~ volume

Step 3 : Use clrscr()

Step 4 : Accept the radius of the circle from the user and store it in a variable r.

Step 5 : Calculate the volume by using the formula $(4/3) * pi * (r)^3$

Step 6 : print the volume of the sphere.

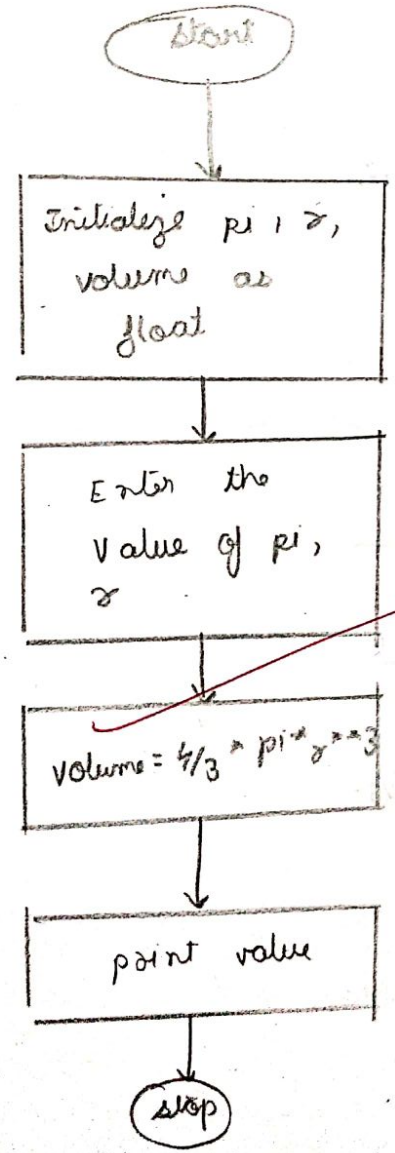
Coding :

```
#include <stdio.h>
#include <conio.h>
void main ()
{
    clrscr ()
    float r, v, pi;
```

Output : Enter the radius 7

The value of sphere - 436.026733

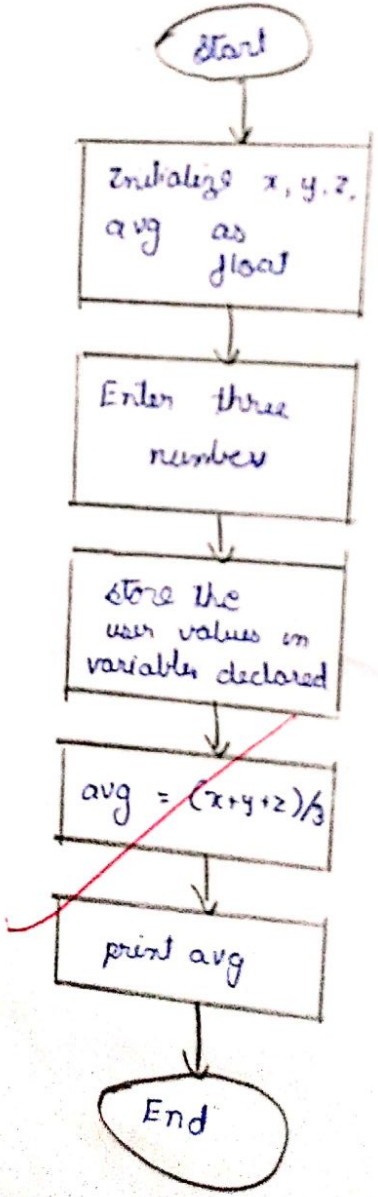
flow chart



OUTPUT : Enter three numbers : 3 10 50

The average of three numbes : 21

flowchart :



```
    pi = 3.14 ;
    clrscr ();
    printf ("Enter the radius");
    scanf ("%f", &r);
    vol = 4/3 * pi *r *r *r
    printf ("The volume of sphere :", vol);
    getch ();
}
```

program #3 :- Average of three numbers

Step 1 :- Initialize three variables x, y, z and avg for finding the average of numbers
Step 2 :- clear the screen
Step 3 :- Take three input from user and store the values to the given variables
Step 4 :- perform the operation for average of three numbers
Step 5 :- print the average of three numbers
Step 6 :- End

Code :-

```
# include <stdio.h>
# include <conio.h>
void main ()
{
    float x, y, z, avg ;
    clrscr ();
```

es

```
printf ("Enter three numbers : ");
scanf ("%f %f %f ", &x, &y, &z);
avg = (x+y+z)/3;
printf ("The average of three numbers :", avg);
getch ();
}
```

Program 4 : convert temperatures from celsius to farenheits

Algorithm :

Step 1 :

Step 2 : Initialize two variables for celsius and farenheits

Step 3 : Clear the screen

Step 4 : Take the input from the user in celsius

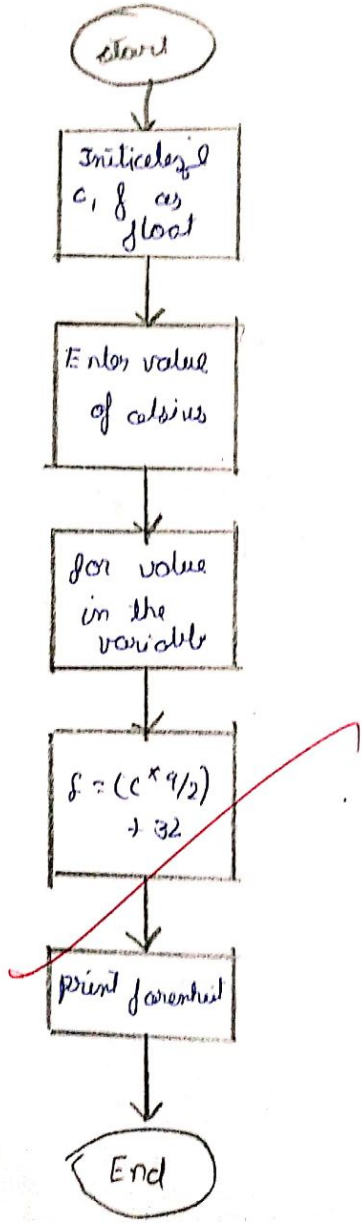
Step 5 : Convert the celsius to farenheit using operation f=(c * 9/5) + 32

Step 6 : print the farenheit value

Step 7 : End

output :- Enter the value of celsius : 31
The fahrenheit is : 87.8

flow chart :



code :-

```
# include <stdio.h>
# include <conio.h>
void main ()
{
    float c, f ;
    clrscr ();
    printf (" Enter the value of celsius ");
    scanf (" %f ", &c);
    f = ( c * 9/5 ) +32 ;
    printf (" The fahrenheit is : ", f );
    getch ();
}
```

program 5 :- convert temperature from fahrenheit to celsius.

Algorithm :-

Step 1 :-
Step 2 :- Initialize the variable with suitable data type for celsius and fahrenheit
Step 3 :- clear the screen
Step 4 :- Take input for the user of farenheit.
Step 5 :- Store the value of fahrenheit which is initialized at step 2.
Step 6 :- Perform the celsius operation to find the celsius $c = (f - 32) * 5/9$

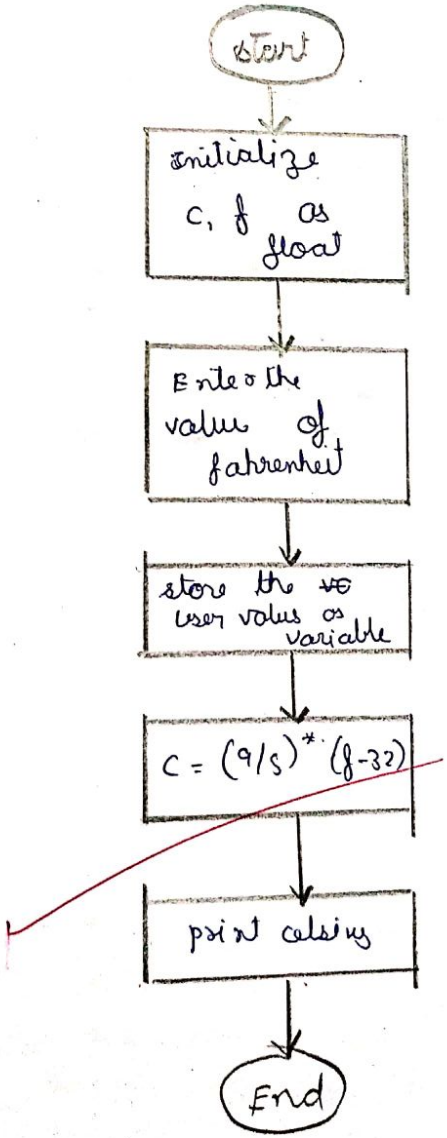
Step 7 : print the celsius
Step 8 : End.

Code :

```
# include < stdio.h >
# include < conio.h >
void main ()
{
  float c, f ;
  clrscr ();
  printf (" Enter the value of fahrenheit ");
  scanf (" %f ", &f);
  c = (9/5) * (f-32)
  printf (" The celsius is : ", c);
  getch ();
}
```

output :- Enter the value of fahrenheit : 80
The celsius is : 26.66667

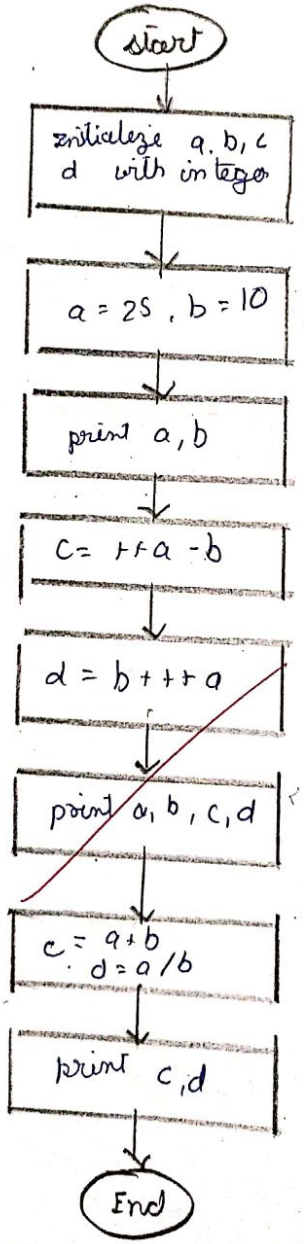
flow chart :-



Output :- a = 25 , b = 10

a = 26 , b = 11 c = 16 d = 36

c = 4 , d = 2



# Pratical - 2

Aim :- Programs on a operator and expressions

Program - 1

Algorithm :-

step 1 :- Initialize four variables with datatype int
step 2 :- Clear the screen
step 3 :- store the value 25 in a and 10 in b
step 4 :- Print the value of a & b
step 5 :- Do the expression c = ++a - b
step 6 :- Do post increment b and add to a, store it in d
step 7 :- print the value of a, b, c, d
step 8 :- Do a % b and store in c
step 9 :- Do a / b and store in d
stop 10 :- print the value of c and d

```
# include <stdio.h>
# include <conio.h>
void main ()
{
    int a, b, c, d;
    clrscr ();
    a = 25 ;  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 = a / b
    printf ("\n c = %d, d = %d", c, d);
    getch ();
}
```

Program 2

Algorithm :

Step 1 : Initialize variable a, b, c with value a=8, b=15, c=3 and x, y, z

Step 2 : Print the value of a, b, c

Step 3 : Perform a-b/3+c*2-1 and store in x

Step 4 : Perform a-b/(3+c)*(2-1) and store in y

Step 5 : Perform a-(b/(3+c)*2)-1 and store in z

Step 6 : print the value of x, y, z

```
# include <stdio.h>
# include <conio.h>
void main ()
{
    float a, b, c;
    a = 8; b = 15; c = 3;
    printf ("\n a = %f, b = %f, c = %f", a, b, c);
    x = a-b/3+c*2-1;
    y = a-b/(3+c)*(2-1);
    z = a-(b/(3+c)*2)-1;
```

```
    printf ("\n x = %f , y = %f, z = %f ", x, y, z);
    getch ();
}
```

Program 3 :-

Algorithm :-

Step 1 :- Initialize a, b, c, ans with datatype integer.

Step 2 :- Clear the screen

Step 3 :- store the values in a = 6, b = 4 & c = 1

Step 4 :- Perform expression ++a && b++ || c++ ;
and store the values in ans

Step 5 :- print the value for a, b, c, ans

```
# include <stdio.h>
# include <conio.h>
void main()
{
  int a, b, c, ans;
  clrscr ();
  a = 6 ; b = 4 ; c = 3 ;
  ans = ++a && b++ || c++ ;
  printf ("a = %d , b = %d, c = %d , ans = %d", a , b, c, a
  getch ();
}
```

ans : ++a && b++

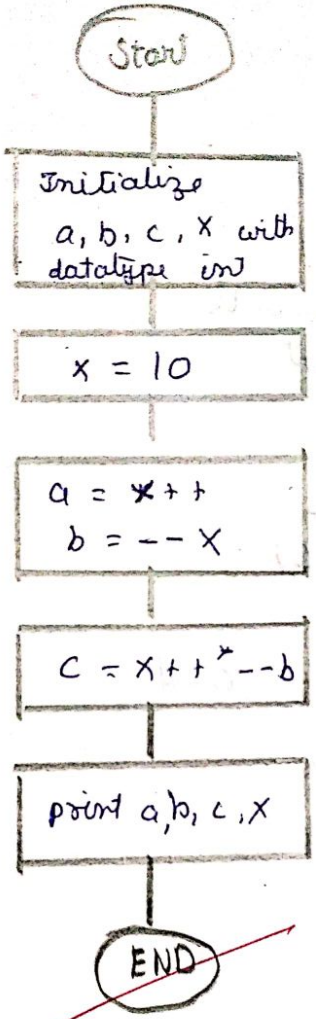
!!C++

print a, b, c, ans

Algorithm :-

step 1 :- Initialize variables a, b, c, x with datatype int.
step 2 :- clear the screen
step 3 :- store x = 10
step 4 :- post increment the value of x and store in b
step 5 :- pre decrement the value of x and store in b
step 6 :- perform x++ * --b and store in c
step 7 :- print the value of a, b, c, x
step 8 :- END

```
# include <stdio.h>
# include <conio.h>
void main ()
{
    int a, b, c, x;
    clrscr();
    x = 10;
    a = x++;
    b = --x;
    c = x++ * --b
    printf ("a = %d, b = %d, c = %d, x = %d", a, b, c
    getch();
}
```




OUTPUT :

a = 10, b = 9 c = 90 x = 11

start

Initialize a variable with datatype int

Enter the class

if (n % 2 == 0)

Even

odd

stop

Output:

Enter value of n = 12

12 is even

Enter value of n = 51

51 is odd

# Practical - 3

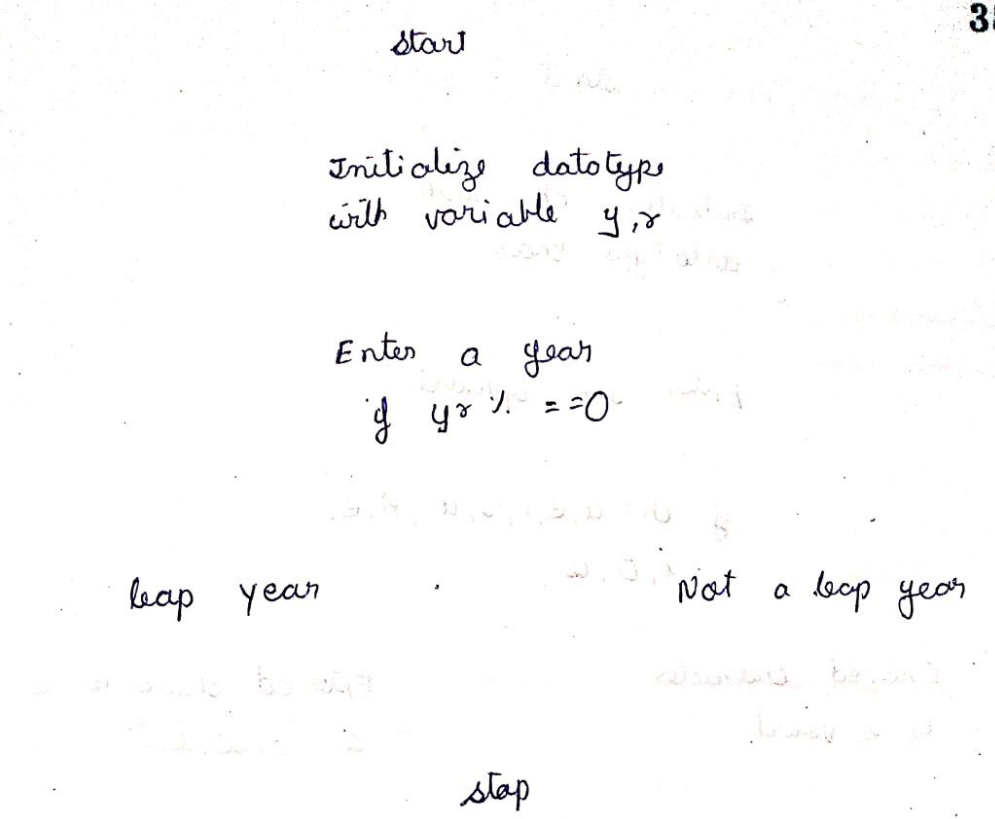
Aim : Program on decision making and branching.

Program 1 : Check whether number is odd or

```
# include <stdio.h>
# include <conio.h>
 void main()
{
  clrscr();
  int n, r;
  printf("\n Enter value of n : ");
  scanf("%d", &n);
  r = n % 2;
  if (r == 0)
  printf("\n %d is odd", n);
   else
    printf("\n %d is even", n);
   getch();
}
```

Program 2 :- Check if the entered year is a leap year or not

```
# include <stdio.h>
# include <conio.h>
void main ()
{
  clrscr ();
  int r, y ;
  printf ("Enter the year");
  scanf ("%d", &y);
  r = y % 4;
  if (r == 0)
  printf ("\n %d is a leap year", y);
  else
   printf ("It is not leap year");
   getch ();
}
```



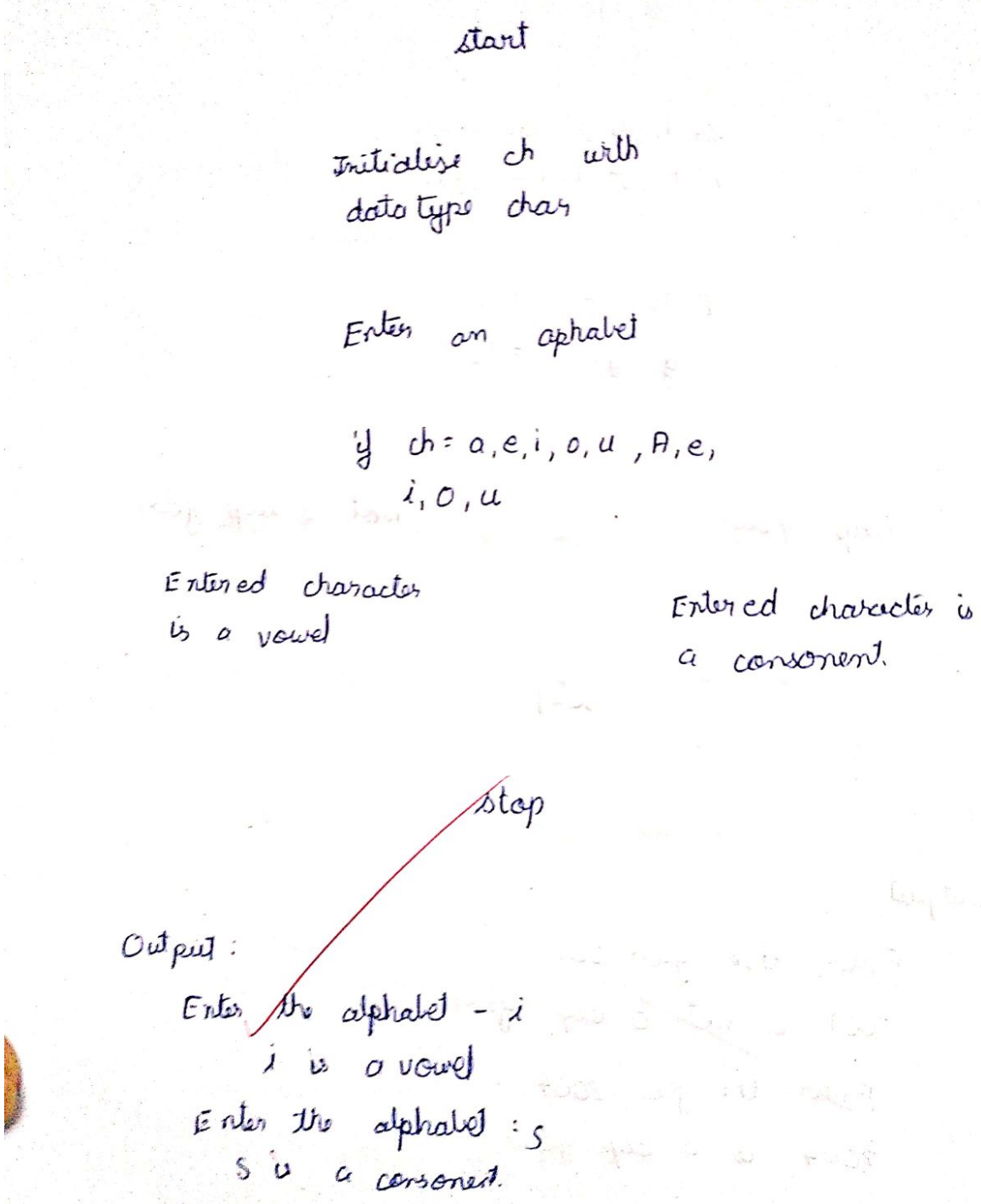

Output :

Enter the year 2001

2001 is not a leap year

Enter the year 2004

2004 is a leap year.




Output :

Enter the alphabet - i
i is a vowel
Enter the alphabet : s
s is a consonent.

Program 3: Check whether the entered alphabet is a vowel or consonant.

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

Program 2:

```
# include <stdio.h>
# include <conio.h>
 void main ()
{
    int a, b, c;
    clrscr ();
    printf ("Enter 3 nos");
    scanf ("%d, %d, %d", &a, &b, &c);
    if ((a>b) && (a>c))
    printf ("\n a is greater");
    else if ((b>0) && (b>c))
     printf ("\n b is greater");
     else
      printf ("\n c is greater");
      getch ();
}
```

Start

Initialize three variable a, b, c

Enter 3 nos

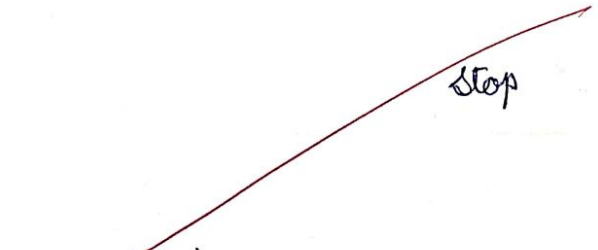
if (a>b) && (a>c)

a is greater

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

b is greater

c is greater.




OUTPUT :

Enter 3 nos 3

7

1

b is greater

11 Initialize variable n with datatype int

Enter a single digit no

```
if n == 0
  zero
if n == 1
  one
if n == 2
  two
if n == 3
  three
if n == 4
  four
if n == 5
  five
if n == 6
  six
if n == 7
  seven
step
```

Output:

Enter single digit decimal no : 1
one

Enter single digit decimal no : 15
Error

Program 5 :- Program to enter single digit decimal number from keyboard and print that digit in word form

```
# include < stdio.h >
# include < conio.h >
void main { }
{
    clrscr ( ) ;
    int n ;
    printf ("\n Enter single digit decimal no : ");
    scanf (" %d ", & n);
    if ( n == 0)
    printf ("\n zero ");
    else if ( n == 1)
    printf ("\n one ");
    else if ( n == 2)
    printf ("\n two");
    else if (n == 3)
    printf ("\n three") ;
    else if ( n == 4)
    printf ("\n four ");
    else if ( n == 5)
    printf ( "\n five ")
    else if (n == 6)
    printf ( "\n six ");
    else if (n == 7)
    printf ("\n seven");
    else
    printf ("\n error");
    getch ( );
}
```

Program 7 :- Program to perform addition, subtraction, multiplication using switch case

```
# include <stdio.h>
# include <conio.h>
void main ()
{
   clrscr();
   int a, b, c, choice;
   printf ("\n select your choice");
   printf ("\n 1. Addition");
   printf ("\n 2. Subtraction");
   printf ("\n 3. Multiplication");
   printf ("\n 4. Division");
   printf ("\n 5. Exit");
   scanf ("%d", &choice);
   if (choice >=1 && choice <=4)
{
   printf ("\n Enter value of a and b :");
   scanf ("%d %d", &a, &b);
}
   switch (choice)
   {
   case 1 :
   r = a + b;
   printf ("\n %d + %d = %d", a, b, r);
   break;
```

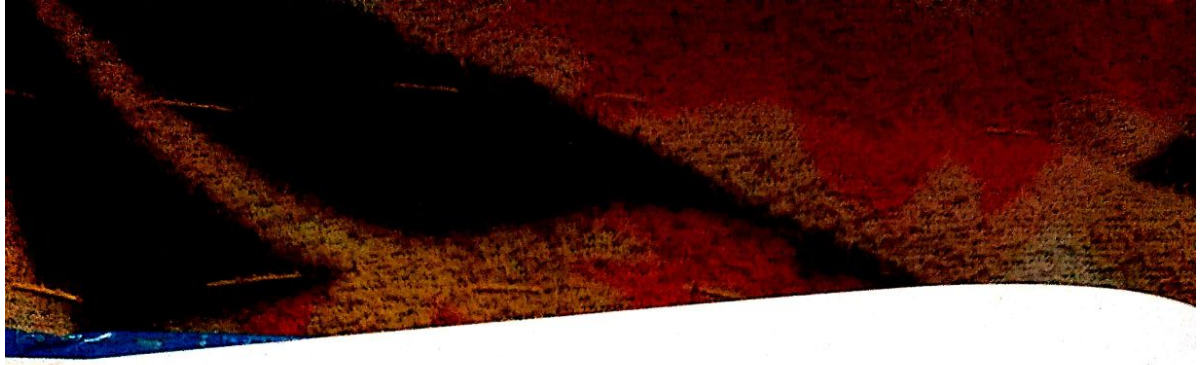
Start

Initialize three variable with data type integers

Enter your choice

if choice >=1 && choice <=0

Enter value of a and b



SA

Output :

Enter your choice

2

Enter value of a and b : 8 10

-2

```
Case 2
        r = a+b;
        printf ("\n %d - %d = %d ", a,b,r);
        break ;
Case 3 :
        r = a * b
        printf ("\n %d * %d = %d" , a,b, r);
        break ;
Case 4 ;
      r = a / b ;
      printf ("\n %d / %d = %d" , a,b,r);
       break ;
default ;
printf ("\n No operation");
 break ;
}
  getch ( ) ;
}
```

25/02

# Pratical - 4

Aim :- Program to understand looping statements

Program 1 :- Program to print even numbers from 1-20

Algorithm :-

step 1 :- Initialize a variable with datatype integer.

step 2 : Use condition statement to print even numbers Initialize a variable upto the number you has to print.

step 3 : Display the even numbers

<ode

```
#include <stdio.h>
#include <conio.h>
void main()
{
  int i;
  clrscr();
  for (i=2; i<=20; i=i+2)
  {
    printf("%d \t", i);
  }
  getch();
}
```

Output :

2
4
6
8
10
12
14
16
18
20

Output :

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

Program - 2

Algorithm :

Step 1 : Initialize two variables with integer datatype
Step 2 : Store one variable equal to 1
Step 3 : Use conditional statement, with less equal to 5
Step 4 : Declare value one in another variable
Step 5 : Use conditional statement for another variable which is less than equal to first variable.
Step 6 : Display the value of another variable
Step 7 : Pre increment the value of another variable
Step 8 : Post increment the value of first variable

Code :

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

Program - 3 ;

Algorithm :-

Step 1 :- Initialize four variables with integer datatype
Step 2 :- Accept the value from the user and store it in variable
Step 3 :- Initialize sum equal to zero.
step 4 :- Use conditional statement, in which first it gives the remainde
store it in a variable, use if statement To check whether
the variable is equal to 1
Step 5 :- Then store the value in sum by adding sum and varia
Step 6 :- Pre increment the variable
Step 7 :- Then check the condition if the variable is less than
equals to user variable.
Step 8 :- Print the sum of all odd numbers
Step 9 :- End

code

```
# include < stdio.h >
# include < conio.h >
void main ()
{
  int i, n, sum, x ;
  clrscr ();
  printf ("Enter the value of n :- ");
  scanf ("%d", &n);
```

a)

Output:

Enter the value of n 5

The sum of all odd no are 25

```
sum = 0;
do
{
x = i % 2;
if (x == 1);
{
  sum = sum + i;
}
++i;
}
while (i <= n)
printf("The sum of all odd no. are.", "%d", sum)
getch();
```

Program - 4

Algorithm :-

step 1 : Initialize two variables with datatype int

step 2 : Use nested conditional statement and check if i is less than equal to 5 & increment in it by 1

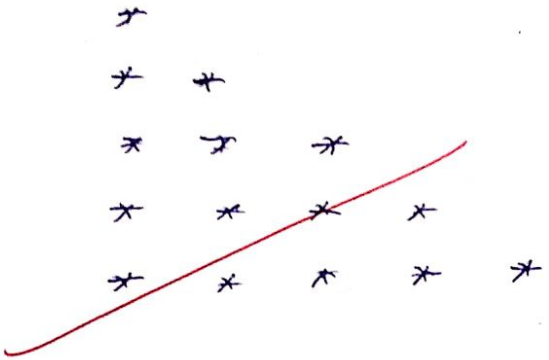
step 3 : In another condition check the value starts from 1, less than equal to previous conditional variable & increment the value by 1

step 4 : print *

Code

```
# include <stdio.h>
# include <conio.h>
void main ();
{
    int i, j ;
    clrscr () ;
    for ( i =1; i <= 5; i++)
    {
    for (j =1; j <= i ; j++)
  {
    printf ("* ");
  }
 }
 getch ();
}
```

output :



8A

Output =

1

1

2

3

5

8

13

21

34

55

89

144

233

377

610

987

1597

2584

Program 5 :

Algorithm :

step 1 : Initialize four variable with datatype integer
step 2 : Initialize two variable with value 1 and 0
step 3 : Print the value of second variable
step 4 : Use for condition statement which start from 3 less than equal to 20, increment the value
step 5 : Add the two variable and store it on 'f' variable indicating fiboonacci
step 6 : Print the fibonacci series
step 7 : swap the values

```
#include <stdio.h>
#include <conio.h>
void main()
{
  int a, b, f, i ;
  clrscr() ;
  a = i ;
  b = a ;
  for (i = 3 ; i <= 20, i++)
  {
      f = a+b ;
      printf ("\n %d", f) ;
      a = b ;
      b = f ;
  }
  getch() ;
```

28/02

Practical - 5

Aim :- Program on arrays

Program 1 :- WAP to find the sum of five numbers

```
# include < stdio.h >
# include < conio.h >
void main ();
{
  int i , num [5], sum=0;
  clrscr ();
  printf ("Enter the elements into array");
  for (i = 0, i< 5, i++)
  scanf ("%d", & num [i]);
  printf ("\n entered array elements are ");
  for (i =0; i <5; i++)
  printf ("%d \t ", num [i]);
  for (i=0; i<5, i++)
  sum = sum + num [i];
  printf ("\n sum of elements is : %d", sum);
  getch ();
}
```

Output

Enter the element into array : 3
4
5
6
7

Entered array element are 3 4 5 6 7

sum of element is 25

Program 2 : WAP to find the largest of the 10 number.

```
# include < stdio.h >
# include < conio.h >
void main ();
[
   int i , num [10] , l ;
   clrscr ();
   printf ("\n Enter 10 value in array :")
   for [i = 0 , i < 10 , i++);
   scanf (" %d " , & num [i]);
   l = num [0];
   for [i = 1 ; i<10, i++);
   l = num [0];
   for [i = 1 , i<10, i++)
   {
     if [l , num [i])
     l = num [i]
   }
     printf ("\n largest no is : %d " , l);
     getch ();
}
```

```
clrscr();
int i, num[10], p;
printf("Enter the values into the array");
for(i=0; i<10; i++)
scanf("%d", &num[i]);
p=0;
for(i=1; i<10; i++)
{
 if(num[i]>0)
}
```

Output :

Enter the values in the array

2
3
4
5
6
7
8
9

No. of odd no is : 5

Program 4 : WAP to find the odd number available in an array :

```
# include < stdio . h >
# include < conio . h >
void main ()
{
 clrscr ();
 int i , num [10];
 printf (" Enter the values into array : ")
 for (i =0, i <10, i ++)
 scanf ("% d, & num [i]);
 p = 0
 for (i =0 ; i <10, i ++)
 {
   if (num [i ] % 2 == 1)
   {
     p = p + 1
   }
 }
 printf (" \n no. of odd number is % d " , p);
 getch ();
}
```

Program 5:

```
#include <stdio.h>
#include <conio.h>
void main()
{
 clrscr();
 int i, j, num[5], t;
 printf("Enter the values into array:");
 for(i=0; i<5; i++)
 scanf("%d", &num[i]);
 for(j=0; j<5; j++)
 {
  if (num[i] > num[j])
 {
   t = num[i]
   num[i] = num[j];
   num[j] = t;
  }
 }
 printf("sorted array");
 for(i=0; i<5; i++)
  {
   printf("%d \t", num[i]);
  }
 getch();
}
```

Output :

```
Enter the value into array : 2
4
6
9
1

Sorted array : 1 2 4 6 9
```

17.

Enter elemets of matris x :2

1
2
3
4
5
6
7
8

Enter elements of matris y : 3

2
2
2
2
2
2
2
2

Matrix :

| | | |
|---|---|---|
| 12 | 10 | 10 |
| 27 | 24 | 24 |
| 48 | 42 | 42 |

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

```
t = 0;
for (k = 0; k < 3; k++)
{
  t = t + x[a][k] * g[k][c];
}
z[a][c] = t;
}
}
```

Enter the elements of matrix m : 3

4
3
6
7
8
9
2
3

Enter the elements of matrix n : 2

3
4
5
6
7
8
9
0

Matrix sum :

5 7 9
11 13 15
17 11 3

Program 7 :- WAP to print Matrix Addition

```
# include < stdio.h >
# include < conio.h >
void main()
{
  int m[3][3] , n[3][3] , sum[3][3] ;
  int x, y ;
Print ["Enter the elements of matrix m:"].
  for [x = 0 ; x <  ; x++ )
  {
  for  (y = 0 , y < 3 , y++)
   {
   scanf ["%d", &m[x][y]);
    }
   }
  printf ["\n Enter the elements of matrix n:"]
   for  (x = 0 ; x < 3 ; x++)
   {
  for (y = 0 ; y < 3 ; y++)
   {
  scanf ["%d", &n[x][y]],
   }
  }
  for [x = 0 , x < 3; x++)
  {
```

```
for {y = 0 ; y < 3 ; y++ }
  {
sum [x] [y] = m[x] [y] + n [x] [y] ;
   }
]
printf ("\n Matrix sum :");
for (x=0 ; x<3 ; x++)
 {
  for (y=0 ; y<3 ; y++)
  {
   }printf ("\t %d", sum [x] [y]);
  }printf ("\n");
 }getch();
}
```

Output :-

Enter your name : Himanshu

My name is :- Himanshu

# Practical 6

Aim : Program to understand string manipulation

Program: Write a program to display your name using string.

```
# include < stdio h >
# include < conio h >
  Void main ( )
{
   clrscr ( );
   char name [20];
   printf (" Enter your name: ");
   scanf (" %. s", & name);
   print ("\n my name is : %. s, name);
   getch ( );
}
```

```
Void main ()
{
    char a;
    clrscr ();
    printf ("enter a character.")
    a = getchar ();
    printf ("\n the character is"),
    putchar (a);
    getch ();
}
```

Program 3 : Write a program to enter a string

```
# include < stdio . h >
# include < conio ; h >
  Void main ()
{
   char[ 50 ];
   clrscr ();
```

Output

Enter a character a

the character is a

Output

Enter a string bts

the entered string is bts

na.

Output

~~Enter your name : Hu~~

My Name is

m

y

n

a

m

e

Program 4 Write a program to print the string in vertical order.

```
# include < stdio h >
# include < conio h >
  Void main ( )
{
  char name [10] = " my name"
  clrscr ( ).
  printf (" my name is "),
  for (int i = 0 ; i < 10 ; i++)
{
printf ("\n"),
putchar (name [i]);
}
getch ( ),
}
```



Program 5: Program to print reverse string

```
#include <stdio.h>
#include <conio.h>
void main ()
{
 char str[10];
 clrscr();
 printf("Enter a string:");
 scanf("%s", &str);
 strrev(str);
 printf("The reversed string is;%s", str)
 getch()
}
```

Output

Enter a string : Himanshu
The reversed string is uhsnamih

25/02



Output :

Enter the radius 5

Area : 78.5000

Circumference : 31.4000

# Practical No: 7

Aim

Program 1: Write a C program to calculate area and circumference of a circle.

```
#include <stdio.h>
#include <conio.h>
void circle (void);
void Main ()
{
   clrscr ();
   circle ();
   getch ();
}
void circle (void)
{
   int r;
   float area, circum
   printf ("Enter the radius");
   scanf ("%d", &r);
   area = 3.14 * r * r;
   circum = 2* 3.14 * r;
   printf ("\n Area: %f" area);
   printf ("\n Circumference: %f", circum);
   getch ();
}
```

Program 2: Write a C program to find the sum of digits of entered number

```
# include < stdio . h >
# include < conio . h >
 Void sum ( int n);
 Void main ()
{
   clrscr ();
   int n;
   printf (" Enter a number ; ");
   scanf (" %. d", & n);
   sum (n);
   getch ();
}
Void sum (int n)
{
   int r, s = 0
   while (n! = 0)
   {
   r = n % 10;
   s = s + r;
   n = n/10 ;
   }
   printf ("/n sum of digits is %d", s);
   getch ();
}
```

output :

Enter two no : 78
66

Sum of two no is : 144

Q3

Output

Enter 2 two number : 78

66

Sum of two number is : 144

Program 3

```
#  include  <  stdio  h  >
#  include  <  conio  h  >
void  sum  (int  n1, int  n2);
void  main ()
{
     clrscr ();
     int  n1, n2 ;
     printf ("Enter two number ;");
     scanf  ("%  d %  d", &n1 &n2);
     sum  (n1, n2);
     getch ();
}
void  sum ( int  n1, int n2)
{    int  a;
     a  =  n1 + n2;
     printf ("sum of two number is  %  d", a);
     getch ();
}
```

Program 4 : Write a C program to calculate the total and average of 4 marks

```
# include < stdio.h >
# include < conio.h >
 void total (int m1, int m2, int m3, int m4);
  void Main ()
{
      int a, b, c, d;
    printf (" Enter four marks")
    scanf ("%d %d %d %d", &a, &b, &c, &d);
    total (a, b, c, d);
    getch ();
}
    int a, b, c, d;
    printf (" Enter four marks: ");
    scanf ("%d %d %d %d", &a, &b, &c, &d)
void total (int m1, int m2, int m3, int m4);
{
  int total
  total = m1 + m2 + m3 + m4
  printf ("In The total is %d", tot);
   average (tot);
}
  void average (int tot)
{
   float avg;
  avg = tot (4)
```

Output

Enter four marks : 20
30
40
50

the total is 140
Average is 35.0000

aa

Output

Enter a number : 3

factorial of 3 : 56

Program 5: Write a C program to find the factorial of a number.

```
# include < stdio & h >
# include < conio h >
int factorial (int n);
  void main()
{
     int x , fact;
     printf ("Enter a number : ");
     scanf ("%d", & x);
     fact = factorial (x);
     printf ("\n Factorial of %d is %d", x, fact);
     getch ();
}
int factorial (int n)
{
     int f;
     if (n == 1)
        return 1;
     else :
      f = n * factorial (n-1);
        return (f);
        getch ();
}
```

25/02

```
};
void main()
{
    struct student x;
    clrscr();
    printf("Enter roll no:")
    scanf("%d", &x.rollno);
    printf("\n Enter name:");
    scanf("%s", &x.name);
    printf("\n Enter total");
    scanf("%d", &x.total);
    printf("\n Student Name: %s", x.name);
    scanf("\n Roll no: %d", x.rollno);
    printf("\n Total: %d", x.total);
    getch();
}
```

# Output

Enter roll no, name and total of student : 1845
Himanshu
100

Roll no : 1845
Name : Himanshu
Total : 100

8a

# output :

Enter eno and salary : 5 20000

Enter eno and salary : 5. 20000

Both are equal

Enter eno and salary : 3 15000

Enter eno and salary : 4 25000

Both are unequal

Program 2: Employee comparison.

```
# include <stdio.h>
# include <conio.h>
{
    int eno, salary;
};
void main ()
{
  struct employee n, y;
  printf ("\n Enter eno and salary :");
  scanf ("%d %d", &n.eno, &n.salary);
  printf ("\n 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 ();
}
```

```
clrscr();
printf("\n Enter name, price and qty :");
for (k=0; k<5; k++)
 {
 scanf("%s %d %d", &f[k].name, &f[k].qty,
        f[k].price);
 f[k].total = f[k].price + f[k].qty;
 }
for (k=0; k<5, k++)
 {
 printf("\n name = %s, price = %d, qty = %d
    f[k].name, f[k].price, f[k].qty);
 }
getch();
}
```

# output

Enter name, price & qty

apple 20 5

mango 15 3

banana 80 9

cherry 30 7

15

grapes 30

name = apple, price = 20, qty = 5

name = mango, price = 15, qty = 3

name

name = banana, price = 50, qty = 9

name = grapes, price = 30, qty = 15

name = cherry, price = 30, qty = 7

05

Enter record of 5 players

| | | |
|---|---|---|
| MS DHONI | India | 100 |
| Virat | India | 100 |
| Rohit | India | 100 |
| Sachin | India | 100 |
| Rahul | India | 100 |

| Player | Team | Wirsl |
|---|---|---|
| MS DHONI | India | 100 |
| Virat | India | 100 |
| Rohit | India | 100 |
| Sachin | India | 100 |
| Rahul | India | 100 |

Program 4 : Cricketers & their Team.

```
#include <stdio.h>
#include <conio.h>
#include <string.h>
struct cricket
{
    char pname[20], tname[20];
    int average;
};
void main()
{
  clrscr();
  struct cricket p[5], t;
  int i, k, x;
  printf("\n Enter records of 5 players :");
  for(i=0; i<5; i++)
  scanf("\n %s %s %d \n", &p[i], name, &p[i]
  for(i=0, i<4, i++)
  {   for(k=i+1; k<5, k++)
      {  x = strcmp(p[i].tname, p[k].tname);
         if(x>0)
         {  t = p[i];
            p[i] = p[k];
            p[k] = t;      } } }
printf("\n teamwise player names \n");
for(i=0; i<5; i++)
{
  printf("\n %s %s %d \n", p[i].pname, p[i].tname);
}
```

Program 5 :- structure with in structure.

```
# include <stdio.h>
# include <conio.h>
struct employee
{
   int salary;
};
struct employee
int id;
char name[10];
struct employee b2;
};
  void main()
{
  clrscr();
  int i;
  struct employee s={45," man",{50000}};
  printf("\n Roll no = %d \t Name = %s \t salary =
          s.id, s.name, s.b2.salary);
getch();
}
```

#output :

Roll no : 45 Name : Man salary : 60000

25/02

BT

Output :

a = 12

b = 4

x = 42

y = 42

Pratical 9 :-

Aim : Programs on pointers in C language

# Program 1 :-

```
# include <stdio.h>
# include <conio.h>
void main()
{
clrscr();
int a=12, b=4, x, y, *p, *q;
p=&a;
q=&b;
x= *p * *q - 6;
y=4 * (*p - *q) +10;
printf("\n a=%d", a);
printf("\n b=%d", b);
printf("\n x=%d", x);
printf("\n y=%d", y);
getch();
}
```

Program 2:-

```
#include <stdio.h>
#include <conio.h>
void main()
{
  clrscr();
  int x[5] = {10, 20, 30, 40, 50};
  int *p; i, sum = 0;
  p = &x[0];
  for (i = 0; i < 5; i++)
  {
    sum = sum + *p;
    p = p + 1;
  }
  printf("\n sum = %d", sum);
  getch();
}
```

Output

sum = 150

Output :-

$x = 30$

Program 3 :- Pointers as function argument.

```
# include <stdio.h>
# include <conio.h>
void change (int *p);
void main()
{
   clrscr();
   int x = 20;
   change (&x);
   printf ("\n x = %d", x);
   getch();
}
void main (int *p)
{
  *p = *p + 10;
}
```

Program 4 :-

```
# include <stdio.h>
# include <conio.h>
void exchange (int * a, int * b);
void main ()
{
  int x, y;
  x = 10;
  y = 20;
  printf ("\n Before exchange x = %d  y = %d",x,y);
  exchange (&x, &y);
  printf ("\n After exchange x = %d  y = %d",x,y);
  getch ();
}

void exchange (int * a, int * b)
{
  int t;
  t = * a;
  * a = * b;
  * b = t;
}
```

Output

Before exchange x = 10 , y = 20

After exchang x = 10 , y = 20

25/02

Output :

```
Opening the file test.c in write mode
Enter some text from keyboard to write in file test.c
Hi, How are you doing ?
Closing the file test.c
```

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 ("operating the file test.c in write mode");
  fp = fopen ("test.c"; "w");
  if (fp == NULL)
  { printf ("Could not open file test.c");
    return 1;
  }
  printf ("\n Enter some text from keyboard to
           write in file:");
  while (strlen (gets (data)) > 0)
  {   fputs (data, fp);
      fputs ("\n", fp); }
  printf ("closing the file test.c");
  fclose (fp);
  return 0;
}
```

Program 3 :- fscanf(), fprintf(), ftell(), rewind() functions

```
#include <stdio.h>
int main()
{
  char name[20];
  int age, length;
  FILE *fp;
  fp = fopen("test.txt", "w");
  fprintf(fp, "%s %d", "Fresh 2refresh", 5);
  length = ftell(fp);
  rewind(fp);
  fscanf(fp, "%d", &age);
  fscanf(fp, "%s", &name);
  fclose(fp)
  printf("Name : %s \n Age: %d \n", name, age)
  printf("Total number of character in file is %d",
      length);
  return 0;
}
```



Output :-

```
Name : Fresh 2 refresh
Age : 5
Total number of characters in file is 15
```