24

Output:

.....Demonstrate Various
Name of Student:
Nehal
Address of the Student:
London
Roll No of Student
37
Percentage of the Student
88.0%
Grade of Student
A
Mobile No
2345678910
Student name : Nehal
Student address : London
Student roll no : 37
Student Percentage : 88.0%
Student grade : A
Student mobile no : 2345678910

Practical-01

Aim: To Study the use of different types of datatypes

Source Code:

```
#include <stdio.h>
#include <conio.h>
Void main()
  {
     char name[50];
     char add[60];
      int roll no;
      float Percent;
      char grade;
      long int mob;
       clear();
      Printf(".....Demonstrate Various
       datatypes.....\n");
     Printf("Name of the Student\n");
      Scanf("%s", &name);
      Printf("Address of the Student\n");
      Scanf("%s", &add);
     Printf("Roll no of the Student\n");
     Scanf("%d", &roll no);
     Printf("Percentage of Student\n");
     Scanf("%f", &Percent);
```

```
        Printf("Grade of Student\n");
        Scanf("%s", &Grade);
        Printf("Mobile no\n");
        Scanf("%ld", &mob);
        Printf("\n Student name: %s", name);
        Printf("\n Student address: %s", add);
        Printf("\n Student roll no: %d", roll_no);
        Printf("\n Student Percent: %f", Percent);
        Printf("\n Student mobileno %d", mob);
        getch();
    }
```

Program. 2

Area of Circle

SOURCE CODE:

```
#include <stdio.h>
#include <conio.h>
Void main()
{
    float r;
    float PI = 3.14;
    float area;
    clrscr();
    Printf("Enter radius\n");
    Scanf("%f", &r);
    area = PI * r * r;
    Printf("Area of Circle %f", area);
} getch();
```

Output:

Enter radius

4

Area of Circle : 50.240002

as.

output:

Enter 1st number: 8
Enter 2nd number: 2
Addition of 2 numbers: 10
Subtraction of 2 numbers: 6
Multiplication of 2 numbers: 16
Division of 2 numbers: 4

Practical-2

AIM: Write a C Program which will Show the use of Various different types of operators

* Arithmetic operation

SOURCE CODE:

```
#include <stdio.h>
#include <conio.h>
Void main()
{
    int num1, num2, add, Sub, mul, div;
    clrscr();
    Printf ("Enter 1st number:");
    Scanf ("%d", &num1);
    Print f ("Enter 2nd number :");
    Scanf ("%d", &num2);
    add = num1 + num2;
    Print f ("Addition of 2 numbers : %d \n", add);
    Sub = num1 - num2;
  Print f(" Subtraction of 2 numbers : %d \n ", Sub);
    mul = num1 * num2;
    Print f ("Multiplication of 2 numbers : %d \n", mul);
    div = num1 / num2;
  Print f(" Division of 2 numbers : %d ", div );
    getch();
```

Logical operators

```
#include <stdio.h>
#include <conio.h>
void main()
{
int x, y, z, Value1, Value2, Value3,
 Value4, Value5;
clrscr();
Printf("Enter 1st Value:");
Scanf("%d", &x);
Printf("Enter 2nd Value:");
Scanf("%d", &y);
Printf("Enter 3rd Value:");
Scanf("%d", &z);
Value1 = (x<y) && (z>y);
Printf("Value1 is: %d\n", Value1);
Value2 = (x=y) && (z<y);
Printf("Value2 is: %d\n", Value2);
Value3 = (x<y) || (z=y);
Printf("Value3 is: %d\n", Value3);
Value4 = !(x==y);
Printf("Value4 is: %d\n", Value4);
Value5 = (x==y);
Printf("Value5 is: %\n", Value5);
getch();
}
```

output:

```
Enter 1st Value: 9
Enter 2nd Value: 8
Enter 3rd Value: 2

Value1 is: 0
Value2 is: 1
Value3 is: 1
Value4 is: 0
Value5 is: 1
```

19/01/2020

Practical - 3

AIM:- Decision Statement

Write a Program to find out odd & even number:

ALGORITHM:

Step 1 : Start
Step 2 : [Take input] Read a number from the user
Step 3 : Check if number % 2 == 0 then
Print even number
Step 4 : EXIT.

Source code:

```
#include <stdio.h>
#include <conio.h>
Void main ()
{
  int n;
  Clrscr ();
  Printf ("Enter a number : ");
  Scanf ("%d", &n);
  if (n % 2 == 0)
    {
      Printf("Even Number");
    }
  else
  {
```

```
        Printf("odd Number");
    }
        getch();
    }
```

2) Write a Program to find the entered year is leap Year or Not.

Algorithm:
Step 1: Start
Step 2: [Take Input] Read year from user
Step 3: if year % 4==0 and year%. 400==0 OR
Year %. 4==0 and Year%. 100!=0
Print "Leap Year".
else print "Not a Leap Year".
Step 4: Exit.

Program:

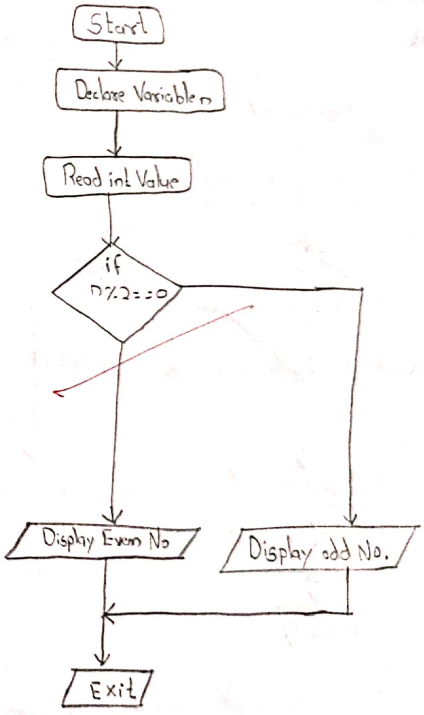
```
#include <stdio.h>
#include <conio.h>
Void main()
{
    int Year;
    clrscr();
    Printf("Enter a Year:");
    Scanf("%d",&Year);
    if (Year % 4==0)
    {
        if (Year % 100==0)
        {
            if (Year % 400==0)
```


output:

```
Enter a number: 46
Even Number
```

```
Enter a number: 67
odd Number
```

Flowchart:



no.

output:

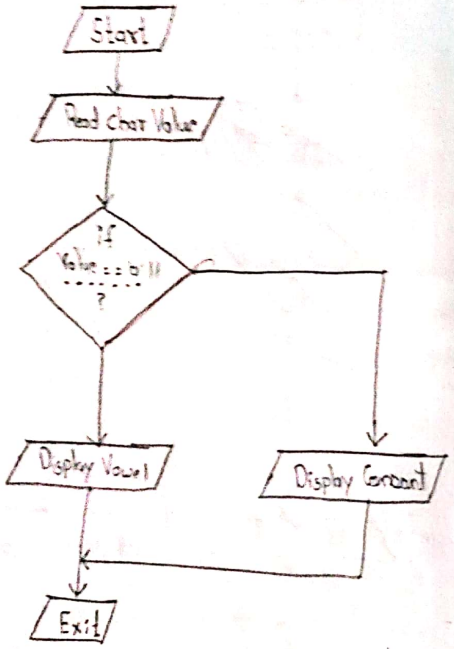
Enter the Alphabet: o

Vowel

Enter the Alphabet: x

Consonant

Flowchart:




```
        Print "Vowel";
    else Print "Consonant";
Step 4: Exit.

Program:
#include <stdio.h>
#include <conio.h>
Void main ()
{
    char a;
    clrscr();
    Print ("Enter the Alphabet: ");
    Scanf ("%s", &a);
    if (a == 'a' || a == 'e' || a == 'i' || a == 'o' || a == 'u' ||
        a == 'A' || a == 'E' || a == 'I' || a == 'O' || a == 'U' ||
    {
        Printf("Vowel");
    }
    else
    {
      Printf ("Consonant");
    }
    getch();
}
```

```
            {
              Printf(" leap Year")
            }
            else
            {
              Printf("Not a Leap Year");
            }
        }
        else
        {
          Printf("leap Year");
        }
    }
    else
    {
      Printf("Not a leap Year");
    }
    getch();
}
```

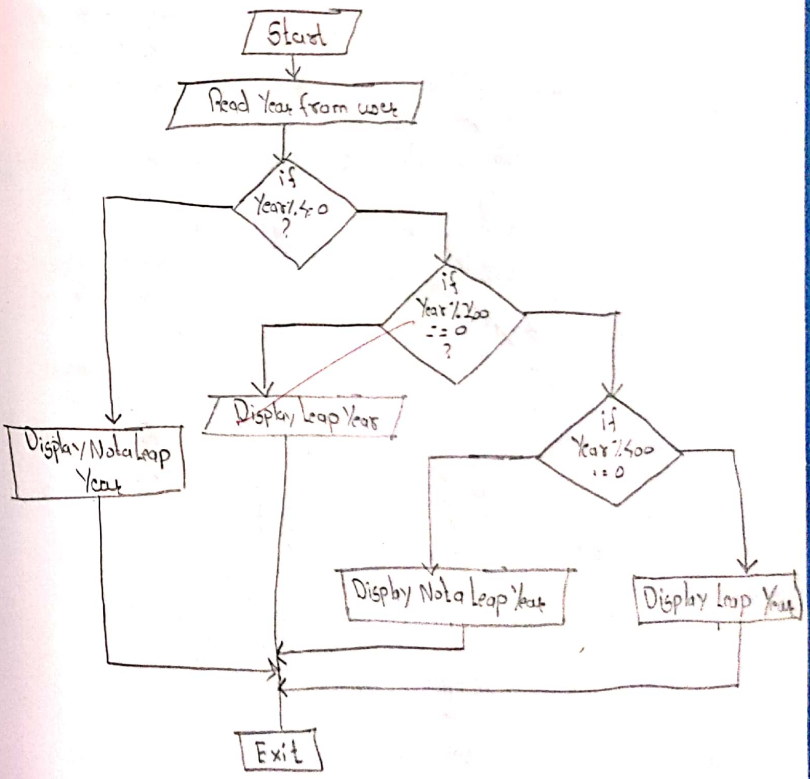
3) Write a Program to find whether the entered character is Vowel or Consonant.

Algorith:
Step 1: Start
Step 2: [Table Input] Read character Value from user,
Step 3: [check] if Value == 'a' || Value == 'e' || Value == 'i' || Value == 'o' || Value == 'u' || Value == 'A' || Value == 'E' || Value == 'I' || Value == 'O' || Value == 'U'.

Output:

```
Enter a Year: 2017
Not a Leap Year
-------------------
Enter a Year: 2020
Leap Year
```

Flowchart:



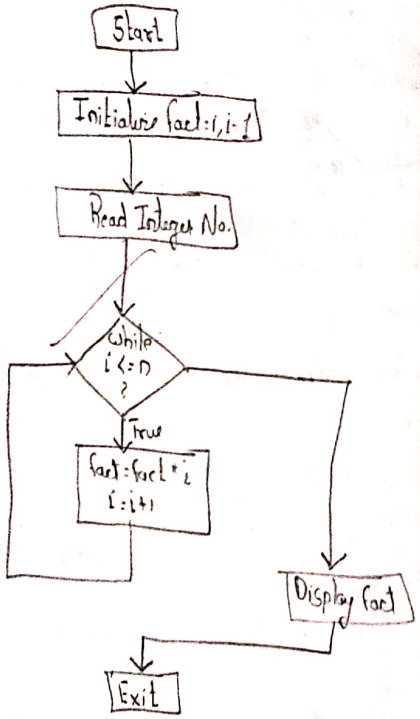
&;

output:

Enter the number: 7
Factorial = 5040

Enter the number: 5
Factorial = 180

Flowchart:



Practical - 04

Aim: Programs on looping Statement

1) Write a Program to find factorial of number.

Algorithm:
Step 1: Start
Step 2: Initialize variables fact=1 and i=1.
Step 3: [Take Input] Read an integer number from user.
Step 4: Repeat the steps until i <= input value.
→ fact = fact * i
→ i = i+1
Step 5: Display factorial
Step 6: Exit

Program:

```
#include <conio.h>
#include <stdio.h>
Void main ()
{
    int fact=1, i=1, n;
    clrscr ();
    Printf("Enter the number:");
    Scanf("%d", &n);
    while (i<=n)
    {
        fact = fact * i;
        i=i+1;
    }
```

```
    Printf(" Factorial = %d ", Fact);
    getch();
}
```

[2] Write a Program to make Fibonacci Series:

Algorithm:

Step 1 : Start
Step 2 : Read a number from user [Input]
Step 3 : Declare variable C, a=0, b=1, i=1
Step 4 : Display a, b.
Step 5 : Repeat Steps until i reached value -1
→ C=a+b
→ Display C
→ a=b
→ b=C
→ i++
Step 6 : Exit

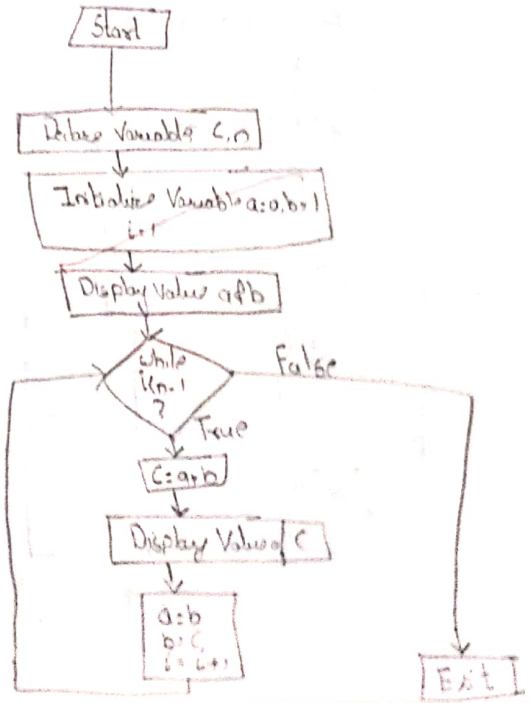
Program

```
#include <stdio.h>
#include <conio.h>
Void main()
{
    int a=0, b=1, C, i, n;
    clrscr();
    Printf(" Enter the Range for Fibonacci Series ");
    Scanf(" %d ", &n);
    Printf("%d \n %d ", a, b);
```


output:

```
Enter the Range for Fibonacci Series: 10
0
1
1
2
3
5
8
13
21
34
```

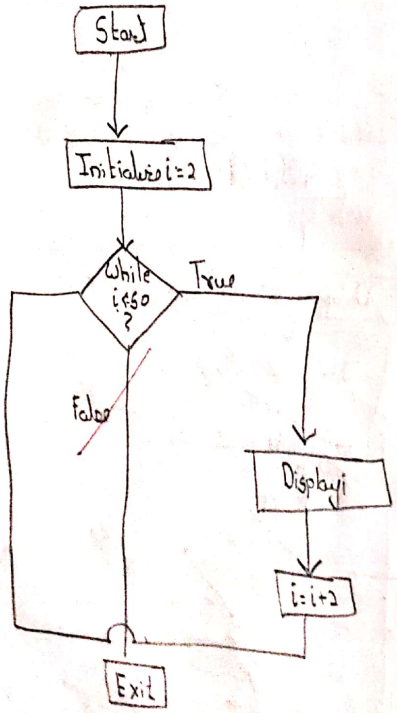
Flowchart:



output:

2 4 6 8 10 12 14 16 18
20 22 24 26 28 30 32 34 36
38 40 42 44 48 50

Flowchart:




```
    for(i=1; i<n+; i++)
{
        c=a+b;
        Printf("%d", c);
        a=b;
        b=c;
    }
    getch();
}
```

3) Write a Program to Print even numbers from 1 to 50 using while loop.

Algorithm:

Step 1: Start
Step 2: Initialize i=2
Step 3: Repeat Steps until i<=50
→ Display i
→ i=i+2
Step 4: Exit.

Program:

```
#include <conio.h>
#include <stdio.h>
  Void main ()
{
        int i=2;
        clrscr();
        while(i<=50)
        {
            Print f("%d", i);
            i=i+2;
        }
        getch();
}
```

07/02/2020

Practical-5

1. Fibonacci Series:

```
#include <stdio.h>
#include <conio.h>
  Void main ()
{
  int a[20], n, i;
   clrscr();
   Printf("\n Enter the number of term :");
   Scanf("%d",&n);
    a[0]=0;
    a[1]=1;
    for (i=2; i<n;i++)
   {
    a[i]=a[i-2]+a[i-1];
   }
     Printf("\n the fibonacci Series upto %d
      term is :\n",n);
     for (i=0; i<n; i++)
   {
     Printf(" %d \t",a[i]);
   }
   getch();
}
```

Algorithm:-

Step 1:- Start
Step 2: Initialize the Variable
Step 3: Print ("Enter the number till fibonacci Series")
Step 4:- Scan the Entered Value from the user
Step 5:- Use the for Condition loop for the Faboracci Series(Initialization the 0th & the 1st Position)
Step 6:- When the Condition in for loop is false Print or display in array to the cb
Step 7:- Stop

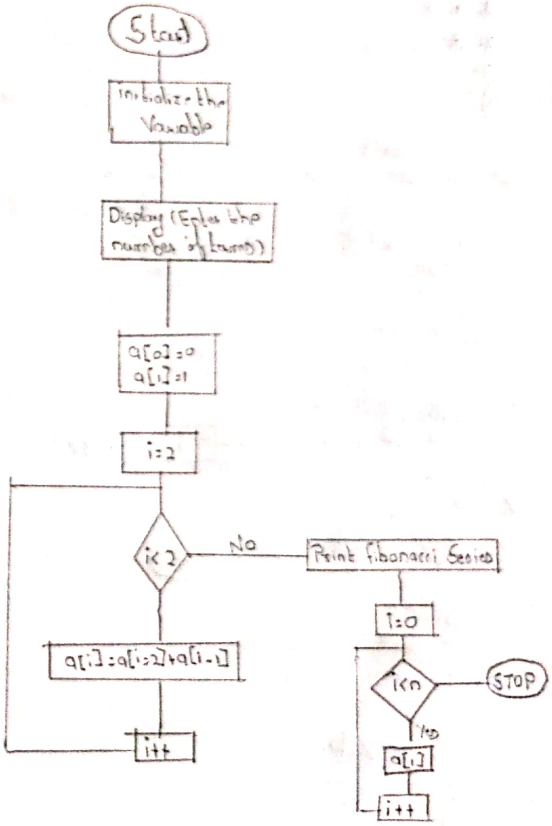
2- Programs to Print inverted half Pyramid using * and number

ALGORITHM:-

Step 1:- Start
Step 2: Initialize Variables as i, j and rows.
Step 3: Display (Enter number of rows) to the user and Subsequently Scan the Value too
Step 4:- Using for Conditional loop use will initialize Value of i as row and Value of i is greater than equal and decreament.
Step 6:- Subsequently use nested for loop that is again a for loop by initializing Value of i as 1 and i is less than equal to 1 and Pre increment.

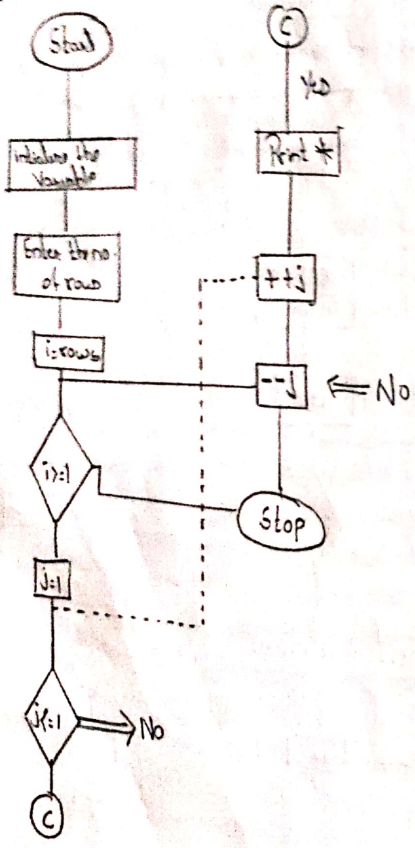
output:-
Enter "The number of term;s.
The fibonacci Series upto 4term is
0 1 1 2

Flowchart:-



output

Flowchart:-



Step6 :- Print the star(*)
Step7 :- Stop

Source Code:-

```
#include <stdio.h>
#include <conio.h>
  Void main()
{
   int i,j,rows;
   clrscr();
   Printf("Enter number of rows");
   Scanf ("%d",&rows);
    for(i=rows; i>=1; --i)
    {
        for(j=1,j<=i; ++j)
    {
       Printf(" * ");
    }
     Printf("\n");
    }
    getch();
}
```

Practical-6

Program on Structure

Step1: Declare the structure with initialization of variables

Step 2: Call the declared structure with Structure object

Step 3: Print to the user to Enter the Student details as roll no, name and Percentage with following format Specifier

Step 4: Display the same to user.

Source Code:

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

⇒

```
{
    Struct Stud
    {
        char name [20];
        int roll;
        float Per;
    };
```

output:

```
Enter Student details:
Enter roll no: 1737
Enter the name : Nehal
Enter the Per: 80
```

Roll	Name	Per
1737	Nehal	80.000000

```
Printf("\n Enter Student details : ");
Printf("\n Enter roll no : ");
Scanf("%d", &S1.roll);
Printf("\n Enter the name :");
Scanf("%s", &S1.name);
Printf("Enter the Per:");
Scanf("%f", &S1.name); Per);
Printf("\n\t Roll \t Name \t Per");
Printf("\n\t %d \t %s \t %f",
   S1.rollN, S1.name, S1.Per);
   getch();
}
```

#)

Algorithm:

Step 1: Start

Step 2: Declare Structure Student which will take input as roll number in integer, name in character & Percentage in float

Step 3: Depending upon the number of inputs declare the Structure objects.

Step 4: Display to the user to enter roll, Name & Percentage for the 1st user & 2nd user respectively

Step 5: Display the same by Scanning the inputs.

11)

output: Roll
Name
Percentage
1737
Nehal
80
1723
Aryan
85

Roll	Name	Percentage
1737	Nehal	80
1723	Aryan	85

Source Code:

```
#include <stdio.h>
#include <conio.h>
 Void main ()
{
   Struct Student
    {
      int roll;
      char name [20];
      float Per;
   } S1, S2;
   clrscr();
  Printf ("\t Roll \t Name \t Percentage")
  Scanf ("%d %s %f", &S1.roll, &S1.name, &S1.Per);
  Scanf ("%d %s %f", &S1.roll, &S2.name, &S2.Per);
  Printf ("\n %d \t %s \t %f", S1.roll, S1.name, S1.Per);
  Printf ("\n %d \t %s \t %f", S2.roll, S2.name, S2.Per);
  getch();
}
```

output:

1. Enter the ID: 1
1. Enter the name: Nehal
1. Enter the address: Canada
2. Enter the ID: 2
2. Enter the name: Aryan
2. Enter the address: California
3. Enter the ID: 3
3. Enter the name: Soumit
3. Enter the address: London

Employee record is:

ID	Name	Address
1	Nehal	Canada
2	Aryan	California
3	Soumit	London

#3:

```
#include <Stdio.h>
#include <Conio.h>
Void main ()
{
  Struct employee
=> {
      int id;
     char name [30];
     char add [30];
=> };
   Struct employee e[50];
    int size, i;
    clrscr();
    Printf("\n %d. Enter how many records you
     want to enter :");
     Scanf ("%d", &Size);
     for (i=1; i<=size; i++)
     {
        Printf ("\n %d Enter the ID: ", i);
        Scanf ("%d", &e[i].id);
       Printf ("\n %d Enter the name: ", i);
       Scanf ("\n%s", e[i].name);
       Printf("\n %d Enter the address: ", i);
       Scanf ("%s", e[i].add);
     }
      Printf ("\n\n Employee record is: ");
      Printf("\n\t ID\t Name \t Address \n");
```

Practical 7

#1 Call by Value:

```
#include <stdio.h>
#include <conio.h>
int Sample (int,int)
Void main ()
{
    int x,y,r;
    clrscr();
    Printf("Enter the Value of x: ");
    Scanf("%d",&x);
    Printf("Enter the Value of y:");
    Scanf("%d",&y);
     r=x+y;
    Printf("\n before function Call the number are:")
    Printf("\n x=%d \t y=%d \t r=%d",x,y,r);
    r= Sample (x,y);
    Printf("\n x=%d \t y=%d \t r=%d",x,y,r)
    getch();
}
  int Sample(int a, int b)
{
   int result;
   a=10;
   b=20
  Result=a+b;
```

output:

```
Enter the Value of x : 5
Enter the Value of y : 6
Before function Call the number are
    x= 5  y=6  r=11
Inside the function
   x=10  y=20  r=30
after function Call the number are :
    x=5  y=6  r=30
```

14

Enter a String : Cs is all about Programming
Enter Substring : all
String found!


```
Print f(" \n inside the function ");
Print f(" \n X= %d \t Y= %d it r= %d", a,b,result);
return (result);
}
```

Algorithm:

Step 1: Start
Step 2: Declare function with integer Parameters
Step 3: Declare Variables display the user Enter the Value of X & Y respectively and Scan the Same.
Step 4: add the Value and Store in an another Variable
Step 5: Display the number before function Call
Step 6: Call the function and display the Same
Step 7: Define the declared function and Print the Same
Step 8: Stop

#2.

```
#include <stdio.h>
#include <conio.h>
#include <string.h>
void main ()
{
    char str[30];
    char st[10];
    clrscr();
    Printf("\n Enter a string:");
    gets(str);
    Printf("\n Enter substring to find in the above string");
    gets(st);
    if (strstr(str,st)==NULL)
    {
        Printf("\n STRING NOT FOUND!");
    }
    else
    {
        Printf("\n String found");
    }
    getch();
}
```