output:

Name of the Student:
Sanjana

Address of the Student:
India

Roll no of the Student:
1716

Percentage of the Student:
89.88

Grade of Student:
A

Mobile no:
8874567812

Student name : Sanjana
Student address : India
Student rollno: 1716
Student percentage: 89.88
Student Grade: A
Student mobile no: 8874567812

Practical no. 1

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[50];
    int rollno;
    float percent;
    char grade;
    long int mob;
    clrscr();
    printf("Name of the Student\n");
    Scanf("%.5", &name);
    printf("Address of the Student\n");
    Scanf("%s", &add);
    printf("Roll no. of the Student\n");
    Scanf("%d", &rollno);
    printf("Percentage of the Student\n");
    Scanf("%f", &percent);
    printf("Grade of Student\n");
    Scanf("%.5", &grade);
    printf("Mobile number of Student\n");
    Scanf("%ld", &mob);
```

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```
printf("\n Student name : %s", name);
printf("\n Student address: %s", add);
printf("\n Student roll no : %d", rollno);
printf("\n Student percent: %f", percent);
printf("\n Student grade: %s", grade);
printf("\n Student mobile no: %ld", mob);
getch();
}
```

Program 2 :-
To perform celsius to Farrenheit conversion.

```
#include <stdio.h>
#include <conio.h>
void main()
{
  float fl, cl;
  clrscr();
  printf("Enter the temperature in celsius :");
  scanf("%f", &cl);
  fl = (cl*9.0)/5.0+32;
  printf("The temperature in farrenheit is: %f", fl);
  getch();
}
```


Output :-

```
Enter the temperature in celsius : 20
The temperature in farenheit is : 68
```

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Output

Enter 2 nos 5 2
addition is : 7
Subtraction is : 3
Multiplication is : 10

Practical no. 2.

Aim : write a C program which shows use of various different types of operators.

(i) Arithmetic operators :

```
#include <stdio.h>
#include <conio.h>
void main ()
{
    int a, b, add, Sub, mul ;
    clrscr();
    printf("Enter 2 nos ");
    Scanf ("%d %d", &a, &b);
    print f(" addition is :");
     add = a+b ;
     printf ("%d", &add);
    printf(" Subtraction is :");
     Sub = a-b;
     print ("%d", &Sub);
    printf(" Multiplication is:");
     mul = a*b;
     print ("%d", &mul);
     getch ();
}
```

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ii) Ternary operator:

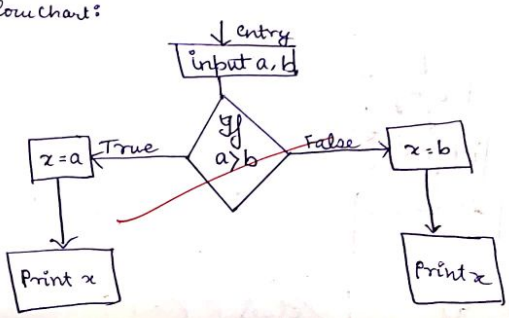
```
#include <stdio.h>
#include <conio.h>
void main()
{
   int x, a, b ;
   clrscr();
   printf ("Enter 2 nos");
   scanf ("%d %d", &a, &b);
    x = (a>b) ? a : b ;
   printf ("Largest of 2 nos is: %d", x);
   getch();
}
```


Output:

Enter 2 nos 5 3

Largest of 2 nos is 5

Flowchart:



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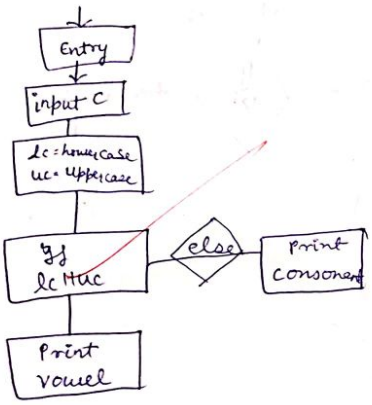
output:

Enter alphabet : A
A is a vowel.

Flowchart:



Practical no. 3.

Aim: To demonstrate decision statements.

(1) //To check vowel.

```
#include <stdio.h>
#include <conio.h>
void main()
{
    char c;
    int lc, uc;
    clrscr();
    printf("Enter alphabet");
    scanf("%c",&c);
    lc = (c=="a" || c=="e" || c=="i" ||c=="o"||c=="u");
    uc = (c=="A" || c=="E" || c=="I" ||c=="O" ||c=="U");
    if (lc||uc)
     {
       printf("%c is a vowel", c);
     }
    else
       {
        printf("%c is a consonant",c);
        }
     getch();
}
```

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(ii) Leap year

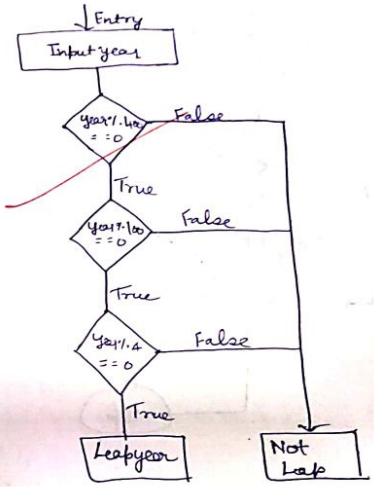
```
#include <stdio.h>
#include<conio.h>
void main()
{
  int year;
  clrscr();
  printf("Enter year:");
  scanf("%d", &year);
  if (year%400==0)
  {
    else if (year%100==0)
    {
      if (year%4==0)
      {
        printf("Leap year");
      }
      else{
        printf("Not Leap");
      }
    else{
      printf("Not Leap");
      }
  else {
    printf("Not Leap");
    }
  getch();
}
```


Output:

Enter year 2020

Leap year.

Flowchart:



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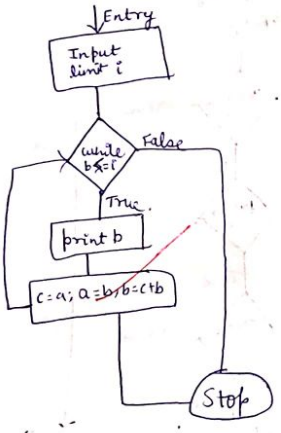
output:-

Enter a limit : 5

1 1 2 3 5

Flowchart :



Practical no. 1.

Aim: To perform basic arithmatic operations using if and while.

(i) Fibonacci.

```
#include<stdio.h>
#include<conio.h>
void main()
{
  int i=0, a=1, b, c=0;
  clrscr();
  printf("Enter a limit");
  scanf("%d", &i);
  while(b<=i)
   {
    printf("\n%d", b);
    c = a;
    a = b;
    b = c+b;
   }
  getch();
}
```

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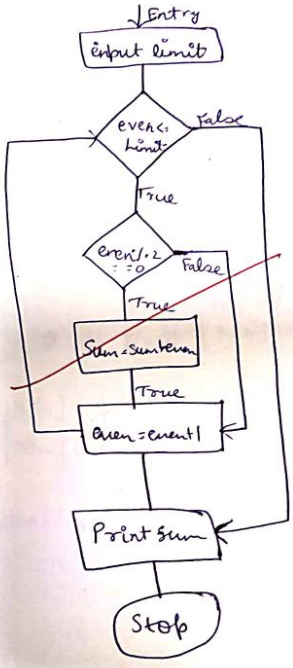
(ii) Sum of all even numbers from 1 to n

```
#include<stdio.h>
#include<conio.h>
void main()
{
   int sum=0, limit, even=1;
   clrscr();
   scanf("%d", &limit);
   while(even<=limit)
   {
    if(even%2==0)
   {
    sum=sum+even;
    }
    even=even+1;
    }
   printf("sum is %d", sum);
   getch();
}
```


output:

20
110

Flowchart:



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Output:
Limit: 5
0
1
1
2
3
5

: Practical 6:

: Program On Array:

→ Program on fibonacci series using Array.

```
#include <conio.h>
#include <stdio.h>
void main()
{
    int fib[20], limit, i=0;
    clrscr();
    printf("Limit: ");
    scanf("%d", &limit);
    fib[0]=0; printf("\n%d", fib[0]);
    fib[1]=1; printf("\n%d", fib[1]);
    for(i=2; i<=limit; i++)
    {
        fib[i]=fib[i-2]+fib[i-1];
        printf("\n%d", fib[i]);
    }
    getch();
}
```

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* Algorithm:

Step 1: Initialize necessary libraries, and create main function, create array variable, limit & i for loop.

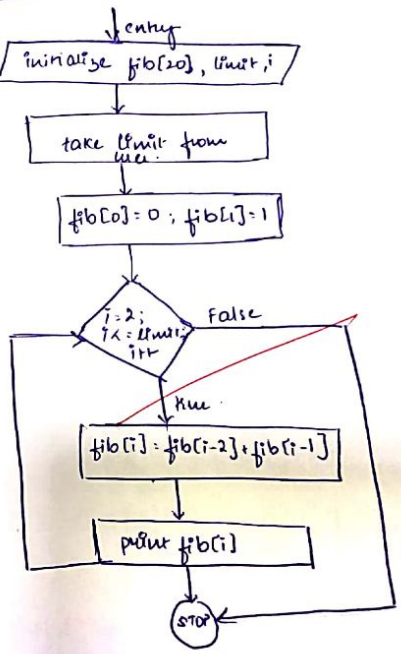
Step 2: Take limit from user and assign 1st 2 array as 0 & 1 appropriately and display.

Step 3: Using for loop, with i as 2 with user defined limit, add variable fib[i-2] and fib[i-1] to fib[i].

Step 4: Accordingly also display appropriately.

Step 5: End Program using Goto.

* flowchart:



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Output: 360

10 10 10
10 10 10
10 10 10

→ Program on Matrix Addition.

```
#include<stdio.h>
#include<conio.h>
void main()
{
  int i,j;
  int x[3][3]={{1,2,3},{4,5,6},{7,8,9}},
  int y[3][3]={{9,8,7},{6,5,4},{3,2,1}};
  int z[3][3]={{0,0,0},{0,0,0},{0,0,0}};
  clrscr();
  for(i=0;i<3;i++)
  {
     for(j=0;j<3;j++)
     {
        z[i][j]=x[i][j]+y[i][j];
     }
  }
  printf("\n");
  for(i=0;i<3;i++)
  {
     for(j=0;j<3;j++)
     {
        printf("%d",z[i][j]);
     }
     printf("\n");
  }
  getch();
}
```

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* Algorithm:

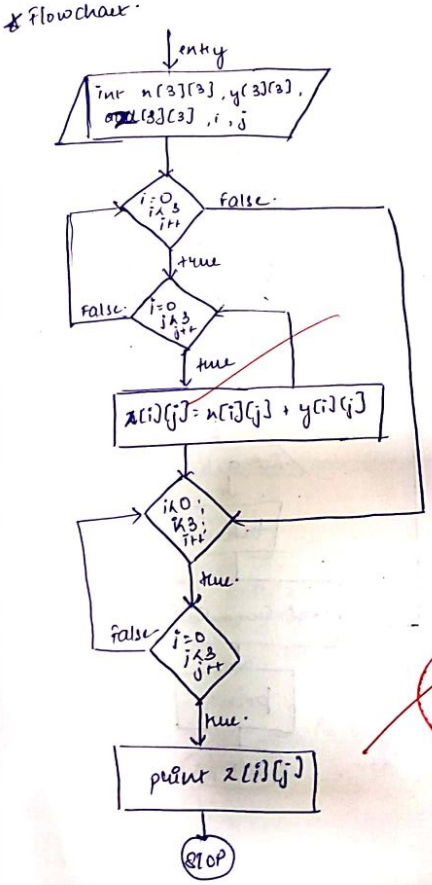
Step1: Initalize program & main fn, take variable appriately.

Step2: assign x[3][3] & y[3][3] with appropriate no.

Step3: Using i & j, consequently create for loop and add values x & y of [i][j] to z.

Step4: Finaly using i & j loop display output.

* Flowchart:



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Output:

Enter 2 no: 7 8

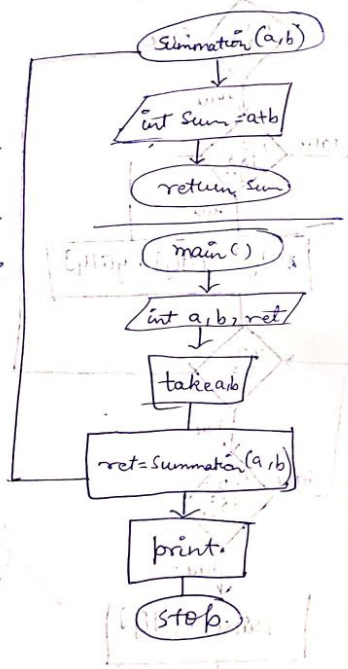
Finding Sum.

value: 15

Algorithm:-

1. Include neccessary libraries create function summation to pass two no. and return 0.
2. In fun' int var sum and add two no. and return sum.
3. Create main fun, initialize var, a, b, ret, take 2 no.s from user to store in a, b.
4. Display output.

Flowchart:



Practical no. 6.

Programs on function

→ Sum of digits of entered number.

```
# include <conio.h>
# include <stdio.h>
int summation(int, int);
int summation(a,b)
{
    int sum = 0;
    sum = a+b;
    return sum;
}
void main()
{
   int a, b, ret;
   clrscr();
   printf("Enter 2 no.");
   scanf("%d %d", &a, &b);
   printf("\n finding sum \n");
   getch();
   ret = summation(a,b);
   printf("value", ret);
   getch();
}
```

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→ Factorial of no. using recursion.

```
#include <stdio.h>
#include <conio.h>
int fact (int)
int fact (a)
{
  if (a==1)
  {
    return 1;
  }
  else
  {
   return (a* fact (a-1));
  }
}
void main()
{
  int a, int ret;
  clrscr();
  printf(" Enter limit :");
  scanf ("%d", &a);
  ret = fact(a);
  print(" In value: %d", ret);
  getch();
}
```


output :-

Enter limit : 10
value : 362 8800

Algorithm

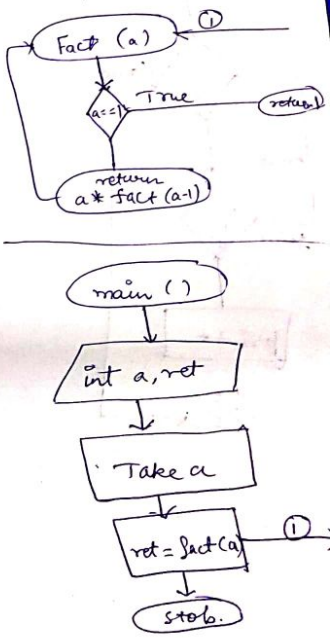
① initialize necessary libraries and create function to pass one argument and return one as int.

② In function, using if, check if value is equal to 1, return 1, else return (value) multiplied by call, sub 1.

③ Create main, initialize 2 variable, take values from use and other to store and call func.

④ Display output.

Flowchart :-



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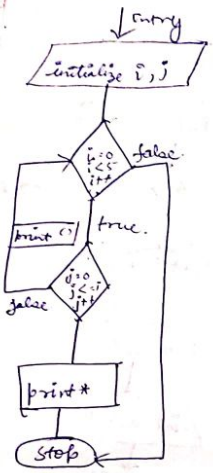
040

Flowchart



Algorithm.

① initialize 2 variables.

② using for loop with appropriate limits, use another for loop in it and print, if false print. (\n) format.

③ Finally end program.

041

Print pattern.

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

```
# include <conio.h>
# include <stdio.h>
void main()
{
  int i, j;
  clrscr();
  for (i=0; i<5; i++)
  {
    for (j=0; j<=i; j++)
    {
      printf("*");
    }
    printf("\n");
  }
  getch();
}
```

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