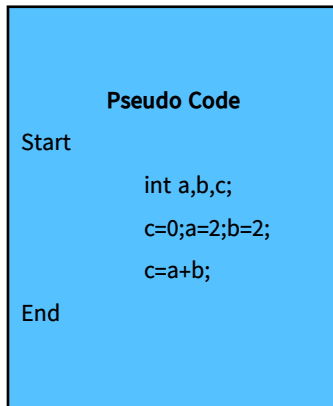
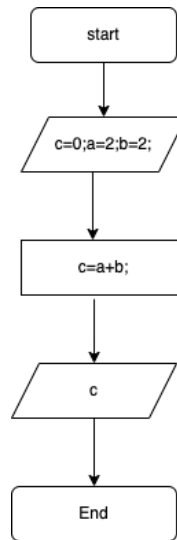


C/C++ Notes

စဉ်	အကြောင်းအရာ	စာမျက်နှာ
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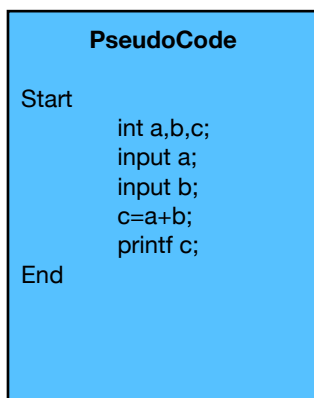
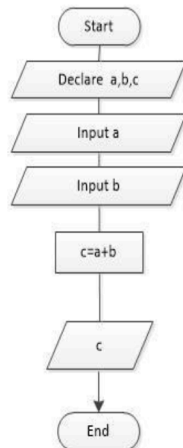
စဉ်	အကြောင်းအရာ	စာမျက်နှာ
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1. a+b (without primitive values)**Flowchart****C++ Code**

```

#include <iostream.h>
#include <conio.h>

int main()
{
    clrscr();
    int a, b, c;
    a = 2;
    b = 2;
    c = a + b;
    cout << "Anwser =" << c;
    getch();
    return 0;
}
  
```

2. a+b (with input)**Flowchart****C Code**

```

#include<stdio.h>
#include<conio.h>
int main()
{
    clrscr();
    int a,b,c;
    printf("Enter a:");
    scanf("%d", &a);

    printf("Enter b:");
    scanf("%d", &b);

    c=a+b;
    printf("The result is : %d",
c);
    getch();
    return 0;
}
  
```

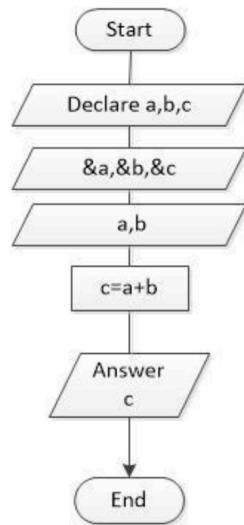
3. Input a and b with &a,&b

PseudoCode

```

Start
    declare long int a,b,c;
    &a,&b,&c;
    input a,b;
    c=a+b;
    cout<< c;
End
  
```

Flowchart



C Code

```

#include<conio.h>
#include<iostream.h>
#include<stdio.h>
void main()
{
    clrscr();
    long int a,b,c;
    printf("%p\n",&a);
    printf("%p\n",&b);
    printf("%p\n",&c);
    printf("Enter the a and b \n ");
    scanf("%d%d",&a,&b);
    c=a+b;
    printf("The answer is  %d ",c);
    getch();
}
  
```

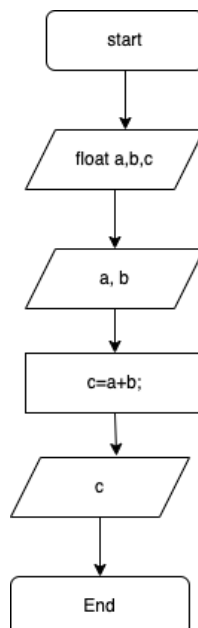
4. Operator(+,-,x,/,%,float)

PseudoCode

```

Start
    float a,b,c=0;
    input a,b;
    c=a+b;
    Output c;
End
  
```

Flowchart



C Code

```

#include<conio.h>
#include <iostream.h>
#include <stdio.h>
int main()
{
    clrscr();
    float a, b, c = 0;
    printf("Enter the a and b \n ");
    scanf("%f%f", &a, &b);
    c = a / b;
    printf("%f / %f = %f", a, b, c);
    getch();
    return 0;
}
  
```

5. Triangle Area

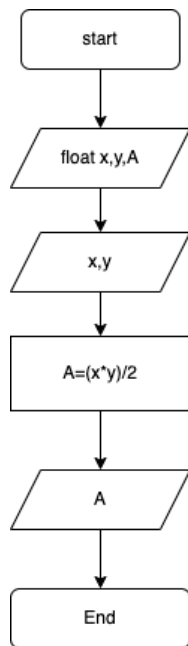
Pseudo Code

Start

```
float x,y,A;
input x,y;
A=(x*y)/2;
Output A;
```

End

Flowchart



C Code

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

void main()
{
    clrscr();
    float x,y,A;
    printf("Enter base and height ");
    scanf("%f%f",&x,&y);
    A=(x*y)/2;
    printf("The area of Triangle is %f",A);
    getch();
}
```

6. Circle Area

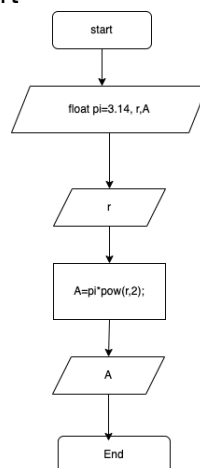
Pseudo Code

Start

```
float r,A, pi=3.14;
input r;
A=pi*pow(r,2);
Output A;
```

End

Flowchart



c++ code

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

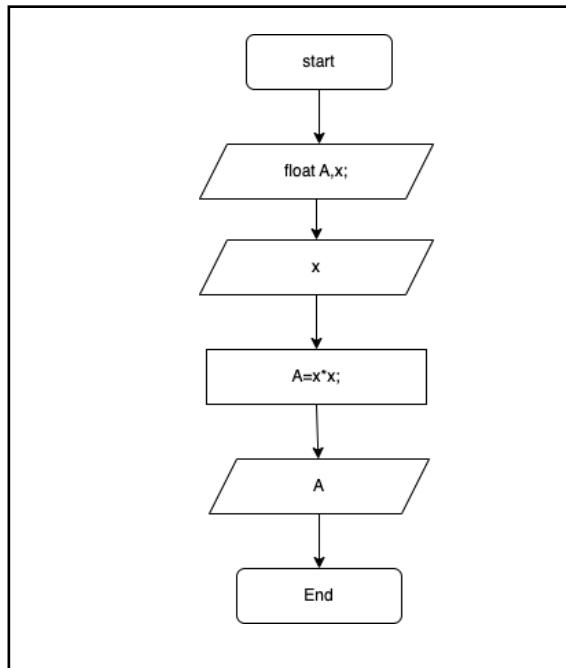
int main(){
    clrscr();
    float pi=3.142;
    float A,r;
    cout<<"enter radius value:";
    cin>>r;
    A=pi*pow(r,2);
    cout<<"Area of circle:"<<A;
    getch();
    return 0;
}
```

7. Square Area

Pseudo Code

Start
float A,x;
input x;
A=x*x;
Output A;
End

Flowchart



C++ Code

```

#include <iostream>
#include <math.h>
using namespace std;

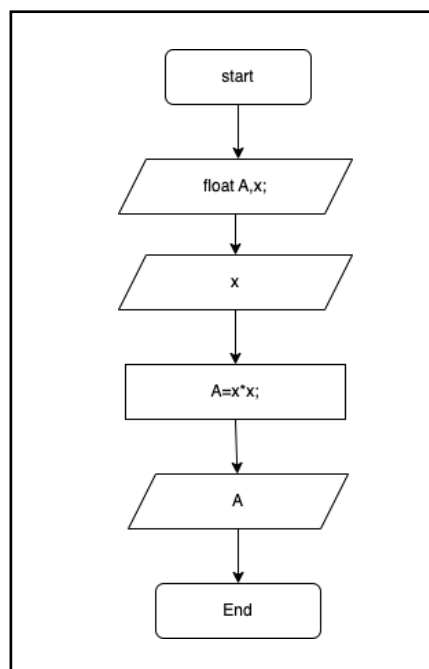
int main()
{
    //clrscr();
    float A, x;
    cout << "enter radius
value:";
    cin >> x;
    A = x * x;
    cout << "Area of circle:"
<< A;
    // getch();
    return 0;
}
  
```

8. Rectangle Area

Pseudo Code

Start
float A,x;
input x;
A=x*x;
Output A;
End

Flowchart



C Code

```

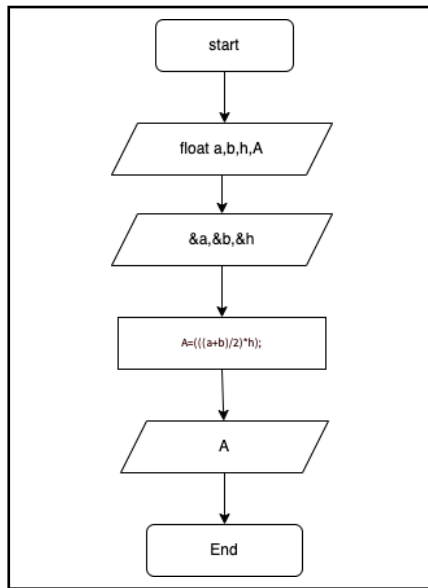
#include<conio.h>
#include<iostream.h>
#include<stdio.h>
void main()
{
    clrscr();
    float x,A;
    printf("Enter length ");
    scanf("%d",&x);
    A=x*x;
    printf("Rectangle Area is %d ",A);
    getch();
}
  
```

9. Trapezium Area

Pseudo Code

Start
float a,b,h,A;
Input &a,&b,&h;
 $A = ((a+b)/2) * h$;
Output A;
End

Flowchart



C Code

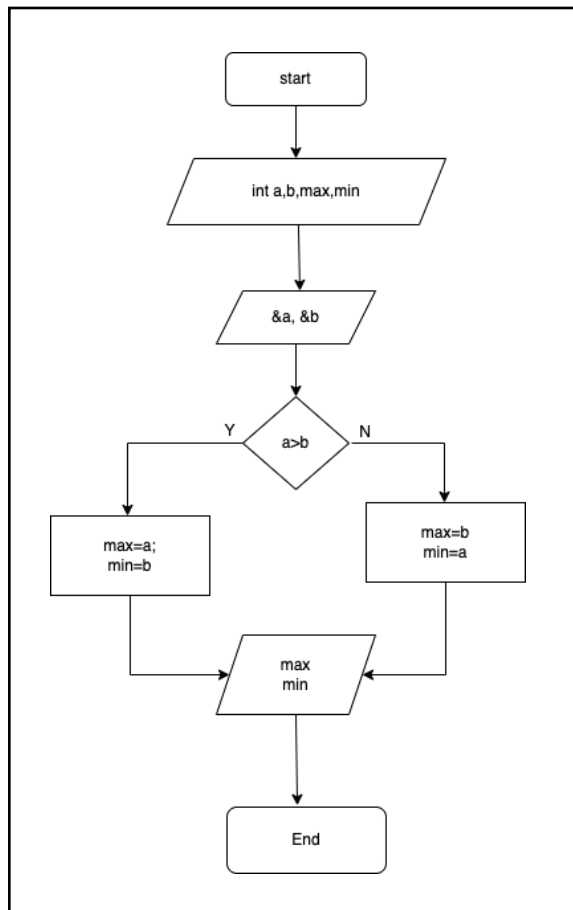
```
#include<conio.h>
#include<iostream.h>
#include<stdio.h>
void main()
{
    clrscr();
    float a,b,h,A;
    printf("Enter length and width and height ");
    scanf("%d%d%d",&a,&b,&h);
    A=(((a+b)/2)*h);
    printf("The area of Trapezium is %d ",A);
    getch();
}
```

10. IF statement (max/min)

PseudoCode

Start
int a,b,max,min
input &a,&b;
if(a>b)
Yes max=a;min=b;
No max=b; min=a;
Output maximin
End

Flowchart



C Code

```
#include<conio.h>
#include<iostream.h>
#include<math.h>
#include<stdio.h>
void main()
{
    clrscr();
    int a,b,max,min;
    printf("Enter a and b ");
    scanf("%d%d",&a,&b);
    if(a>b)
    {
        max=a;
        min=b;
    }
    else
    {
        max=b;
        min=a;
    }
    printf("The maximum is %d\n ",max);
    printf("The minimum is %d ",min);
    getch();
}
```

11. IF statement (Compare a>b>c)

```
#include<conio.h>
#include<iostream.h>
void main()
{
    clrscr();
    int a=0,b=0,c=0,M,G,L;
    cout<<"Enter a"<<endl;
    cin>>a;
    cout<<"Enter b"<<endl;
    cin>>b;
    cout<<"Enter c"<<endl;
    cin>>c;

    //a>b => a>c
    if(a>b)
    {
        if(a>c)
        {
            if(b>c)
            {
                G=a;
                M=b;
                L=c;
            }
            else
            {
                G=a;
                M=c;
                L=b;
            }
        }
        else
        {
            G=c;
            M=b;
            L=a;
        }
    }

    //b>a
    if(b>a)
    {
        if(b>c)
        {
            if(a>c)
            {
                G=b;
                M=a;
                L=c;
            }
            else
            {
                G=b;
                M=c;
                L=a;
            }
        }
    }

    //c>a
    if(c>a)
    {
        if(c>b)
        {
            if(a>b)
            {
                G=c;
                M=a;
                L=b;
            }
            else
            {
                G=c;
                M=b;
                L=a;
            }
        }
    }

    cout<<"The Greatest Number"<<G<<endl;
    cout<<"The Middle number"<<M<<endl;
    cout<<"The Small number"<<L<<endl;
    getch();
}
```

Pseudo Code

Start

```
int a=0,b=0,c=0,G,M,L;
int a,b,c;
```

if(a>b)

if(a>c)

if(b>c)

G=a; M=b; L=c;

else

G=a; M=c; L=b;

else

G=c; M=b; L=a;

if(b>a)

if(b>c)

if(a>c)

G=b; M=a; L=c;

else

G=b; M=c; L=a;

if(c>a)

if(b>c)

if(a>c)

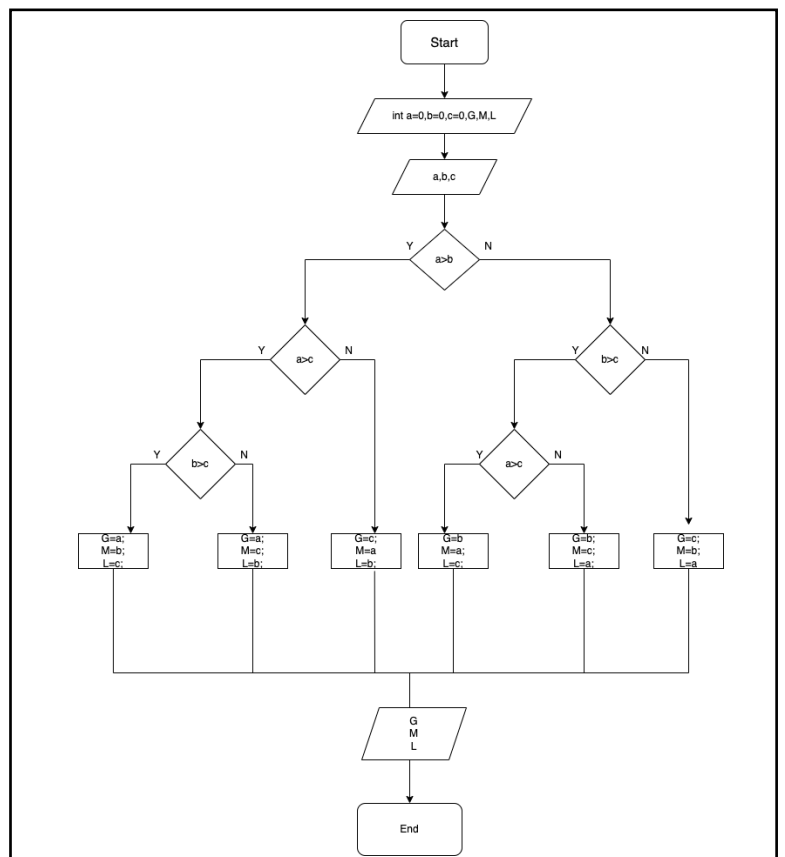
G=c; M=a; L=b;

else

G=c; M=b; L=a;

Output G; M; L;

End



12.All Area

C code, Pseudo Code & Flowchart

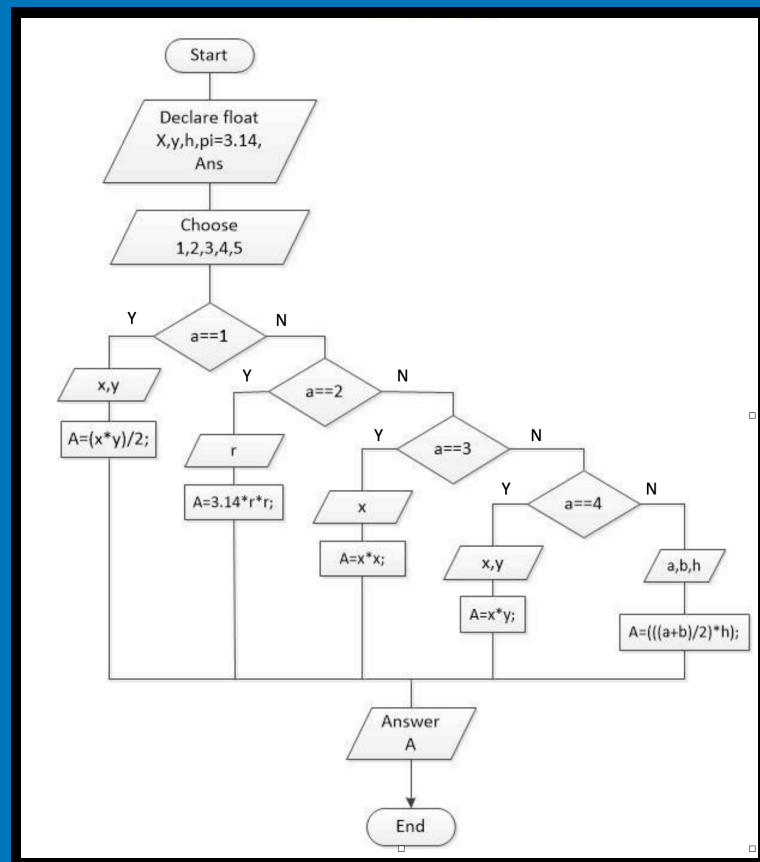
```
#include<conio.h>
#include<iostream.h>
#include<math.h>
#include<stdio.h>
Int main()
{
    clrscr();
    int a;
    float x,y,h,pi=3.14,Ans;
    printf("If you want to calculate the following area, enter number of area id.\n");
    printf("Choose any num 1 to 5");
    scanf("%d",&a);

    if(a==1)
    {
        clrscr();
        printf("Enter base and height\n");
        scanf("%f%f",&x,&y);
        Ans=(x*y)/2;
    }
    else if(a==2)
    {
        clrscr();
        printf("Enter radius \n ");
        scanf("%f",&r);
        Ans=pi*r*r;
    }
    else if(a==3)
    {
        clrscr();
        printf("Enter length\n");
        scanf("%f",&x);
        Ans=x*x;
    }
    else if(a==4)
    {
        clrscr();
        printf("Enter length and width \n");
        scanf("%f%f",&x,&y);
        Ans=x*y;
    }
    else
    {
        clrscr();
        printf("Enter length and width and height \n");
        scanf("%f%f%f",&a,&b,&h);
        Ans=((a+b)*0.5*h);
    }
    printf("The value of area is %f\n",Ans);
    getch();
    return 0;
}
```

Start

```
int a;
float a, b, x, y, h, pi=3.14, Ans;
input a;
if(a==1)
    input x,y;
    Ans=(x*y)/2;
if(a==2)
    input r;
    Ans=pi*r*r;
if(a==3)
    input x;
    Ans=x*x;
if(a==4)
    input x,y;
    Ans=x*y;
else
    input a,b,h;
    Ans=((a+b)/2)*h;
Output Ans;
```

End



13.For Loop

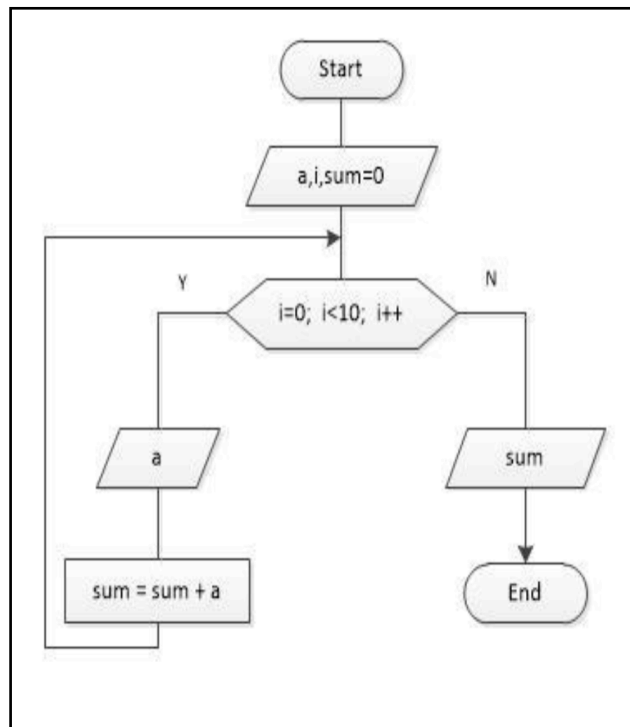
Pseudocode

Start

```
int a,i,sum=0;
for(i=0;i<10; i++)
input a;
sum=sum+a;
output sum;
```

End

Flowchart



C code

```
#include<conio.h>
#include<iostream.h>
#include<math.h>
#include<stdio.h>
void main()
{
    clrscr();
    int a,i,sum=0;
    for(i=0;i<10;i++)
    {
        printf("enter num ");
        scanf("%d",&a);
        sum=sum+a;
    }
    printf("Answer is %d\n",sum);
    getch();
}
```

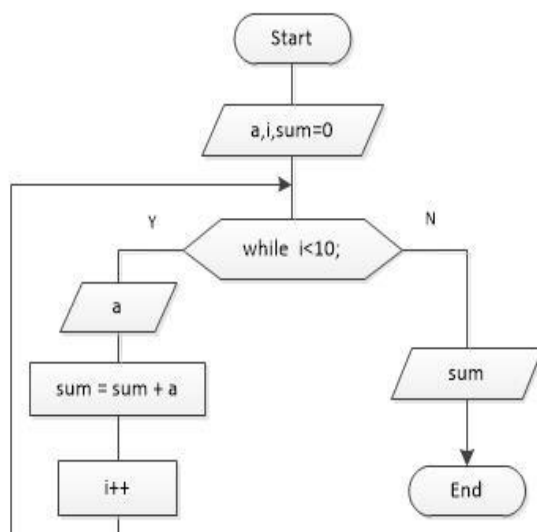
14.While Loop

while Loop (i++)

Start

```
int a,i,sum=0;
while(i<10)
enter num
a
process sum=sum+a;
i++;
Answer is sum
```

End



```
#include<conio.h>
#include<iostream.h>
#include<math.h>
void main()
{
    clrscr();
    int a,i,sum=0;
    while(i<10)
    {
        cout<<"enter num ";
        cin>>a;
        sum=sum+a;
        i++;
    }
    cout<<"Answer is "<<sum<<endl;
    getch();
}
```

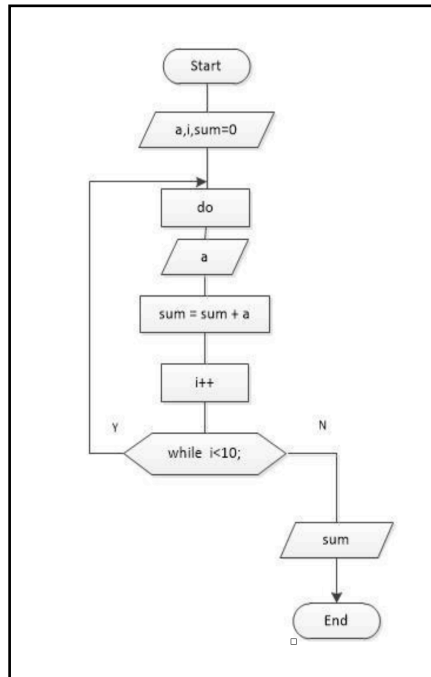
15. Do While

Pseudo code

```

Start
    int a,i,sum=0;
    input a;
    sum=sum+a;
    i++;
    while(i<10)
    output sum;
End
  
```

Flow chart



C code

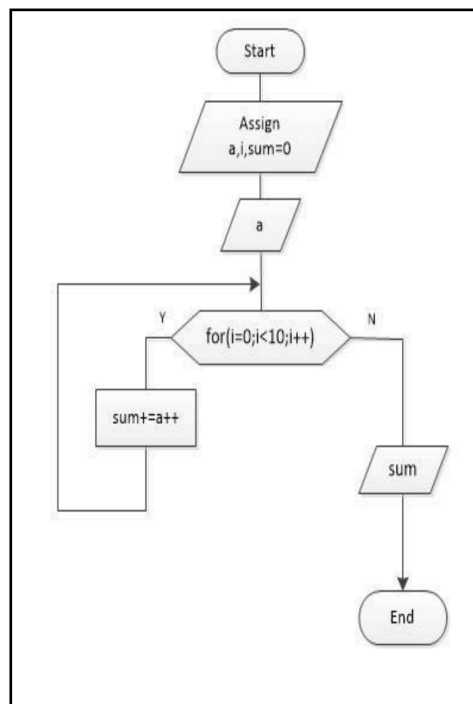
```

#include<conio.h>
#include<iostream.h>
#include<math.h>
#include<stdio.h>
void main()
{
    clrscr();
    int a,i,sum=0;
    do
    {
        printf("enter num ");
        scanf("%d",&a);
        sum=sum+a;
        i++;
    }
    while(i<10);
    printf("Answer is %d\n",sum);
    getch();
}
  
```

16. Input time for looping

```

Start
    int a, i , sum=0;
    input a;
    for(i=0;i<10;i++)
    sum+=a++;
    output sum;
End
  
```



```

#include <iostream>
#include <math.h>
#include <stdio.h>

using namespace std;
int main()
{
    int a, i;
    int sum = 0;
    printf("Enter num ");
    scanf("%d",&a);
    for (i = 0; i < 10; i++)
    {
        sum += a++;
    }
    printf("Answer is %d ", sum);
    return 0;
}
  
```

17.Text Attributes

Background color

```

#include <conio.h>
#include <iostream.h>
#include <stdio.h>
void main()
{
    int i, j;
    clrscr();
    for (i=0; i<9; i++)
    {
        for (j=0; j<30;j++)
        {
            cout<<("A");
            cout<<("\r\n");
            textcolor(i+1);

            textbackground(i);
        }
        getch();
    }
}

```

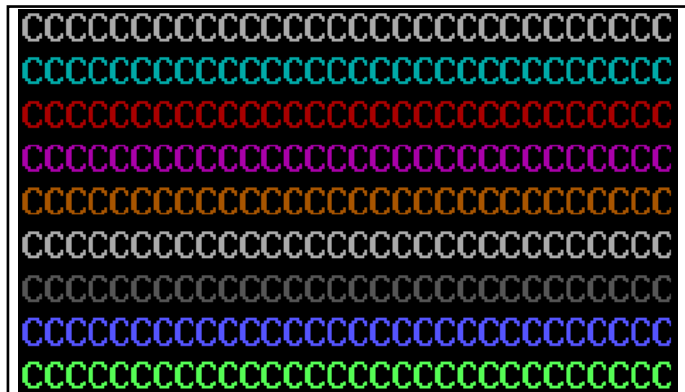
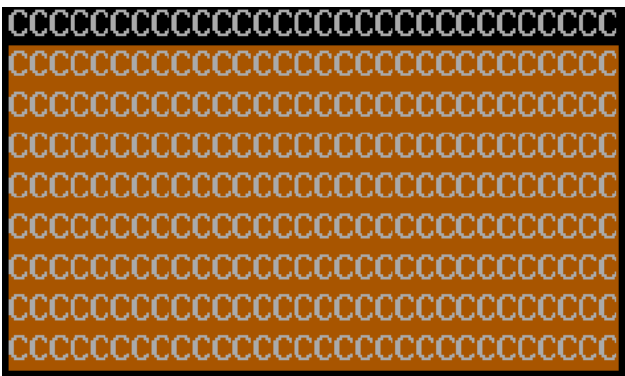
Foreground color

```

#include <conio.h>
#include <iostream.h>
#include <stdio.h>
void main()
{
    int i, j;
    clrscr();
    for (i=0; i<9; i++)
    {
        for (j=0; j<30;j++)
        {
            cprintf("C");
            cprintf("\r\n");
            textcolor(i+3);

        }
        getch();
    }
}

```

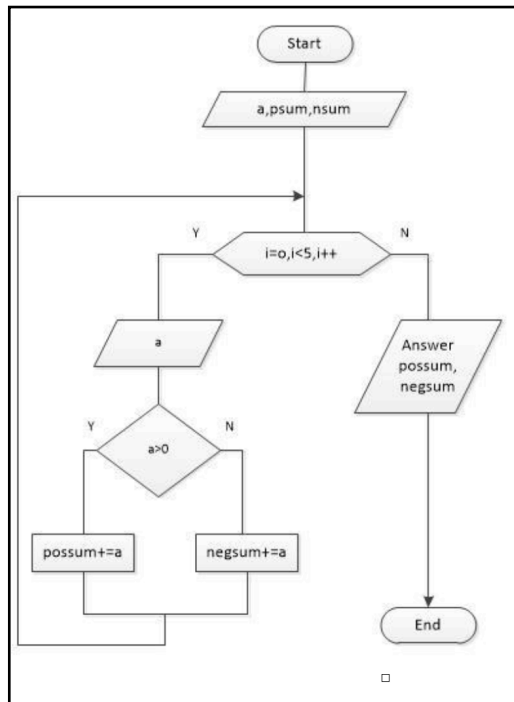


18. Positive Sum and Negative Sum (for loop)

Start

```
int a, possum=0, negsum=0;
for(int i=0; i<5; i++)
input a;
if(a>0)
    possum+=a;
else if(a<0)
    negsum+=a;
output possum;
output negsum;
```

End



```
#include<conio.h>
#include<stdio.h>
void main()
{
    clrscr();
    int a, possum=0, negsum=0;

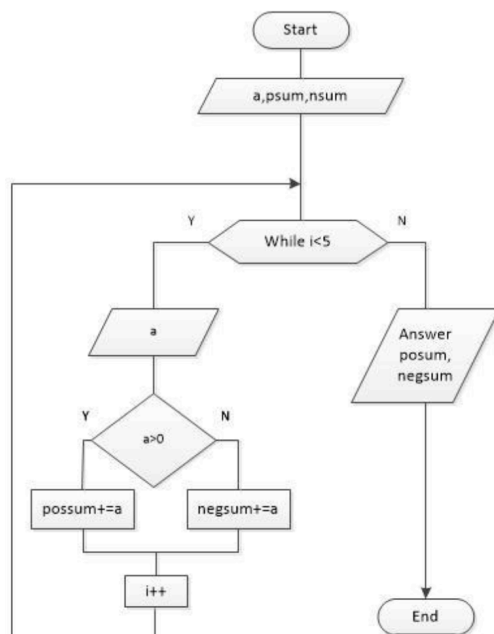
    for(int i=0; i<5; i++)
    {
        printf("\nPlease enter a =");
        scanf("%d", &a);
        if(a>0)
        {
            possum+=a;
        }
        else if(a<0)
        {
            negsum+=a;
        }
    }
    printf("\nPositive sum = %d ", possum);
    printf("\nNegative sum = %d ", negsum);
    getch();
}
```

19. Positive Sum and Negative Sum(while loop)

Start

```
int a, psum=0, nsum=0;
while(i<5)
input a;
if(a>0)
    psum+=a;
else if(a<0)
    nsum+=a;
i++;
output psum;
output nsum;
```

End



```
#include<conio.h>
#include<stdio.h>
void main()
{
    clrscr();
    int a, psum=0, nsum=0, i=0;

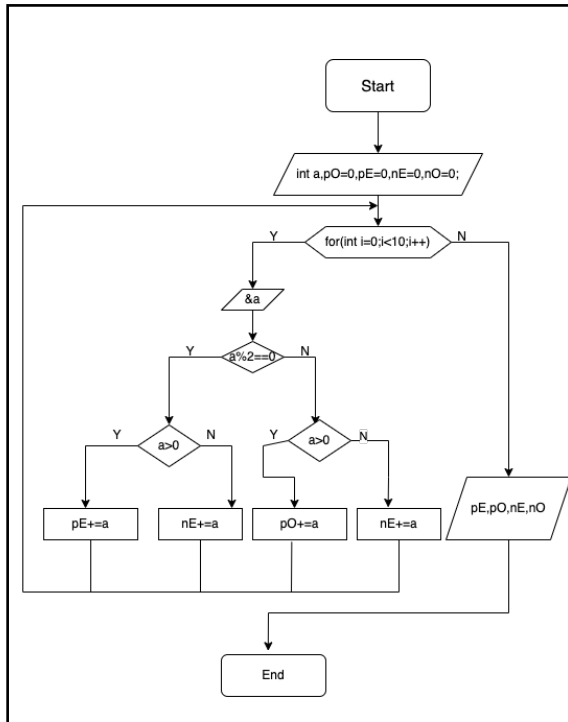
    while (i<5)
    {
        printf("Please enter value a ");
        scanf("%d", &a);
        if(a>0)
        {
            psum+=a;
        }
        else if(a<0)
        {
            nsum+=a;
        }
        i++;
    }
    printf("Positive sum = %d", psum);
    printf("Negative sum = %d", nsum);
    getch();
}
```

20. Positive Even, Odd and Negative Even, Odd

Start

```
int a,pO=0,pE=0,nE=0,nO=0;
for(int i=0;i<10;i++)
input &a;
if(a%2==0)
    if(a>0)    pE+=a;
    else      nE+=a;
else
    if(a>0)    pO+=a;
    else      nO+=a;
output pO,nO,pE,nE;
```

End



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

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

```
void main()
```

```
{
```

```
clrscr();
```

```
int a,pO=0,pE=0,nE=0,nO=0;
```

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

```
{
```

```
printf("\nenter any integer = ");
```

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

```
if(a%2==0)
```

```
{
```

```
if(a>0)
```

```
{
```

```
pE+=a;
```

```
}
```

```
else
```

```
{
```

```
nE+=a;
```

```
}
```

```
}
```

```
else
```

```
{
```

```
if(a>0)
```

```
{
```

```
pO+=a;
```

```
}
```

```
else
```

```
{
```

```
nO+=a;
```

```
}
```

```
}
```

```
}
```

```
printf("\npO = %d\npE=%d
```

```
\nnE=%d\nnO=%d",pO,pE,nE,nO);
```

```
getch();
```

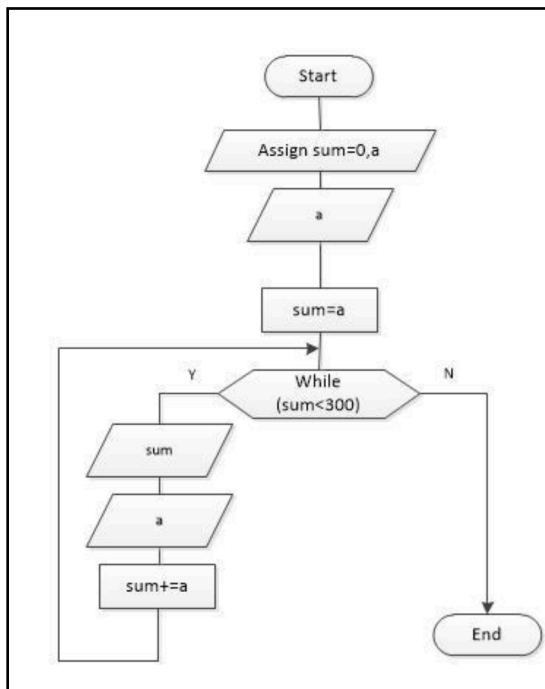
```
}
```

21. sum<300 (while loop)

Start

```
int a, sum=0;
input &a;
sum=a;
while(sum<300)
output sum;
input a;
sum+=a;
```

End



```
#include<conio.h>
#include<stdio.h>
#include<iostream.h>
Int main()
{
    clrscr();
    int sum=0,a;

    printf("Enter num : ");
    scanf("%d",&a);

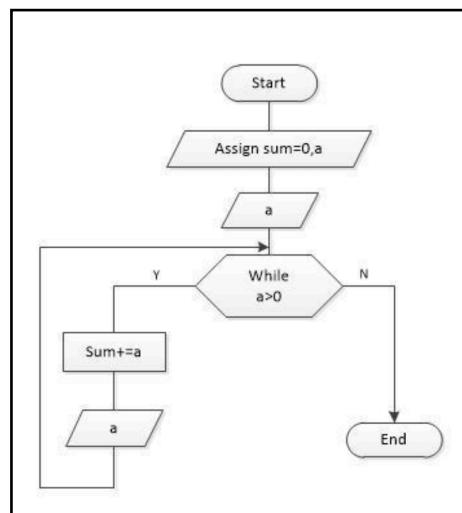
    sum=a;
    while(sum<300)
    {
        printf("%d\n",sum);
        printf("Enter num : ");
        scanf("%d",&a);
        sum=sum+a;
    }
    getch();
    return 0;
}
```

22. a>0 (no access minus value)

Start

```
int a,sum=0;
input a;
while(a>0)
sum+=a;
input a;
```

End



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

void main()
{
    clrscr();
    int a,sum=0;

    cout<<"Enter num:";
    cin>>a;

    while(a>0)
    {
        sum+=a;

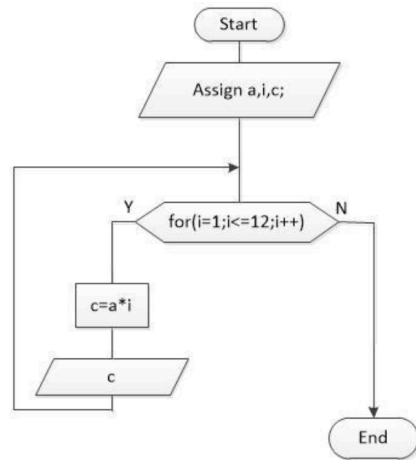
        cout<<"Enter num:";
        cin>>a;
    }
    getch();
}
```

23. Multiple

Start

```
int a, i, c;
for(i=0; i<12; i++)
    c=a*i
output c;
```

End



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

```
void main()
{
    clrscr();
    int a,i,c;
    printf("enter num:=");
    scanf("%d", &a);
    for(i=1; i<=12; i++)
    {
        c=a*i;
        printf("%d*%d=%d\n", a, i, c);
    }
    getch();
}
```

24. input a, b, c (a*b) to (a*c)

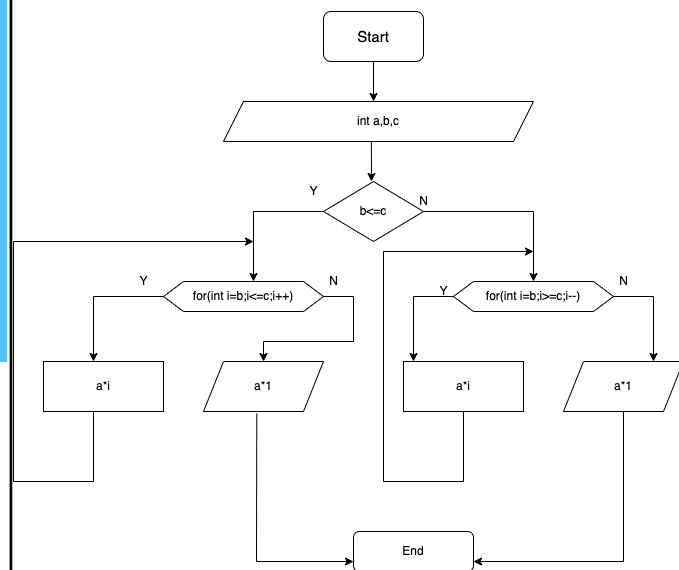
```
#include<conio.h>
#include<iostream.h>
#include<math.h>
void main()
{
    clrscr();
    int a,b,c;
    cout<<"Enter a value";
    cin>>a;
    cout<<"Enter b ";
    cin>>b;
    cout<<"Enter c";
    cin>>c;

    if (b<=c)
    {
        for(int i=b; i<=c; i++)
        {
            cout<<a<<"*"<<i<<"="<<a*i<<endl;
        }
    }
    else
    {
        for(int i=b; i>=c; i--)
        {
            cout<<a<<"*"<<i<<"="<<a*i<<endl;
        }
    }
    getch();
}
```

Start

```
int a,b,c;
input a;
input b;
input c;
if(b<=c)
for(int i=b; i<=c; i++)
a*i
else
for(int i=b; i>=c; i- )
a*i
```

End



25. Prime Number

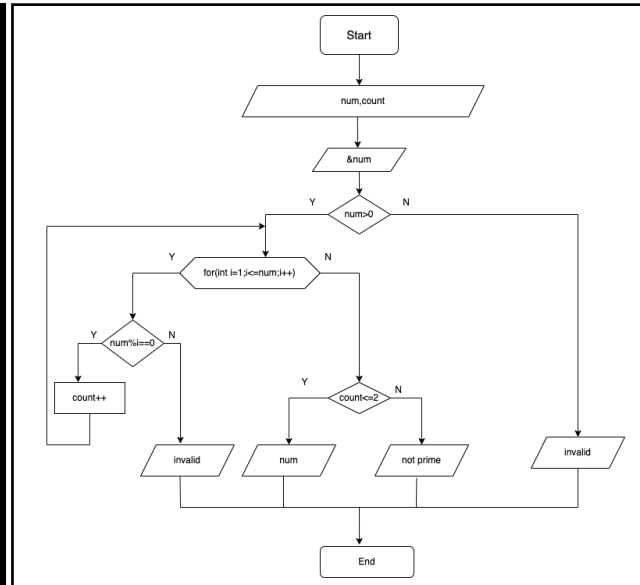
```

#include<iostream.h>
#include<conio.h>
#include<stdio.h>
void main()
{
    clrscr();
    int num=0, count=0;
    printf("Enter num : ");
    scanf("%d",&num);

    if(num>0)
    {
        for(int i=1;i<=num; i++)
        {
            if(num%i==0)
            {
                count++;
            }
            else
            printf("invalid");
        }
        if(count<=2)
        {
            printf("%d is prime number",num);
        }
        else
        {
            printf("%d is not prime number",num);
        }
    }
    else
    {
        printf("invalid");
    }

    getch();
}

```



Start

```

int num=0;count=0;
input &num;
if(num>0)
    for(int i=0;i<=num;i+)
        if(num%i==0)
            count++;
        else
            Output invalid
    if(count<=2)
        output num;
    else
        Output Invalid
else
    Output Invalid

```

End

26. Factor

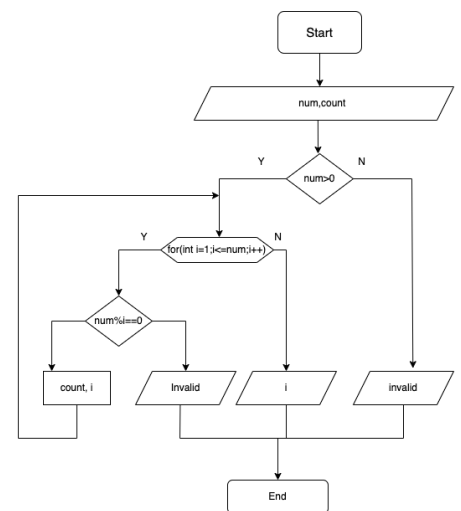
```
#include<iostream.h>
#include<conio.h>
#include<stdio.h>
void main()
{
    clrscr();
    int num=0, count=0;
    printf("Enter num : ");
    scanf("%d",&num);

    if (num>0)
    {
        for(int i=1;i<=num; i++)
        {
            if (num%i==0)
            {
                count++;
                printf("%d\n",i);
            }
        }
        printf("Upper %d numbers are %d of factor numbers ", count,num);
    }
    else
        printf("Invalid");
    getch();
}
```

Start

```
int num=0, count=0;
if(num>0)
for(int i=1;i<=num;i++)
if(num%i==0)
count++;
output i;
num;
```

End



27. Factorial

```
#include <iostream>
#include <stdio.h>
using namespace std;

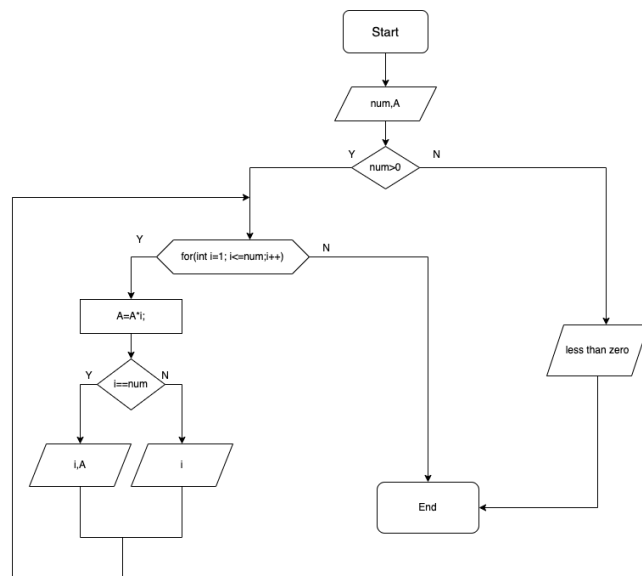
int main()
{
    int num = 1, A = 1;
    printf("Enter num : ");
    scanf("%d", &num);

    if (num > 0)
    {
        for (int i = 1; i <= num; i++)
        {
            A = A * i;
            if (i == num)
            {
                printf("%d = %d ", i, A);
            }
            else
            {
                printf("%d * ", i);
            }
        }
    }
    else
    {
        printf("It's less than zero");
    }
    return 0;
}
```

Start

```
int num=1,A=1;
input num;
if(num>0)
    for(int i=0;i<=num;i+
+)
        A=A*i;
        if(i==num)
        i, A;
        else
        i;
    else
    less than zero;
```

End



28.Fibonacci

```
#include<iostream.h>
#include<conio.h>
#include<stdio.h>
void main()
{
    clrscr();
    int result=0, num1=0,num2=0, limit=0;
    printf("Enter num1 : ");
    scanf("%d",&num1);
    printf("Enter num2 : ");
    scanf("%d",&num2);
    printf("Enter limit :");
    scanf("%d",&limit);

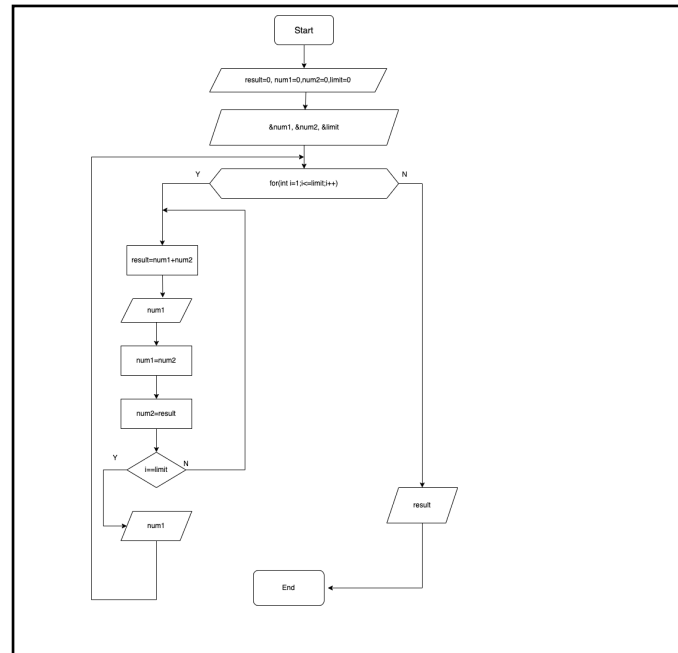
    for(int i=1; i<=limit; i++)
    {
        result=num1+num2;
        printf("%d +",num1);
        num1=num2;
        num2=result;
        if(i==limit)
            printf("%d ",num1);
    }
    printf("= %d",result);

    getch();
}
```

Start

```
int result=0,num1=0,num2=0,limit=0;
&num1, &num2, &limit;
for(int i=1; i<=limit; i++)
    result=num1+num2;
    output result;
    num1=num2;
    num2=result;
    if(i==limit)
        output num1;
        output result;
```

End

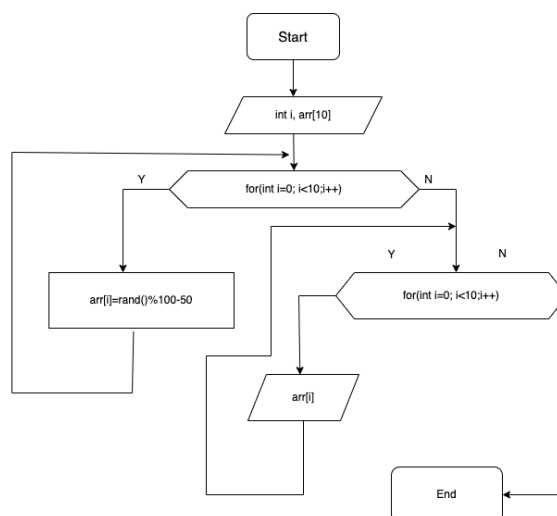


29.Random Array

```
#include<conio.h>
#include<iostream.h>
#include<math.h>
#include<stdlib.h>
#include<time.h>
void main()
{
    clrscr();
    randomize();
    int i,arr[10];

    for(i=0; i<10;i++)
    {
        arr[i]=rand()%100-50;
    }
    cout<<"\n Randomize Array: ";
    for(i=0; i<10; i++)
    {
        cout<<arr[i]<<" ";
    }

    getch();
}
```



Start

```
int i, arr[10];
for(int i=0; i<10;i++)
    arr[i]=rand()%100-50;
for(int i=; i<10;i++)
    arr[i];
```

End

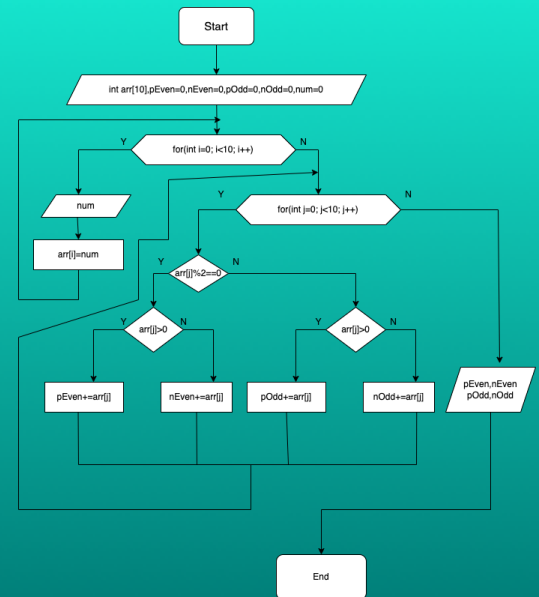
30.Array (Positive Even, Negative Even and Positive Odd, Negative Odd)

```
#include<conio.h>
#include<iostream.h>
#include<math.h>
void main()
{
    clrscr();
    int arr[10],pEven=0, pOdd=0, nEven=0, nOdd=0, num=0;
    for(int i=0; i<10;i++)
    {
        cout<<"Enter num";
        cin>>num;
        arr[i]=num;
    }
    for(int j=0; j<10;j++)
    {
        if(arr[j]%2==0)
        {
            if(arr[j]>0)
            {
                pEven+=arr[j];
            }
            else
                nEven+=arr[j];
        }
        else
        {
            if(arr[j]>0)
                pOdd+=arr[j];
            else
                nOdd+=arr[j];
        }
    }
    cout<<"Positive PositiveEven"<<pEven<<endl;
    cout<<"Positive PositiveOdd"<<pOdd<<endl;
    cout<<"Negative NegativeEven"<<nEven<<endl;
    cout<<"Negative NegativeOdd"<<nOdd<<endl;
    getch();
}
```

Start

```
int arr[10],pEven=0,pOdd=0,nEven=0,nOdd=0,num=0;
for(int i=0;i<10;i++)
input num;
arr[i]=num;
for(int i=0; j<10;j++)
if(arr[j]%2==0)
{
    if(arr[j]>0)
        pEven+=arr[j];
    else
        nEven+=arr[j];
}
else
{
    if(arr[j]>0)
        pOdd+=arr[j];
    else
        nOdd+=arr[j];
}
pEven,nEven,pOdd,nOdd
```

End



31.Matrix Array

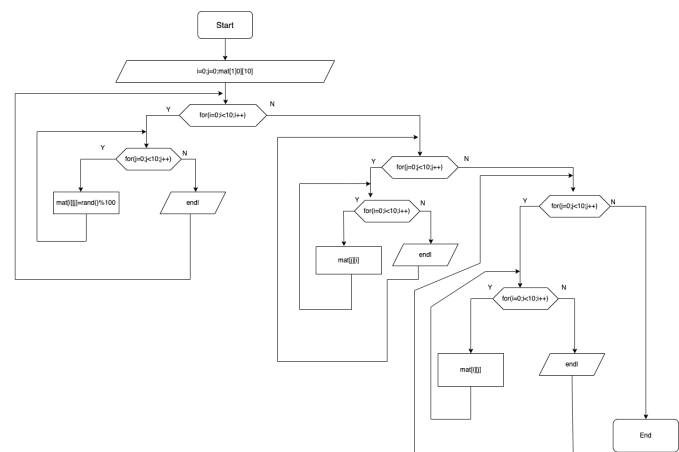
```
#include<conio.h>
#include<iostream.h>
#include<math.h>
#include<time.h>
#include<stdlib.h>
#include<iomanip.h>

void main()
{
    clrscr();
    randomize();
    int i=0,j=0,mat[10][10], a,b;
    cout<<"Enter a";
    cin>>a;
    cout<<"Enter b";
    cin>>b;
    for(i=0;i<10;i++)
    {
        for(j=0;j<10;j++)
        {
            mat[i][j]=rand()%30;
        }
        cout<<endl;
    }
    cout<<endl;
    for(i=0;i<10;i++)
    {
        cout<<endl;
        for(j=0;j<10;j++)
        {
            cout<<setw(4)<<mat[i][j];
        }
        cout<<endl;
    }
    getch();
}
```

Start

```
int i=0,j=0,mat[10][10],a,b;
input a,b;
for(i=0;i<10;i++)
    for(j=0;j<10;j++)
        mat[i][j]=rand()%30;
for(i=0;i<10;i++)
    for(j=0;j<10;j++)
        mat[i][j];
```

End



32. i, j input and Reverse Matrix

```

#include<conio.h>
#include<iostream.h>
#include<math.h>
#include<time.h>
#include<stdlib.h>
#include<iomanip.h>
#define length 20

void main()
{
    clrscr();
    randomize();
    int i=0,j=0,mat[length][length];
    for(i=0;i<10;i++)
    {
        for(j=0;j<length;j++)
        {
            mat[i][j]=rand()%100;
        }
    }
    cout<<"j, i Loop, j, i result "<<endl;
    for(j=0;j<length;j++)
    {
        for(i=0;i<10;i++)
        {
            cout<<setw(4)<<mat[i][j];
        }
        cout<<endl;
    }
    cout<<"j, i Loop, i,j result "<<endl<<endl;
    for(j=0;j<length;j++)
    {
        for(i=0;i<length;i++)
        {
            cout<<setw(4)<<mat[i][j];
        }
        cout<<endl;
    }

    getch();
}

```

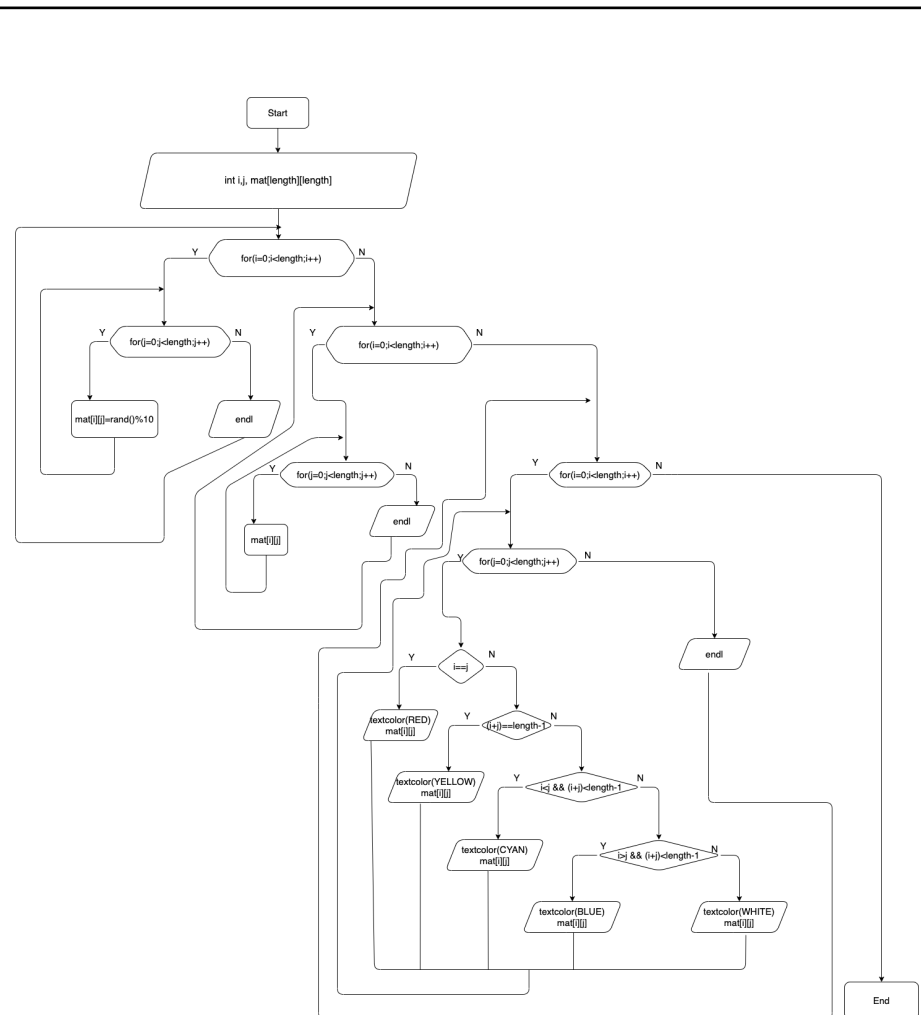
Start

```

#define length 10
int i=0,j=0;mat[length][length];
for(i=0;i<10;i++)
    for(j=0;j<length;j++)
        mat[i][j]=rand()%100
cout<<endl
for(j=0;j<10;j++)
    for(i=0;i<length;i++)
        mat[i][j];
        cout<<endl;
cout<<endl;

for(j=0;j<10;j++)
    for(i=0;i<length;i++)
        mat[i][j]
        cout<<endl

```



33. Matrix and Textcolor

```
#include<conio.h>
#include<iostream.h>
#include<math.h>
#include<time.h>
#include<stdlib.h>
#include<iomanip.h>
#include<stdio.h>
#define length 20

void main()
{
    clrscr();
    randomize();
    int i,j;
    int mat[length][length];
    for(i=0;i<length;i++)
    {
        for(j=0;j<length;j++)
        {
            mat[i][j]=rand()%10;
        }
        // length++;
    }
    //Random Array
    for(i=0; i<length; i++)
    {
        for(j=0;j<length;j++)
        {
            cout<<setw(4)<<mat[i][j];
        }
        cout<<endl;
    }
    cout<<endl;
    for(i=0;i<length;i++)
    {
        for(j=0;j<length;j++)
        {
            //Main Diagonal
            if(i==j)
            {
                textcolor(RED);
                cprintf(" %d",mat[i][j]);
            }
            //Other Diagonal
            else if((i+j)==length-1)
            {
                textcolor(YELLOW);
                cprintf(" %d",mat[i][j]);
            }

            else if(i<j && (i+j)<length-1)
            {
                textcolor(BLUE);
                cprintf(" %d",mat[i][j]);
            }
            else if(i<j && (i+j)>length-1)
            {
                textcolor(CYAN);
                cprintf(" %d",mat[i][j]);
            }
            else if(i>j && (i+j)<length-1)
            {
                textcolor(BLUE);
                cprintf(" %d",mat[i][j]);
            }
            else
            {
                textcolor(WHITE);
                cprintf(" %d",mat[i][j]);
            }
        }
        cout<<endl;
    }
    getch();
}
```

Start

```
define length 20
int i,j;
int mat[length][length];
for(i=0;i<length; i++)
    for(j=0;j<length;j++)
        mat[i][j]=rand()%10;

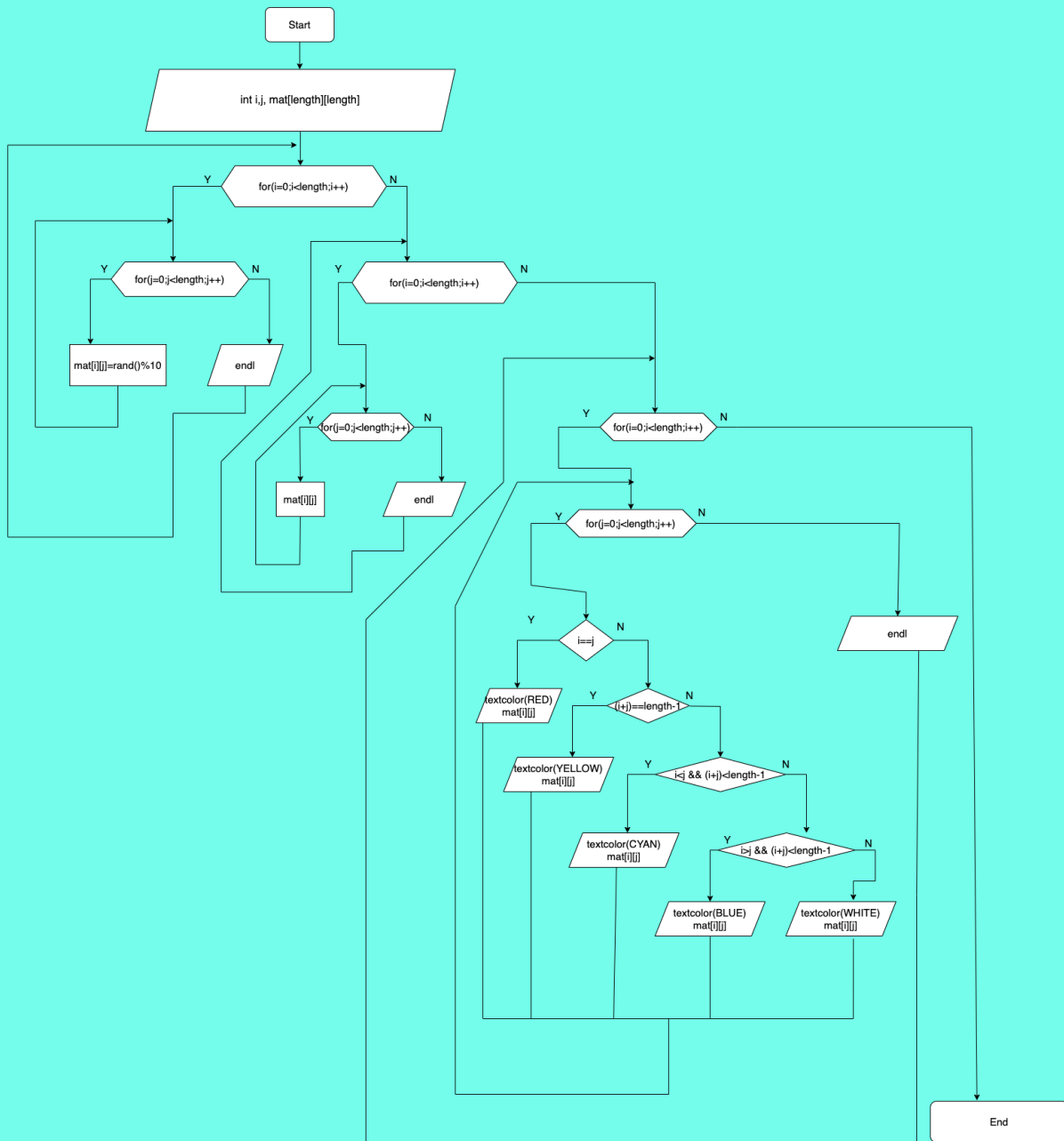
//Output RandomArray
for(i=0;i<length; i++)
    for(j=0;j<length;j++)
        setw(4) mat[i][j]
    endl;

endl;

for(i=0;i<length;i++)
    for(j=0;j<length;j++)
        if(i==j)
            trxtcolor(RED)
            mat[i][j]
        else if((i+j)==length-1)
            textcolor(YELLOW)
            mat[i][j]
        else if(i<j && (i+j)<length-1)
            textcolor(BLUE)
            mat[i][j]
        else if(i<j && (i+j)>length-1)
            textcolor(CYAN)
            mat[i][j]
        else if(i>j && (i+j)<length-1)
            textcolor(BLUE);
            mat[i][j]
        else
            textcolor(WHITE);
            mat[i][j]

    endl
```

End



34. Complex Matrix

```

#include<conio.h>
#include<iostream.h>
#include<math.h>
#include<time.h>
#include<stdlib.h>
#include<iomanip.h>
#include<stdio.h>
#define length 20

void main()
{
    clrscr();
    randomize();
    int i,j;
    int mat[length][length];
    for(i=0;i<length;i++)
    {
        for(j=0;j<length;j++)
        {
            mat[i][j]=rand()%10;
        }
        // length++;
    }
    //Random Array
    for(i=0; i<length; i++)
    {
        for(j=0;j<length;j++)
        {
            // cout<<setw(4)<<mat[i][j];
        }
        // cout<<endl;
    }
    cout<<endl;
    for(i=0;i<length;i++)
    {
        for(j=0;j<length;j++)
        {
            if(i==0)
            {
                textcolor(1);
                cprintf(" %d",mat[i][j]);
            }
            else if(j==0)
            {
                textcolor(2);
                cprintf(" %d",mat[i][j]);
            }
            else if(i==length-1)
            {
                textcolor(3);
                cprintf(" %d",mat[i][j]);
            }
            else if(j==length-1)
            {
                textcolor(4);
                cprintf(" %d",mat[i][j]);
            }
            else if(j==(length-1)/2)
            {
                textcolor(5);
                cprintf(" %d",mat[i][j]);
            }
            else if(i==(length-1)/2)
            {
                textcolor(1);
                cprintf(" %d",mat[i][j]);
            }
            else
            {
                textcolor(WHITE);
                cprintf(" %d",mat[i][j]);
            }
        }
        cout<<endl;
    }
    getch();
}

```

Start

```

define length 20
int i,j, mat[length][length]
for(i=0;i<length;i++)
    for(j=0;j<length;j++)
        mat[i][j]=rand()%10;

for(i=0;i<length;i++)
for(j=0;j<length;j++)
if(i==0)
    textcolor(1), mat[i][j]
else if(j==0)
    textcolor(2), mat[i][j]
else if(i==length-1)
    textcolor(3),mat[i][j]
else if(j==length-1)
    textcolor(4), mat[i][j]
else if(j==(length-1)/2)
    textcolor(5),mat[i][j]
else if(i==(length-1)/2)
    textcolor(1), mat[i][j]
else
    textcolor(WHITE),mat[i][j]
endl;

```

End

35.Pointer

```

#include <iostream>
#include <time.h>
#include <stdlib.h>
#include <stdio.h>
using namespace std;
int main()
{
    // int
    int age = 30;
    int *agePointer;
    agePointer = &age;
    cout << "Normal: " << *agePointer << endl;

    // float
    float floatValue = 50.9f;
    float *floatPointer;
    floatPointer = &floatValue;
    cout << "Float: " << *floatPointer << endl;

    // character
    char character = 'A';
    char *charPointer;
    charPointer = &character;
    cout << "Character :" << *charPointer << endl;

    // array
    int arrayPt[8] = {1, 2, 3, 4, 5, 6, 7, 8};
    int *arrayPointer;
    arrayPointer = arrayPt;
    cout << *(arrayPointer + 2) << endl;
    cout << "arrayPt's Address: " << arrayPt << endl;
    cout << "Array's Address: " << arrayPointer << endl;

    cout << "Complex Array pointer: " << *(&*(&arrayPointer[3] + 3) - 3) << endl;

    //(1)=> &arrayPointer[3] ရဲ့တန်ဖိုးက 3 ရဲ့ Address ရလာမည်။ (value 4ရဲ့ address ရလာမှာ )
    //(2)=> ရလာတဲ့ Address ကို 3 ပေါင်းမည်။( ) 7 ရဲ့ addressရလာမှာ။ )
    //(3)=> ရလာတဲ့ Address ကို dereference လုပ်မည်။ (7 ရဲ့ Addressကို * လုပ်တော့ value 7 ရလာမည်။ )
    //(4)=> 7 ကို 3 နှုတ်တော့ 4 ရတယ်။
    //(5)=> 4 ရဲ့ address ကို ပြန်ယူတယ်။
    //(6)=> အဲ့ဒီAddress ကို reference ပြန်လုပ်တော့ 4 ပဲရတယ်။ နောက်ဆုံးအဖြေဟာ 4ပဲ ရလာမှာ။
    return 0;
}

```

36.Pointer Array

```
#include<conio.h>
#include<iostream.h>
#include<math.h>
#include<stdlib.h>
#include<time.h>
void main()
{
    clrscr();
    int val[4]={1,5,8,9};

    //pointer declare
    int *ptr=val;

    // cout<<"Element are: ";

    for(int i=0; i<4;i++)
    {
        cout<<"val["<<i<<"]= "<<ptr[i]<<endl;
        // cout<<"===== "<<endl;
        cout<<"val ["<<i<<" ]="<<&val[i]<<endl<<endl;
    }
    getch();
}
```

Start

```
int val[4]={1,2,3,4};

int *ptr=val;

for(int i=0; i<4; i++)

    ptr[i];

    &val[i];
```

End

37.Double Pointer with NULL value pointer

```
#include<conio.h>
#include<iostream.h>
#include<math.h>
#include<stdlib.h>
#include<time.h>
void main()
{
    clrscr();
    int val[2][4]={{1,2,6,7},{2,3,4,5}};

    //pointer declare
    int ptr=NULL;
    **ptr=(int**)val;

    for(int i=0; i<2;i++)
    {
        for(int j=0; j<4; j++)
        {
            cout<<"**val["<<i<<" ]"<<"["<<j<<"]= "<<*(*(val+i)+j)<<endl;
            cout<<"ptr="<<ptr[i][j]<<endl<<endl;
            ptr++;
        }
    }
    getch();
}
```

Start

```
int val[2][4]={{1,2,6,7},{2,3,4,5}};
int ptr=NULL;
**ptr=(int**)val;
for(int i=0;i<2; i++)
    for(int j=0;j<4; j++)
        (*(val+i)+j);
        ptr[i][j];
        ptr++;
```

End