**Control structures in C:**

**Mastering Iteration - III (While)**

Write a C program that takes a number as input from the user and determines whether it is a spy number of not, DEVELOP this by using while loop.

A Spy number is a number where the sum of its digits is equal to its product of its digits.

For Example :

1124 is a spy number , because the sum of its digits is 1+1+2+4 = 8 and product of its digits is equal to 1\*1\*2\*4 = 8..

**#include<stdio.h>**

**int main() {**

**long n,p=1;**

**int s,b;**

**//Write your code here...**

**printf("enter a number:");**

**scanf("%ld",&n);**

**while(n)**

**{**

**b=n%10;**

**s=s+b;**

**p=p\*b;**

**n=n/10;**

**}**

**if(p==s)printf("sum=%d\nproduct=%ld\na spy number",s,p);**

**else puts("not a spy number");**

**return 0;**

**}**

Write a C program that takes a number as input from the user and determine whether the number is a neon number or not. Develop it by using while loop.

A Neon number is a number is a number where the sum of digits of square of the number is equal to the number itself.

For Example :

9 is a Neon number . Its square is 9\*9 = 81 and sum of the digits 8+1 = 9 .So both are equal.

**#include<stdio.h>**

**int main() {**

**int n,square,b,sum,p;**

**//Write your code here...**

**printf("enter a number:");**

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

**square=n\*n;**

**p=square;**

**while(p)**

**{**

**b=p%10;**

**sum=sum+b;**

**p=p/10;**

**}**

**if(sum==n)**

**printf("square=%d\nsum of digits=%d\nNeon number. ",square,sum);**

**else puts("not a neon number");**

**return 0;**

**}**

Write a C program to find the given number is a step number or not.

If the adjacent digit difference is 1 then it is a step number.

Example as: 1234

o/p : It is a step number.

Test cases you have to check:

1234, 4321, 5432, 3210,10 are step numbers.

1001,12234 are not step numbers.

#include <stdio.h>

#include <stdlib.h>

#include<stdlib.h>

int main() {

long n;

int a,b;

//Write Code Here

printf("enter a number:");

scanf("%ld",&n);

a=n%10;

n=n/10;

while(n)

{

b=n%10;

if(abs(a-b)!=1)

{

puts("not a step number");

goto a;

}

a=b;

n=n/10;

}

printf("it is a step number");

a:

return 0;

}

Write a C program to find the alternate digit sum is same or not.

Example-1 as: 12345

1+3+5=9

2+4=6

Output as: Alternate digit sum is not same.

Example-2 as: 12122

1+1+2=4

2+2=4

Output as : Alternate digit sum is same.

**#include<stdio.h>**

**int main() {**

**//Write your code here...**

**long n;**

**int a,b,s,as;**

**printf("enter a number:");**

**scanf("%ld",&n);**

**while(n>0)**

**{**

**a=n%10;**

**s=s+a;**

**n=n/10;**

**b=n%10;**

**as=as+b;**

**n=n/10;**

**}**

**printf("alternate digit sum %d-==--%d\n",s,as);**

**if(s==as)puts("alternate digit sum is same");**

**else puts("alternate digit sum is not same");**

**return 0;**

**}**

Write a C program to find the multiplication between two number using Russian Multiplication

method.

Input as : 12 13

output as: 156

Definition of Russian Multiplication table :

10 15

10/2 5 30 15\*2

5/2 2 60 30\*2

2/2 1 120 60\*2

1/2 0 240 120\*2

From the left side division we have to check the number is odd or not if it is odd then the corresponding multiplication of the second number we have to add.

So 5 and 1 are odd in this division result so the corresponding multiplication values are 30 and 120.

30+120 = 150 which is equal to the multiplication of 10\*15 = 150.

#include<stdio.h>

int main() {

//Write your code here...

int n,num,m,d;

printf("enter two numbers:");

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

d=n\*num;

printf("odd\t\t\tmultiplicaton\n");

while(n)

{

n=n/2;

num=num\*2;

if((n%2)!=0) {

m=m+num;

printf("%d\t\t\t %d\n",n,num);

}

}

if(m==d)printf("using russian multiplication sum= %d=%d",m,d);

else printf("%d not equal to %d using russian multiplication",d,m);

return 0;

}

**Mastering Iteration - IV (For Loop)**

Write a program in C to display n terms of natural numbers and their sum.

Test Data : 7

Expected Output :

The first 7 natural number is :

1 2 3 4 5 6 7

The Sum of Natural Numbers upto 7 terms : 28

**#include<stdio.h>**

**int main(){**

**long a,n;**

**int c=0;**

**//Write your logic here...**

**printf("enter a number:");**

**scanf("%ld",&n);**

**printf("the first %ld natural numbers is:\n",n);**

**for(a=1;a<=n; a++)**

**{**

**printf("%ld\t",a);**

**c=c+a;**

**}**

**printf("\n\bThe sum of natural numbers upto %ld terms:%d",n,c);**

**return 0;**

**}**

Write a program in C to display the cube of the number up to an integer.

Test Data :

Input number of terms : 5

Expected Output :

Number is : 1 and cube of the 1 is :1

Number is : 2 and cube of the 2 is :8

Number is : 3 and cube of the 3 is :27

Number is : 4 and cube of the 4 is :64

Number is : 5 and cube of the 5 is :125

#include<stdio.h>

int main() {

int n,a;

//Wite your logic here....

printf("enter a number:");

scanf("%d",&n);

for(a=1;a<=n;a++)

{

printf("number is : %d and cube of the %d is : %d\n",a,a,(a\*a\*a));

}

return 0;

}

Write a program in C to display the multiplication table for a given integer.

Test Data :

Input the number (Table to be calculated) : 15

Expected Output :

15 X 1 = 15

...

...

15 X 10 = 150

**#include<stdio.h>**

**int main() {**

**long n;**

**int a;**

**//Write your logic here....**

**printf("enter a number:");**

**scanf("%ld",&n);**

**for(a=1;a<=10;a++)**

**{**

**printf("%ld X %d = %ld\n",n,a,a\*n);**

**}**

**return 0;**

**}**

Write a C program to display the sum of n terms of even natural numbers.

Test Data :

Input number of terms : 5

Expected Output :

The even numbers are :2 4 6 8 10

The Sum of even Natural Number upto 5 terms : 30

#include<stdio.h>

int main() {

int a,n,s,c=1;

//Write your code here...

printf("enter a number:");

scanf("%d",&n);

printf("the even numbers are:");

for(a=1;c<=n;a++)

{

if(a%2==0)printf("%d ",a,c++,s+=a);

}

printf("\nthe sum of even natural number upto %d terms : %d",n,s);

return 0;

}

Write a program in C to find the sum of the series 1 +11 + 111 + 1111 + .. n terms.

Test Data :

Input the number of terms : 5

Expected Output :

1 + 11 + 111 + 1111 + 11111

The Sum is : 12345

**#include<stdio.h>**

**int main(){**

**int n,a,b=0,s;**

**//Write your code here...**

**printf("enter a number:");**

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

**for(a=1;a<=n;a++)**

**{**

**b=10\*b+1;**

**printf(" %d ",b,s+=b);**

**if(a<n)printf("+");**

**}**

**printf("\n The sum is: %d",s);**

**return 0;**

**}**

Write a program in C to display the n terms of a harmonic series and their sum.

1 -1/2 +1/3 - 1/4 + 1/5 -1/6... 1/n terms

Test Data :

Enter the value of n: 5

Harmonic Series: 1 - 1/2 + 1/3 - 1/4 + 1/5

Expected Output :

Sum of the series: 0.783333

**#include<stdio.h>**

**#include<math.h>**

**int main() {**

**float n,a,s=0.0;**

**//write your logic here....**

**printf("enter a number:");**

**scanf("%f",&n);**

**printf("harmonic series : ");**

**for(a=1;a<=n;a++)**

**{**

**if(a==1){ printf(" 1 ");s=s+a;}**

**else if(fmod(a, 2)==0)**

**{**

**printf(" - 1/%.0f",a);**

**s-=1.0/a;**

**}**

**else {**

**printf(" + 1/%.0f",a);**

**s+=1.0/a;**

**}**

**}**

**printf("\nsum of the series:%.6f",s);**

**return 0;**

**}**

**Mastering Iteration - V (For Loop)**

Write a C program to check the given number is a prime number or not.

Input as :

Enter a number : 13

Expected Output :

13 is a Prime Number.

**#include<stdio.h>**

**int main(){**

**int i,c;**

**long n;**

**//Write your code here....**

**printf("enter a number:");**

**scanf("%ld",&n);**

**for(i=1;i<=n;i++)**

**{**

**if(n%i==0)c++;**

**}**

**if(c==2)printf("prime no");**

**else printf("not a prime number");**

**return 0;**

**}**

Write a C program to find the HCF (Highest Common Factor) of two numbers.

Input 1st number for HCF: 24

Input 2nd number for HCF: 28

Expected Output :

HCF of 24 and 28 is : 4

**#include<stdio.h>**

**int main(){**

**int a,n,i,c,m;**

**//Write your code here....**

**printf("input 1st number for HCF:");**

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

**printf("input 2nd number for HCF:");**

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

**printf("HCF of %d nd %d is :",n,a);**

**m=(n>a?n:a);**

**for(i=1;i<=m/2;i++)**

**{**

**if(n%i==0&&a%i==0)c=i;**

**}**

**printf("%d",c);**

**return 0;**

**}**

Write a C program to check the given number is perfect number or not. A perfect number is a positive integer that is equal to the sum of its proper divisors (excluding itself).

Input as :

Enter a number :28

Output as :

28 is a Perfect Number

**#include<stdio.h>**

**int main(){**

**int n,i,c;**

**//Write your code here....**

**printf("enter a number:");**

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

**for(i=1;i<=n/2;i++)**

**{**

**if(n%i==0)c+=i;**

**}**

**if(n==c)printf("%d is a perfect number",n);**

**else puts("not a perfect number");**

**return 0;**

**}**

Write a C program to add all the digits present in a given number until it became a single digit. Develop it by using while loop.

[if the number is 5678, sum of digit =5+6+7+8=26 , again sum of digit of the sum : 2+6=8]

Input as : 5678

Ouput as : 8

**#include<stdio.h>**

**int main(){**

**long n;**

**int c,b;**

**//Write your code here....**

**printf("enter a number:");**

**scanf("%ld",&n);**

**while(n>9||n<-9)**

**{**

**for(c=0;n!=0;n/=10)**

**{**

**b=n%10;**

**c+=b;**

**}**

**n=c;**

**}**

**printf("output as : %d",c);**

**return 0;**

**}**

Develop a C program that calculates and prints the sum of the series 1 + 1/2! + 1/3! + 1/4!+1/5!....... up to N terms:

Input as :

Enter the number of terms : 5

Expected output :

1 + 1/2! + 1/3! + 1/4! + 1/5! = 1.7167

**#include<stdio.h>**

**#include<math.h>**

**int main(){**

**float n,s,f,b;**

**int i,a;**

**//Write your code here....**

**printf("enter the number of terms:");**

**scanf("%f",&n);**

**printf("expected output:");**

**for(i=1;i<=n;i++)**

**{**

**if(i==1)**

**{**

**printf("1");**

**s+=1;**

**}**

**if(i>1)**

**{**

**for(f=1,b=0,a=i;a!=0;a--)**

**{**

**b=fmod(a,10);**

**f\*=b;**

**}**

**}**

**if(i>1)**

**{**

**printf("1/%d!",i);**

**s+=1.0/f;**

**}**

**if(i<5)printf(" + ");**

**}**

**printf("=%.4f",s);**

**return 0;**

**}**

**Mastering Iteration - VI (Nested For loop)**

Write a C program to find all Armstrong numbers between 100 to 999.

A three digit number is called Armstrong number if sum of cube of its digit is equal to number itself.

E.g.- 153 is an Armstrong number because (1)^3+(5)^3+(3)^3 = 153.

**#include<stdio.h>**

**int main() {**

**int n,a,b,c,t=0,s;**

**//Write your code here...**

**printf("enter starting and eding number:");**

**scanf("%d%d",&n,&a);**

**printf("armstrong numbers =");**

**if(n>99&&a<1000)**

**{**

**for(;n<=a;n++)**

**{**

**for(s=0,b=n;b!=0;b/=10)**

**{**

**c=b%10;**

**s+=c\*c\*c;**

**}**

**if(s==n)**

**{**

**printf("%d ,",s);**

**t++;**

**}**

**}**

**printf("\n total =%d",t);**

**}**

**else printf("invlid input");**

**return 0;**

**}**

Write a C program to print all the automorphic number from 1 to 500.

An automorphic number is a number whose square ends in the same digits as the number itself.

For example:

* 5 is an automorphic number because 5 \* 5 = 25 (last digit is 5).
* 6 is an automorphic number because 6 \* 6 = 36 (last digit is 6).
* 25 is an automorphic number because 25 \* 25 = 625 (last digits are 25).

Write a C program that allows the user to enter a number. The program should calculate the square of the entered number and check if it is an automorphic number or not.

Your program should:

1. Prompt the user to enter a number.
2. Calculate the square of the entered number.
3. Check if the square ends with the same digits as the original number.
4. Display whether the entered number is an automorphic number or not, along with the calculated square.

Input as :

Enter n value : 500

Expected output :

1 5 6 25 76 376

#include<stdio.h>

int main() {

int n,a,c,d,i;

//Write your code here...

printf("to printf all automorphic number from 1 to user value(less than 501):\n");

printf("enter a number:");

scanf("%d",&n);

printf("expected output:");

for(i=1;i<=n;i++)

{

a=i\*i;

// 1 digit

if(i<10)

{

for(c=0;c<1;c++)

{

d=a%10;

}

}

//2 digit

if(i>9&&i<100)

{

for(c=0;c<1;c++)

{

d=a%100;

}

}

//3digit

if(i>99&&i<1000)

{

for(c=0;c<1;c++)

{

d=a%1000;

}

}

if(d==i)

printf(" %d ,",i);

}

printf("\b ");

return 0;

}

Write a program in C to check whether a number can be expressed as the sum of two prime.

Input as: 16

Expected Output :

16 = 3 + 13

16 = 5 + 11

**#include<stdio.h>**

**int main() {**

**int n,i,j,k,c1,c2;**

**//Write your code here...**

**printf("sum of two prime number:\n");**

**printf("enter a number:");**

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

**printf("expected output:\n");**

**for(i=1;i<n;i++)**

**{**

**for(j=i;j<n;j++)**

**{**

**c1=0,c2=0;**

**if(i+j==n)**

**{**

**for(k=1;k<n;k++)**

**{**

**if(i%k==0)c1++;**

**if(j%k==0)c2++;**

**}**

**if(c1==2&&c2==2)printf("%d + %d = %d\n",i,j,n);**

**}**

**}**

**}**

**return 0;**

**}**

If a number when reversed, the square of the number and the square of the reversed number should be number which are reverse to each other, is Adam number.

Example:

Input: 12

12 ^ 2 = 144

21 ^ 2 = 441

The reverse of 144 is equal to 441 and reverse of 441 is equal to 144 so., 12 is an Adam number.

11, 12, 13, 21, 22, 31, 101, 102, 103, 111, 112, 113, 121 ... are Adam numbers.

**#include<stdio.h>**

**int main() {**

**int n,a,b,s1,s2,rev1=0,rev2=0,c,d;**

**printf("to check adam number or not:\n");**

**//Write your code here...**

**printf("enter a number:");**

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

**s1=n\*n;**

**printf("square of no :%d\n",s1);**

**for(a=n;a!=0;a/=10)**

**{**

**b=a%10;**

**rev1=rev1\*10+b;**

**}**

**printf("rev no=%d\n",rev1);**

**s2=rev1\*rev1;**

**printf("square of rev no=%d\n",s2);**

**for(c=s2;c!=0;c/=10)**

**{**

**d=c%10;**

**rev2=rev2\*10+d;**

**}**

**printf("rev of (square of rev no) %d\n",rev2);**

**if(rev2==s1)printf("%d is an adam number\n",n);**

**else printf("%d is not an adam number",n);**

**return 0;**

**}**

Write a C program to input a number from user and find Prime factors of the given number using

loop.

Input as : 116

Expected output as :

Prime factors of 116 : 2 29

#include<stdio.h>

int main() {

int i,j,n,c;

//Write your code here...

printf("prime factors of given umber :\n");

printf("enter a number :");

scanf("%d",&n);

printf("prime factor of %d :",n);

for(i=1;i<n;i++)

{

if(n%i==0) //finding factor are not

{

for(j=1,c=0;j<=n;j++) // loop for divisible by 1 and itself

{

if(i%j==0)c++;

}

if(c==2)printf("%d ,",i);//prime no are not

}

}

printf("\b ");

return 0;

}

**Patterns Day-1**

Write a C program to print square pattern program using \*

\* \* \* \* \*

\* \* \* \* \*

\* \* \* \* \*

\* \* \* \* \*

\* \* \* \* \*

**#include<stdio.h>**

**int main()**

**{**

**int r,c,n1,n2;**

**//Write Code Here**

**printf("enter no of rows & coloums:");**

**scanf("%d%d",&r,&c);**

**for(n1=1;n1<=r;n1++)**

**{**

**for(n2=1;n2<=c;n2++)**

**{**

**printf("\*");**

**}**

**printf("\n");**

**}**

**return 0;**

**}**

Write a C program to print square pattern program

1 1 1 1 1

2 2 2 2 2

3 3 3 3 3

4 4 4 4 4

5 5 5 5 5

**#include<stdio.h>**

**int main()**

**{**

**int r,c,n1,n2;**

**//Write Code Here**

**printf("enter no of rows & coloums:");**

**scanf("%d%d",&r,&c);**

**for(n1=1;n1<=r;n1++)**

**{**

**for(n2=1;n2<=c;n2++)**

**{**

**printf("%d",n1);**

**}**

**printf("\n");**

**}**

**return 0;**

**}**

Write a C program to print square pattern program

1 2 3 4 5

1 2 3 4 5

1 2 3 4 5

1 2 3 4 5

1 2 3 4 5

#include<stdio.h>

int main()

{

int r,c,n1,n2;

//Write Code Here

printf("enter no of rows & coloums:");

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

for(n1=1;n1<=r;n1++)

{

for(n2=1;n2<=c;n2++)

{

printf("%d",n2);

}

printf("\n");

}

return 0;

}

 Write a C program to print square pattern program

1  3  5  7  9

  11 13 15 17 19

  21 23 25 27 29

  31 33 35 37 39

**#include<stdio.h>**

**int main()**

**{**

**int r,c,n1,n2=1,n;**

**//Write Code Here**

**printf("enter no of rows & coloums:");**

**scanf("%d%d",&r,&c);**

**for(n1=1;n1<=r;n1++)**

**{**

**for(n=1;n<=c;n2+=2,n++)**

**{**

**printf("%2d ",n2);**

**}**

**printf("\n");**

**}**

**return 0;**

**}**

Write a C program to print square pattern program

1 0 1 0 1

1 0 1 0 1

1 0 1 0 1

1 0 1 0 1

1 0 1 0 1

**#include<stdio.h>**

**int main()**

**{**

**int r,c,n1,n2;**

**//Write Code Here**

**printf("enter no of rows & coloums:");**

**scanf("%d%d",&r,&c);**

**for(n1=1;n1<=r;n1++)**

**{**

**for(n2=1;n2<=c;n2++)**

**{**

**if(n2%2==0)printf("0 ");**

**else printf("1 ");**

**}**

**printf("\n");**

**}**

**return 0;**

**}**

Write a C program to print square pattern program

2  4  6   8  10

12 14 16 18 20

22 24 26 28 30

32 34 36 38 40

42 44 46 48 50

#include<stdio.h>

int main()

{

int r,c,n1,n2=2,n;

//Write Code Here

printf("enter no of rows & coloums:");

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

for(n1=1;n1<=r;n1++)

{

for(n=1;n<=c;n++,n2+=2)

{

printf("%2d ",n2);

}

printf("\n");

}

return 0;

}

Write a C program to print square pattern program

1 1 2 1 3 1

  1 2 2 2 3 2

  1 3 2 3 3 3

  1 4 2 4 3 4

  1 5 2 5 3 5

**#include<stdio.h>**

**int main()**

**{**

**int r,c,n1,n2,n=1,o;**

**//Write Code Here**

**printf("enter no of rows & coloums:");**

**scanf("%d%d",&r,&c);**

**for(n1=1;n1<=r;n1++)**

**{**

**for(o=1,n2=1;n2<=c;n2++)**

**{**

**if(n2%2!=0)printf("%d",o++);**

**else printf("%d",n);**

**}**

**n++;**

**printf("\n");**

**}**

**return 0;**

**}**

Write a C program to print square pattern program

1 2   3   4    5

2 4   6  8  10

3 6   9  12  15

4 8  12  16  20

5 10 15 20  25

**#include<stdio.h>**

**int main()**

**{**

**int r,c,n1,n2;**

**//Write Code Here**

**printf("enter no of rows & coloums:");**

**scanf("%d%d",&r,&c);**

**for(n1=1;n1<=r;n1++)**

**{**

**for(n2=1;n2<=c;n2++)**

**{**

**printf("%3d",n1\*n2);**

**}**

**printf("\n");**

**}**

**return 0;**

**}**

Write a C program to print square pattern program

  1 6 11 16 21

   2 7 12 17 22

   3 8 13 18 23

   4 9 14 19 24

   5 10 15 20 25

**#include<stdio.h>**

**int main()**

**{**

**int r,c,n1,n2,n;**

**//Write Code Here**

**printf("enter no of rows & coloums:");**

**scanf("%d%d",&r,&c);**

**for(n1=1;n1<=r;n1++)**

**{**

**for(n=n1,n2=1;n2<=c;n2++,n+=5)**

**{**

**printf("%3d",n);**

**}**

**printf("\n");**

**}**

**return 0;**

**}**

Write a C program to print square pattern program

5 10 15 20 25

   4 9  14 19 24

   3 8  13 18 23

   2 7  12 17 22

   1 6  11 16 21

#include<stdio.h>

int main()

{

int r,c,n1,n2,n,b;

//Write Code Here

printf("enter no of rows & coloums:");

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

for(n=r,n1=1;n1<=r;n1++)

{

for(b=n,n2=1;n2<=c;n2++)

{

printf("%3d",b);

b+=5;

}

n--;

printf("\n");

}

return 0;

}

0 1 0 1 0

  1 0 1 0 1

  0 1 0 1 0

  1 0 1 0 1

  0 1 0 1 0

**#include<stdio.h>**

**int main()**

**{**

**int r,c,n1,n2;**

**//Write Code Here**

**printf("enter no of rows & coloums:");**

**scanf("%d%d",&r,&c);**

**for(n1=1;n1<=r;n1++)**

**{**

**for(n2=1;n2<=c;n2++)**

**{**

**if((n1+n2)%2==0)printf("0");**

**else printf("1");**

**}**

**printf("\n");**

**}**

**return 0;**

**}**

**Patterns Day-2**

 Write a logic for the following pattern in c?

1

    2  3

    4  5  6

    7  8  9  10

    11 12 13 14 15

**#include<stdio.h>**

**int main()**

**{**

**int r,c,n1,n2,n=1;**

**//Write Code Here**

**printf("enter no of rows & coloums:");**

**scanf("%d%d",&r,&c);**

**for(n1=1;n1<=r;n1++)**

**{**

**for(n2=1;n2<=c;n2++)**

**{**

**if(n2<=n1)printf("%3d",n++);**

**}**

**printf("\n");**

**}**

**return 0;**

**}**

Write a logic for the following pattern in c?

1

    2  3

    3  4  5

    4  5  6  7

    5  6  7  8  9

#include<stdio.h>

int main()

{

int r,c,n1,n2,n;

//Write Code Here

printf("enter no of rows & coloums:");

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

for(n1=1;n1<=r;n1++)

{

for(n=n1,n2=1;n2<=c;n2++)

{

if(n2<=n1)printf("%3d",n++);

}

printf("\n");

}

return 0;

}

Write a logic for the following pattern in c?

1

    1  2

    3  5  8

    13 21 34 55

#include<stdio.h>

int main()

{

int r,c,n1,n2,a=1,b=0,d=0;

//Write Code Here

printf("enter no of rows & coloums:");

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

for(n1=1;n1<=r;n1++)

{

for(n2=1;n2<=n1;n2++)

{

d=a+b;

printf("%5d",d);

a=b;

b=d;

}

printf("\n");

}

return 0;

}

Write a logic for the following pattern in c?

    0

    1 0

    0 1 0

    1 0 1 0

    0 1 0 1 0

#include<stdio.h>

int main()

{

int r,c,n1,n2;

//Write Code Here

printf("enter no of rows & coloums:");

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

for(n1=1;n1<=r;n1++)

{

for(n2=1;n2<=n1;n2++)

{

if((n1+n2)%2==0)printf("0");

else printf("1");

}

printf("\n");

}

return 0;

}

Write a logic for the following pattern in c?

    0

    0 1

    0 1 1

    0 1 1 2

    0 1 1 2 3

**#include<stdio.h>**

**int main()**

**{**

**int r,c,n1,n2,a,b,d;**

**//Write Code Here**

**printf("enter no of rows & coloums:");**

**scanf("%d%d",&r,&c);**

**for(n1=1;n1<=r;n1++)**

**{**

**for(a=0,b=1,n2=1;n2<=n1;n2++)**

**{**

**printf("%3d",a);**

**d=a+b;**

**a=b;**

**b=d;**

**}**

**printf("\n");**

**}**

**return 0;**

**}**

Write a logic for the following pattern in c?

    0

    0 1

    0 1 0

    0 1 0 1

    0 1 0 1 0

    0 1 0 1 0 1

**#include<stdio.h>**

**int main()**

**{**

**int r,c,n1,n2;**

**//Write Code Here**

**printf("enter no of rows & coloums:");**

**scanf("%d%d",&r,&c);**

**for(n1=1;n1<=r;n1++)**

**{**

**for(n2=1;n2<=n1;n2++)**

**{**

**if(n2%2==0)printf("1 ");**

**else printf("0 ");**

**}**

**printf("\n");**

**}**

**return 0;**

**}**

Write a logic for the following pattern in c?

    A

    B A

    C B A

    D C B A

    E D C B A

#include<stdio.h>

int main()

{

int r,c,n1,n2,a;

//Write Code Here

printf("enter no of rows & coloums:");

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

for(a=64,n1=1;n1<=r;n1++)

{

a=a+n1;

for(n2=1;n2<=n1;n2++)

{

printf("%c ",a--);

}

printf("\n");

}

return 0;

}

Write a logic for the following pattern in c?

    1

    2  6

    3  7  10

    4  8  11  13

    5  9  12  14  15

**#include<stdio.h>**

**int main()**

**{**

**int r,c,n1,n2,n,a=1;**

**//Write Code Here**

**printf("enter no of rows & coloums:");**

**scanf("%d%d",&r,&c);**

**for(n1=1;n1<=r;n1++)**

**{**

**n=a;**

**for(n2=1;n2<=n1;n2++)**

**{**

**printf("%d ",n);**

**n+=(r-n2);**

**}**

**a++;**

**printf("\n");**

**}**

**return 0;**

**}**

**Patterns Day-3**

*Write the logic for thee below pattern in c ?*

*1 2 3*

*6 5 4*

*7 8 9*

*12 11 10*

*13 14 15*

**#include<stdio.h>**

**int main()**

**{**

**int r,c,n1,n2,n=1,b;**

**//Write Code Here**

**printf("enter no of rows & coloums:");**

**scanf("%d%d",&r,&c);**

**for(n1=1;n1<=r;n1++)**

**{**

**if((n1%2)==0)b=n+c-1;**

**for(n2=1;n2<=c;n2++,n++)**

**{**

**if((n1%2)!=0)printf("%3d ",n);**

**else**

**{**

**printf("%3d ",b);**

**b--;**

**}**

**}**

**printf("\n");**

**}**

**return 0;**

**}**

Write the logic for the below program?

1

2 6

3 7 10

4 8 11 13

5 9 12 14 15

**#include<stdio.h>**

**int main()**

**{**

**int r,c,n1,n2,n,a=1;**

**//Write Code Here**

**printf("enter no of rows & coloums:");**

**scanf("%d%d",&r,&c);**

**for(n1=1;n1<=r;n1++)**

**{**

**n=a;**

**for(n2=1;n2<=n1;n2++)**

**{**

**printf("%d ",n);**

**n+=(r-n2);**

**}**

**a++;**

**printf("\n");**

**}**

**return 0;**

**}**

*Write the logic for the below program in c ?*

1

4 9

16 25 36

49 64 81 100

**#include<stdio.h>**

**int main()**

**{**

**int r,i,j,c=1;**

**//Write Code Here**

**printf("enter no of rows:");**

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

**for(i=1;i<=r;i++)**

**{**

**for(j=1;j<=r;j++)**

**{**

**if(j<=r-i)printf(" ");**

**else**

**{**

**printf("%4d",c\*c);**

**c++;**

**}**

**}**

**printf("\n");**

**}**

**return 0;**

**}**

Write the logic for the below program ?

1

2 4

3 6 9

4 8 12 16

**#include<stdio.h>**

**int main()**

**{**

**int r,i,j,a;**

**//Write Code Here**

**printf("enter no of rows:");**

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

**for(i=1;i<=r;i++)**

**{**

**for(a=1,j=1;j<=r;j++)**

**{**

**if(j<=r-i)printf(" ");**

**else**

**{**

**printf("%4d",i\*a);**

**a++;**

**}**

**}**

**printf("\n");**

**}**

**return 0;**

**}**

Write the logic for the below program in c?

1

1 2 1

1 2 3 2 1

1 2 3 4 3 2 1

1 2 3 4 5 4 3 2 1

#include<stdio.h>

int main()

{

int r,i,j,n,a=0,b;

//Write Code Here

printf("enter no of rows :");

scanf("%d",&r);

for(i=1;i<=r;i++)

{

n=i+a;

a++;

for(b=i,j=1;j<=n;j++)

{

if(j<=i) printf("%d ",j);

else

{

b--;

printf("%d ",b);

}

}

printf("\n");

}

return 0;

}

**Patterns Day 4**

Write a c program for the following pattern

1 2 3 4 5

   0 3 4 5 6

   0 0 5 6 7

   0 0 0 7 8

   0 0 0 0 9

**#include<stdio.h>**

**int main()**

**{**

**int r,i,j,a,b;**

**//Write Code Here**

**printf("enter no of rows :");**

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

**for(a=1,i=1;i<=r;i++)**

**{**

**b=a;**

**for(j=1;j<=r;j++)**

**{**

**if(i==j)**

**{**

**printf("%d",b++);**

**}**

**else if(j>i)printf("%d",b++);**

**else printf("0");**

**}**

**a=a+2;**

**printf("\n");**

**}**

**return 0;**

**}**

Write a c program for the following pattern

1

   1 \* 2

   1 \* 2 \* 3

   1 \* 2 \* 3 \* 4

**#include<stdio.h>**

**int main()**

**{**

**int r,i,j;**

**//Write Code Here**

**printf("enter no of rows :");**

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

**for(i=1;i<=r;i++)**

**{**

**for(j=1;j<=i;j++)**

**{**

**if(j<=i) printf("%d\*",j);**

**}**

**printf("\b ");**

**printf("\n");**

**}**

**return 0;**

**}**

3) 1

   2  3

   4  5  6

   7  8  9 10

   11 12 13

   14 15

   16

**#include<stdio.h>**

**int main()**

**{**

**int r,i,j,a=1;**

**//Write Code Here**

**printf("enter no of rows :");**

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

**for(i=1;i<=r;i++)**

**{**

**for(j=1;j<=i;j++)**

**{**

**printf("%3d",a++);**

**}**

**printf("\n");**

**}**

**// descresing row with coloum value**

**if(i>r)**

**{**

**for(i=r-1;i>=1;i--)**

**{**

**for(j=1;j<=i;j++)**

**{**

**printf("%3d",a++);**

**}**

**printf("\n");**

**}**

**}**

**return 0;**

**}**

1 2 3 4 5

  2 3 4 5 1

  3 4 5 1 2

  4 5 1 2 3

  5 1 2 3 4

**#include<stdio.h>**

**int main()**

**{**

**int r,i,j,a;**

**//Write Code Here**

**printf("enter no of rows :");**

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

**for(i=1;i<=r;i++)**

**{**

**for(a=i,j=1;j<=r;j++)**

**{**

**printf("%3d",a++);**

**if(a>r)a=1;**

**}**

**printf("\n");**

**}**

**return 0;**

**}**