**NESTED FOR LOOP**

# 1

# 1 2

# 1 2 3

# 1 2 3 4

**1 2 3 4 5**

import java.util.\*; public class Main {

public static void main(String[] args) { int n,i,j;

Scanner sc = new Scanner(System.in); System.out.println("Enter value of n:"); n = sc.nextInt(); for (i =1; i <= n ; i++)

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

[System.out.print(j+" ");](#_Toc27154)

[1 2](#_Toc27155)

[1 2 3](#_Toc27156)

[1 2 3 4](#_Toc27157)

[1 2 3 4 5](#_Toc27158)

}

System.out.println();

}

}

}

**O/P:**

Enter value of n:

5

1

**2) 1**

1. **2**
2. **3 3**
3. **4 4 4**

import java.util.\*; public class Main

{

public static void main(String[] args) { int n,i,j;

Scanner sc=new Scanner(System.in); System.out.println("Enter value of n"); n=sc.nextInt(); for(i=1;i<=n;i++){

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

## System.out.print(i+" ");

}

System.out.println();

}

}

}

**O/P:**

Enter value of n

5

1

1. 2
2. 3 3
3. 4 4 4
4. 5 5 5 5

**3) \***

* **\***
* **\* \***
* **\* \* \***
* **\* \* \* \***

import java.util.\*; public class Main

{

public static void main(String[] args) { int n,i,j;

Scanner sc=new Scanner(System.in); System.out.println("Enter value of n"); n=sc.nextInt(); for(i=1;i<=n;i++){

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

System.out.print("\* ");

}

System.out.println();

}

}

}

**O/P:**

Enter value of n

7

\*

* \*
* \* \*
* \* \* \*
* \* \* \* \*
* \* \* \* \* \*
* \* \* \* \* \* \*

**4) @**

**@ @**

**@ @ @**

**@ @ @ @**

**@ @ @ @ @**

import java.util.\*; public class Main

{

public static void main(String[] args) { int n,i,j;

Scanner sc=new Scanner(System.in); System.out.println("Enter value of n"); n=sc.nextInt(); for(i=1;i<=n;i++){

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

System.out.print("@ ");

}

System.out.println();

}

}

}

**O/P:**

Enter value of n

6

@

@ @

@ @ @

@ @ @ @

@ @ @ @ @

@ @ @ @ @ @

**5) 1**

**2 3**

**4 5 6**

**7 8 9 10**

import java.util.\*; public class Main

{

public static void main(String[] args) { int n,i,j,k=0;

Scanner sc=new Scanner(System.in); System.out.println("Enter value of n"); n=sc.nextInt(); for(i=1;i<=n;i++){

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

k++;

System.out.print(k+" ");

}

System.out.println();

}

}

}

**O/P:**

Enter value of n

4

1

2 3

4 5 6

7 8 9 10

**6) 1**

**3 5**

**7 9 11**

**13 15 17 19**

import java.util.\*; public class Main

{

public static void main(String[] args) { int n,i,j,k=0;

Scanner sc=new Scanner(System.in); System.out.println("Enter value of n"); n=sc.nextInt(); for(i=1;i<=n;i++){

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

k++;

System.out.print(k+" "); k++;

4

1

3 5

7 9 11

13 15 17 19

**7) A**

**A B**

**A B C**

**A B C D**

import java.util.\*; public class Main

{

public static void main(String[] args) { int n,i,j,ch=64;

Scanner sc=new Scanner(System.in); System.out.println("Enter value of n"); n=sc.nextInt(); for(i=1;i<=n;i++){

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

System.out.print((char)(ch+j)+" ");

}

System.out.println();

}

}

}

**O/P:**

Enter value of n

5

A

A B

A B C

A B C D

A B C D E

**8) A**

1. **B**
2. **C C**
3. **D D D**

import java.util.\*; public class Main

{

public static void main(String[] args) { int n,i,j,ch=64;

Scanner sc=new Scanner(System.in); System.out.println("Enter value of n"); n=sc.nextInt(); for(i=1;i<=n;i++){

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

System.out.print((char)(ch+i)+" ");

}

System.out.println();

}

}

}

**O/P:**

Enter value of n

5

A

1. B
2. C C
3. D D D
4. E E E E

**9) a a b a b c a b c d**

import java.util.\*; public class Main

{

public static void main(String[] args) { int n,i,j,ch=96;

Scanner sc=new Scanner(System.in); System.out.println("Enter value of n"); n=sc.nextInt(); for(i=1;i<=n;i++){

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

System.out.print((char)(ch+j)+" ");

5 a a b a b c a b c d a b c d e

**10) a**

**b b c c c d d d d**

import java.util.\*; public class Main

{

public static void main(String[] args) { int n,i,j,ch=96;

Scanner sc=new Scanner(System.in); System.out.println("Enter value of n"); n=sc.nextInt(); for(i=1;i<=n;i++){

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

System.out.print((char)(ch+i)+" ");

}

System.out.println();

}

}

}

**O/P:**

Enter value of n 4 a b b c c c d d d d

**11) a**

**b c d e f g h i j**

import java.util.\*; public class Main {

public static void main(String[] args) { int n,i,j,ch=96;

Scanner sc=new Scanner(System.in); System.out.println("Enter value of n"); n=sc.nextInt(); for(i=1;i<=n;i++){

for(j=1;j<=i;j++){ ch++;

System.out.print((char)ch+" ");

}

System.out.println();

}

}

}

**O/P:**

Enter value of n 5 a b c d e f g h i j

k l m n o

**12) A**

**B C**

**D E F**

**J H I J**

import java.util.\*; public class Main

{

public static void main(String[] args) { int n,i,j,ch=64;

Scanner sc=new Scanner(System.in); System.out.println("Enter value of n"); n=sc.nextInt(); for(i=1;i<=n;i++){

for(j=1;j<=i;j++){ ch++;

System.out.print((char)ch+" ");

4

A

B C

D E F

G H I J

**13) Aa**

**Aa Bb**

**Aa Bb Cc**

**Aa Bb Cc Dd** import java.util.\*; public class Main

{

public static void main(String[] args) { int n,i,j,ch=64,ch1=96;

Scanner sc=new Scanner(System.in); System.out.println("Enter value of n"); n=sc.nextInt(); for(i=1;i<=n;i++){

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

System.out.print((char)(ch+j)+""+(char)(ch1+j)+" ");

}

System.out.println();

}

}

}

**O/P:**

Enter value of n

5

Aa

Aa Bb

Aa Bb Cc

Aa Bb Cc Dd

Aa Bb Cc Dd Ee

**14) Aa**

**Bb Bb**

**Cc Cc Cc**

**Dd Dd Dd Dd**

import java.util.\*; public class Main

{

public static void main(String[] args) { int n,i,j,ch=64,ch1=96;

Scanner sc=new Scanner(System.in); System.out.println("Enter value of n"); n=sc.nextInt(); for(i=1;i<=n;i++){

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

System.out.print((char)(ch+i)+""+(char)(ch1+i)+" ");

}

System.out.println();

}

}

}

**O/P:**

Enter value of n

4

Aa

Bb Bb

Cc Cc Cc

Dd Dd Dd Dd

**15) 1 2 3 4 5**

**1 2 3 4**

**1 2 3**

**1 2**

**1**

import java.util.\*; public class Main {

public static void main(String[] args) { int n,i,j,k;

Scanner sc = new Scanner(System.in); System.out.println("Enter value of n:"); n = sc.nextInt(); for (i=n;i>=1;i--)

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

System.out.print(j+" ");

}

System.out.println();

}

}

}

**O/P:**

Enter value of n:

5

1 2 3 4 5

1 2 3 4

1 2 3

1 2

1

**16) 1 2 3 4 5**

**1 2 3 4 5**

**1 2 3 4 5**

**1 2 3 4 5**

import java.util.\*; public class Main

{

public static void main(String[] args) { int n,i,j;

Scanner sc=new Scanner(System.in); System.out.println("Enter value of n"); n=sc.nextInt(); for(i=1;i<=n;i++){

for(j=1;j<=n;j++){

System.out.print(j+" ");

}

System.out.println();

}

}

}

**O/P:**

Enter value of n

5

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

**17) 1**

**1 2**

**1 2 3**

**1 2 3 4**

**1 2 3**

**1 2**

**1**

import java.util.\*; public class Main

{

public static void main(String[] args) { int n,i,j;

Scanner sc=new Scanner(System.in); System.out.println("Enter value of n"); n=sc.nextInt(); for(i=1;i<=n;i++){

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

System.out.print(j+" ");

}

System.out.println();

} for(i=n-1;i>=1;i--){

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

System.out.print(j+" ");

}

System.out.println();

}

}

}

**O/P:**

Enter value of n

4

1

1 2

1 2 3

1 2 3 4

1 2 3

1 2

1

**18) 1 2 3 4**

**1 2 3**

**1 2**

**1**

**1 2**

**1 2 3**

**1 2 3 4**

import java.util.\*; public class Main

{

public static void main(String[] args) {

int n,i,j;

Scanner sc=new Scanner(System.in); System.out.println("Enter value of n"); n=sc.nextInt(); for(i=n;i>=1;i--){

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

System.out.print(j+" ");

}

System.out.println();

} for(i=2;i<=n;i++){

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

System.out.print(j+" ");

}

System.out.println();

}

}

}

**O/P:**

Enter value of n

4

1 2 3 4

1 2 3

1 2

1

1 2

1 2 3

1 2 3 4

**19) 1**

**1 0**

**1 0 1**

**1 0 1 0**

import java.util.\*; public class Main

{

public static void main(String[] args) { int n,i,j;

Scanner sc=new Scanner(System.in); System.out.println("Enter value of n"); n=sc.nextInt(); for(i=1;i<=n;i++){ for(j=1;j<=i;j++){ if(j%2==1){

System.out.print("1 ");

}

else{

System.out.print("0 ");

}

}

System.out.println();

}

}

}

**O/P:**

Enter value of n

5

1

1 0

1 0 1

1 0 1 0

1 0 1 0 1

**20) 1**

1. **0**
2. **1 1**

**0 0 0 0**

import java.util.\*; public class Main

{

public static void main(String[] args) { int n,i,j;

Scanner sc=new Scanner(System.in); System.out.println("Enter value of n"); n=sc.nextInt(); for(i=1;i<=n;i++){ for(j=1;j<=i;j++){

if(i%2==1){

System.out.print("1 ");

}

else{

System.out.print("0 ");

}

}

System.out.println();

}

}

}

**O/P:**

Enter value of n

4

1

1. 0
2. 1 1

0 0 0 0

**21) \* # \* # # \* # \***

* **# \* #**
* **# \* #**

import java.util.\*; public class Main

{

public static void main(String[] args) { int n,i,j;

Scanner sc=new Scanner(System.in); System.out.println("Enter value of n"); n=sc.nextInt(); for(i=1;i<=n;i++){ for(j=1;j<=n;j++){ if(i%2==0){

if(j%2==0){

System.out.print("\* ");

}

else{

System.out.print("# ");

}

}

else{

if(j%2==0){

System.out.print("# ");

}

else{

System.out.print("\* ");

}

}

}

System.out.println();

}

}

}

**O/P:**

Enter value of n

10

* # \* # \* # \* # \* # # \* # \* # \* # \* # \*
* # \* # \* # \* # \* # # \* # \* # \* # \* # \*
* # \* # \* # \* # \* # # \* # \* # \* # \* # \*
* # \* # \* # \* # \* # # \* # \* # \* # \* # \*
* # \* # \* # \* # \* #

# \* # \* # \* # \* # \*

**22) \***

* **\***
* **\* \***
* **\* \* \***

import java.util.\*; public class Main

{

public static void main(String[] args) { int n,i,j,k;

Scanner sc=new Scanner(System.in); System.out.println("Enter value of n"); n=sc.nextInt(); for(i=1;i<=n;i++){

for(k=n;k>i;k--){

System.out.print(" ");

} for(j=1;j<=i;j++){

System.out.print("\* ");

}

System.out.println();

}

}

}

O/P:

Enter value of n

4

\*

* \*
* \* \*
* \* \* \*

**23) \* \* \* \***

* **\* \***
* **\***
* import java.util.\*; public class Main

{

public static void main(String[] args) { int n,i,j,k;

Scanner sc=new Scanner(System.in); System.out.println("Enter value of n"); n=sc.nextInt(); for(i=n;i>=1;i--){

for(k=n;k>i;k--){

System.out.print(" ");

} for(j=1;j<=i;j++){

System.out.print("\* ");

}

System.out.println();

}

}

}

**O/P:**

Enter value of n

4

* \* \* \*
* \* \*
* \*

\*

**24) \***

* **\***
* **\* \***
* **\* \* \***
* **\* \***
* **\***
* import java.util.\*; public class Main

{

public static void main(String[] args) { int n,i,j,k;

Scanner sc=new Scanner(System.in); System.out.println("Enter value of n"); n=sc.nextInt(); for(i=1;i<=n;i++){

for(k=n;k>i;k--){

System.out.print(" ");

} for(j=1;j<=i;j++){

System.out.print("\* ");

}

System.out.println();

} for(i=n-1;i>=1;i--){

for(k=n;k>i;k--){

System.out.print(" ");

} for(j=1;j<=i;j++){

System.out.print("\* ");

}

System.out.println();

}

}

}

**O/P:**

Enter value of n

5

\*

* \*
* \* \*
* \* \* \*
* \* \* \* \*
* \* \* \*
* \* \*
* \*

\*

**25) \* \* \* \***

* **\* \***
* **\***

**\***

* **\***
* **\* \***
* **\* \* \***

import java.util.\*; public class Main {

public static void main(String[] args) { int n,i,j,k;

Scanner sc=new Scanner(System.in); System.out.println("Enter value of n"); n=sc.nextInt(); for(i=n;i>=1;i--){

for(k=n;k>i;k--){

System.out.print(" ");

} for(j=1;j<=i;j++){

System.out.print("\* ");

}

System.out.println();

} for(i=2;i<=n;i++){

for(k=n;k>i;k--){

System.out.print(" ");

} for(j=1;j<=i;j++){

System.out.print("\* ");

}

System.out.println();

}

}

}

**O/P:**

Enter value of n

4

* \* \* \*
* \* \*
* \*

\*

* \*
* \* \*
* \* \* \*

**26) \***

**\*\***

**\*\*\***

**\*\*\*\*** import java.util.\*; public class Main

{

public static void main(String[] args) { int n,i,j,k;

Scanner sc=new Scanner(System.in); System.out.println("Enter value of n"); n=sc.nextInt(); for(i=1;i<=n;i++){

for(k=n;k>i;k--){

System.out.print(" ");

} for(j=1;j<=i;j++){

System.out.print("\*");

}

System.out.println();

}

}

}

**O/P:**

Enter value of n

4

\*

\*\*

\*\*\*

\*\*\*\*

**27) \* \* \* \***

* **\* \***
* **\***
* import java.util.\*; public class Main

{

public static void main(String[] args) { Scanner sc=new Scanner(System.in);

int n,i,j,k;

System.out.println("Enter value of n"); n=sc.nextInt(); for(i=n;i>=1;i--){

for(k=n;k>i;k--){

System.out.print(" ");

} for(j=1;j<=i;j++){

System.out.print("\*");

}

System.out.println();

}

}

}

**O/P:**

Enter value of n

5

\*\*\*\*\*

\*\*\*\*

\*\*\*

\*\*

\*

**28) \***

* **\***
* **\* \***
* **\* \* \***
* **\* \***
* **\***
* import java.util.\*; public class Main

{

public static void main(String[] args) { Scanner sc=new Scanner(System.in);

int n,i,j,k;

System.out.println("Enter value of n"); n=sc.nextInt(); for(i=1;i<=n;i++){

for(k=n;k>i;k--){

System.out.print(" ");

} for(j=1;j<=i;j++){

System.out.print("\*");

}

System.out.println();

} for(i=n-1;i>=1;i--){

for(k=n;k>i;k--){

System.out.print(" ");

} for(j=1;j<=i;j++){

System.out.print("\*");

}

System.out.println();

}

}

}

O/P:

Enter value of n

5

\*

\*\*

\*\*\*

\*\*\*\*

\*\*\*\*\*

\*\*\*\*

\*\*\*

\*\*

\*

**29) +**

**+**

**+ + + + +**

**+**

**+**

import java.util.\*; public class Main

{

public static void main(String[] args) { Scanner sc=new Scanner(System.in); int n,i,j,k,sum=0,count=0; System.out.println("Enter value of n"); n=sc.nextInt(); for(i=1;i<=n;i++){ sum=sum+i; count++;

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

for(j=1;j<n;j++){

if(j==(sum/count)){

System.out.print(" + ");

}

else{

System.out.print(" ");

}

if(i==(sum/count)){

System.out.print("+");

}

else{

System.out.print(" ");

}

}

System.out.println();

}

}

}

O/P:

Enter value of n

5

+

+

+ + + + +

+

+

**30)** import java.util.\*; public class Main

{

public static void main(String[] args) { Scanner sc=new Scanner(System.in);

int n,i,j,k=0;

System.out.println("Enter value of n"); n=sc.nextInt(); for(i=1;i<=n;i++){

k=1; for(j=1;j<=n+1;j++){

if((i==1 && j==1)||(i==1 && j==n+1))

System.out.print(" "); else if((i==n && j==1)||(i==n && j==n+1))

System.out.print(" "); else if(j==1 || j==n+1)

System.out.print("\* "); else if(i==1 || i==n)

System.out.print(" \*"); else{

System.out.print(k++ +" ");

}

}

System.out.println();

}

}

}

O/P:

Enter value of n

6

* \* \* \* \*
* 1 2 3 4 5 \*
* 1 2 3 4 5 \*
* 1 2 3 4 5 \*
* 1 2 3 4 5 \*
* \* \* \* \*

**31)** import java.util.\*; public class Main

{

public static void main(String[] args) { Scanner sc=new Scanner(System.in);

int n,i,j,ch=96,k;

System.out.println("Enter value of n"); n=sc.nextInt(); for(i=1;i<=n;i++){

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

System.out.print((char)(ch+j));

}

for(k=1;k<2\*(n-i);k++){

System.out.print(" ");

} for(j=i;j>=1;j--){

if(i==4&&j==4){

System.out.print("");

}

else{

System.out.print((char)(ch+j));

}

}

System.out.println();

} for(i=n-1;i>=1;i--){

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

System.out.print((char)(ch+j));

}

for(k=1;k<2\*(n-i);k++){

System.out.print(" ");

} for(j=i;j>=1;j--){

System.out.print((char)(ch+j));

}

System.out.println();

}

}

}

O/P:

Enter value of n

4

a a

ab ba

abc cba abcdcba abc cba ab ba

a a

**32)** import java.util.\*; public class Main

{

public static void main(String[] args) { Scanner sc=new Scanner(System.in);

int n,i,j;

System.out.println("Enter value of n"); n=sc.nextInt(); for(i=1;i<=n;i++){

for(j=1;j<=n;j++){

if(i==1||j==1||i==n||j==n)

System.out.print("\*"); else

System.out.print(" ");

}

System.out.println();

}

}

}

O/P:

Enter value of n

5

\*\*\*\*\*

* \*
* \*
* \*

\*\*\*\*\*

**33) Print prime numbers upto n numbers**

import java.util.\*; public class Main

{

public static void main(String[] args) { Scanner sc=new Scanner(System.in); int i,j,range,flag=0;

System.out.println("Enter value ofrange"); range=sc.nextInt();

for(i=1;i<=range;i++){

for(j=2;j<i;j++){ if(i%j==0){

break;

} } if(j==i){

System.out.print(j+" ");

}

}

}

}

**O/P:**

Enter value of range

20

2 3 5 7 11 13 17 19

**34) Print Pronic number upto n numbers**

import java.util.\*; public class Main

{

public static void main(String[] args) { int range,i,j,flag=0;

Scanner sc=new Scanner(System.in); System.out.println("Enter value of n"); range=sc.nextInt(); for(i=0;i<=range;i++){ for(j=0;j<=i;j++){

if(i==(j\*(j+1))){

System.out.print(i+" "); break;

}

}

}

}

}

**O/P:**

Enter value of n

100

0 2 6 12 20 30 42 56 72 90

**35) Print Perfect number in the given range**

import java.util.\*; public class Main

{

public static void main(String[] args) { Scanner sc=new Scanner(System.in); int n,i,j,range,sum=0;

System.out.println("Enter value of range"); range=sc.nextInt(); for(i=1;i<=range;i++){ sum=0;

for(j=1;j<i;j++){ if(i%j==0)

sum+=j;

}

if(i==sum){

System.out.print(i+" ");

}

}

}

}

**O/P:**

Enter value of range

100

6 28

**36) sum=1!+2!+3!+4!+5!+.......+n!**

import java.util.\*; public class Main

{

public static void main(String[] args) { Scanner sc=new Scanner(System.in); int i,j,n,fact=1,sum=0;

System.out.println("Enter the value n");

n=sc.nextInt();

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

fact=1;

for(j=i;j>=1;j--){

fact\*=j;

}

sum+=fact;

}

System.out.println("Sum="+sum);

}

}

**O/P:**

Enter the value n

3

Sum=9

**37) sum=(x^1/1!) + (x^2/2!) + (x^3/3!) +.......+ (x^n/n!)** import java.util.\*; public class Main

{

public static void main(String[] args) { Scanner sc=new Scanner(System.in);

int i,j,n,fact=1,x,k; double sum=0.0;

System.out.println("Enter the value n & x"); n=sc.nextInt(); x=sc.nextInt(); for(i=1;i<=n;i++){ double square=1;

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

square=square\*x;

}

fact=1; for(k=i;k>=1;k--){

fact\*=k;

}

sum=sum+(square/fact);

}

System.out.println("Sum="+sum);

}

}

**O/P:**

Enter the value n & x

3

2

Sum=5.333333333333333

**38) sum=1!/1+2!/2+3!/3+4!/4+.........+n!/n**

import java.util.\*; public class Main

{

public static void main(String[] args) { Scanner sc=new Scanner(System.in); int i,j,n,fact=1;

double sum=0.0;

System.out.println("Enter the value n "); n=sc.nextInt(); for(i=1;i<=n;i++){ fact=1; for(j=i;j>=1;j--){

fact\*=j;

}

sum=sum+(fact/i);

}

System.out.println("Sum="+sum);

}

}

**O/P:**

Enter the value n

7

Sum=874.0

**39) sum=1^1+2^2+3^3+4^4+.......+n^n**

import java.util.\*; public class Main

{

public static void main(String[] args) { Scanner sc=new Scanner(System.in); int i,j,n,sum=0;

System.out.println("Enter the value n "); n=sc.nextInt();

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

int power=1;

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

power=power\*i;

}

sum=sum+power;

}

System.out.println("Sum="+sum);

}

}

**O/P:**

Enter the value n

3

Sum=32

**40) sum=1/1+1/3+1/5+1/7** import java.util.Scanner; public class Main {

public static void main(String[] args) {

Scanner sc = new Scanner(System.in); System.out.print("Enter the value of n:"); int n = sc.nextInt();

double sum = 0.0;

for (int i = 1; i <= n; i=i+2) {

sum += 1.0 / i;

}

System.out.println("Sum=" + sum);

}

}

**O/P:**

Enter the value of n:7

Sum=1.676190476190476