**1.**

public class Pattern

{

public static void main(String args[]){

for(int i=1;i<=7;i++){

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

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

}

System.out.println();

}

for(int i=6;i>=1;i--){

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

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

}

System.out.println();

}

}

}

***Output:***

1

1 2

1 2 3

1 2 3 4

1 2 3 4 5

1 2 3 4 5 6

1 2 3 4 5 6 7

1 2 3 4 5 6

1 2 3 4 5

1 2 3 4

1 2 3

1 2

1

**2**.

import java.util.Scanner;

class ReverseNumber

{

public static void main(String args[])

{

int n, rev= 0;

System.out.println("Enter the number");

Scanner sc = new Scanner(System.in);

n = sc.nextInt();

while( n != 0 )

{

rev = rev \* 10;

rev = rev + n%10;

n = n/10;

}

System.out.println("Reverse of number is "+rev);

}

}

***Input***: 890

***Output:*** Reverse of number is 98

3.

interface livingThings

{

abstract void grow();

}

interface Animal

{

abstract void move();

}

public class Dog implements livingThings,Animal

{

public void grow()

{

System.out.println("All Living things grow");

}

public void move()

{

System.out.println("All animals move");

}

public static void main(String args[]){

Dog d=new Dog();

d.grow();

d.move();

}

}

***Output:*** Living things grow

All animals move

4.

import java.util.Scanner;

public class SumOfDigits

{

public static void main(String args[]){

int n,sum=0,x;

Scanner sc=new Scanner(System.in);

System.out.println("enter number:");

n=sc.nextInt();

while(n>0){

x = n%10;

n = n/10;

sum = sum+x;

}

System.out.println("sum of digits of given number=" + sum);

}

}

***Input***: 45

***Output:*** 9

**5.**

import java.util.Scanner;

public class Fibanocci

{

public static void main(String args[]){

int n,a=0,b=1,c;

Scanner sc=new Scanner(System.in);

System.out.println("enter number:");

n=sc.nextInt();

System.out.print(a+" "+b);

for(int i=3;i<=n;i++){

c=a+b;

System.out.print(","+c);

a=b;

b=c;

}

System.out.println();

}

}

***Input***: 9

***Output:*** 0,1,1,2,3,5,8,13,21

**6.**

import java.util.Scanner;

class PrimeExample{

public static void main(String args[]){

int n,m=0,k=0;

Scanner s=new Scanner(System.in);

n=s.nextInt();

m=n/2;

for(int i=2;i<=m;i++){

if(n%i==0){

System.out.println("Number is not prime");

k=1;

break;

}

}

if(k==0)

System.out.println("Number is prime");

}

}

**Case 1:**

***Input***: 55

***Output:*** Number is not prime

**Case 2:**

***Input***: 97

***Output:*** Number is prime

**7.**

public class OverLoad {

void add(int m, int n)

{

int sum = m + n;

System.out.println( "Sum of a+b is " +sum);

}

void add(int a, int b, int c) {

int sum = a + b + c;

System.out.println("Sum of a+b+c is " +sum);

}

void display()

{

System.out.println("Outputs are displayed");

}

}

class overRide extends OverLoad{

void display()

{

System.out.println("Successfully");

}

}

class Example{

public static void main(String args[])

{

OverLoad o = new OverLoad();

overRide r = new overRide();

o.add(4,19);

o.add(4,17,11);

o.display();

r.display();

}

}

***Output:*** Sum of a+b is 23

Sum of a+b+c is 32

Outputs are displayed

Successfully

**8.**

import java.util.Scanner;

class SwapNum{

public static void main(String args[]){

int a,b;

Scanner s=new Scanner(System.in);

a=s.nextInt();

b=s.nextInt();

a=a+b;

b=a-b;

a=a-b;

System.out.println("the value of a after swapping:"+a);

System.out.println("the value of b after swapping:"+b);

}

}

***Input***: 99

5

***Output:*** the value of a after swapping:5

the value of b after swapping:99

**9.**

import java.util.Scanner;

class weekDays{

public static void main(String args[]){

int n;

Scanner s=new Scanner(System.in);

n=s.nextInt();

switch(n){

case 1:

System.out.println("Monday");

break;

case 2:

System.out.println("Tuesday");

break;

case 3:

System.out.println("Wednesday");

break;

case 4:

System.out.println("Thursday");

break;

case 5:

System.out.println("Friday");

break;

case 6:

System.out.println("Saturday");

break;

case 7:

System.out.println("Sunday");

break;

default:

System.out.println("not valid");

}

}

}

***Input***: 5

***Output:*** Friday

**10.**

import java.util.Scanner;

class MaxOfNum{

public static void main(String args[]){

int a,b;

Scanner s=new Scanner(System.in);

a=s.nextInt();

b=s.nextInt();

if(a>b)

{

System.out.println("a has maximum value:"+a);

}

else

System.out.println("b has maximum value:"+b);

}

}

***Input***: 5

10

***Output:*** bhas maximum value:10