Java Programming

* **Message printing • Polymorphism**
* **Scanner class • Final Keyword**
* **Conditional Statements • Static keyword**
* **Loops • Super keyword**
* **Switch Case Statement. • This keyword**
* **Arrays • Wrapper Class**
* **String. • Inner Class**
* **Constructor • Exception Handling**
* **Inheritance. • Multithreding**
* **Interface • Package**
* **Abstract Keyword. • Applet**

**Message**

• **Message printing**

//Print Messages in Java with 3 ways

class Main {

public static void main(String[] args) {

System.out.println(“\t\tHello, Java Learners”);//break line and occupy full line

System.out.print(“\t\tWelcome to our Java Programming”);//print in same line

System.out.print(“\n\t\tLet’s get Started ! “);//break the Line

}

}

**Output**

****

**Scanner Classs**

**• Scanner Class**

//java program to read 2 numbers in read function and display it using show function

import java.util.Scanner;

class Demo {

int a, b;

Scanner sc = new Scanner(System.in);

void read() {

System.out.println(“Enter 1 Number”);

a= sc.nextInt();

System.out.println(“Enter 2 Number”);

b = sc.nextInt();

}

void show() {

System.out.println(“Your Enter Number:”);

System.out.println(“1 Number :” + a);

System.out.println(“2 Number :” + b);

}

}

class Main {

public static void main(String[] args) {

Demo d1 = new demo();

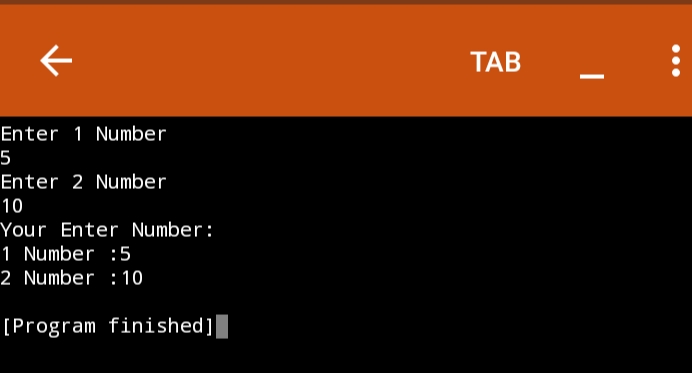
d1.read();

d1.show();

}

}

**Output**

****

**Conditional Statements**

**1 if – Statement**

//If Statement using class and object

import java .util.Scanner;

class condition

{

int pwd;

Scanner sc=new Scanner(System.in);

void read()

{

System.out.print("Enter Password : ");

pwd=sc.nextInt();

//Password : 13

}

void show()

{

if(pwd<=13)

{

System.out.println("\n Welcome to my Portfolio \n");

System.out.println("Name : Rajput Neha Jitendra\n");

System.out.println("Student: SYBCA-B Roll No : 144\n");

System.out.println("College :RCPET's IMRD College Shirpur\n");

System.out.println("Techie : Intested in todays IT Industry\n");

}

}

}

public class Main {

public static void main(String[] args) {

condition co=new condition();

co.read();

co.show();

}

}

**Output**

**2 if – else Statement**

//If Statement using class and object

import java.util.Scanner;

class condition

{

int pwd;

Scanner sc=new Scanner(System.in);

void read()

{

System.out.print(“Enter Password : “);

pwd=sc.nextInt();

//Password : 13

}

void show()

{

if(pwd==13)

{

System.out.println(“\n Welcome to my Portfolio \n”);

System.out.println(“Name : Rajput Neha Jitendra\n”);

System.out.println(“Student: SYBCA-B Roll No : 144\n”);

System.out.println(“College :RCPET’s IMRD College Shirpur\n”);

System.out.println(“Techie : Intested in todays IT Industry\n”);

}

else

{

System.out.println(“\nSorry ! ....Wrong Password\n\nYou can’t see my Portfolio”);

}

}

}

class Main {

public static void main(String[] args) {

condition co=new condition();

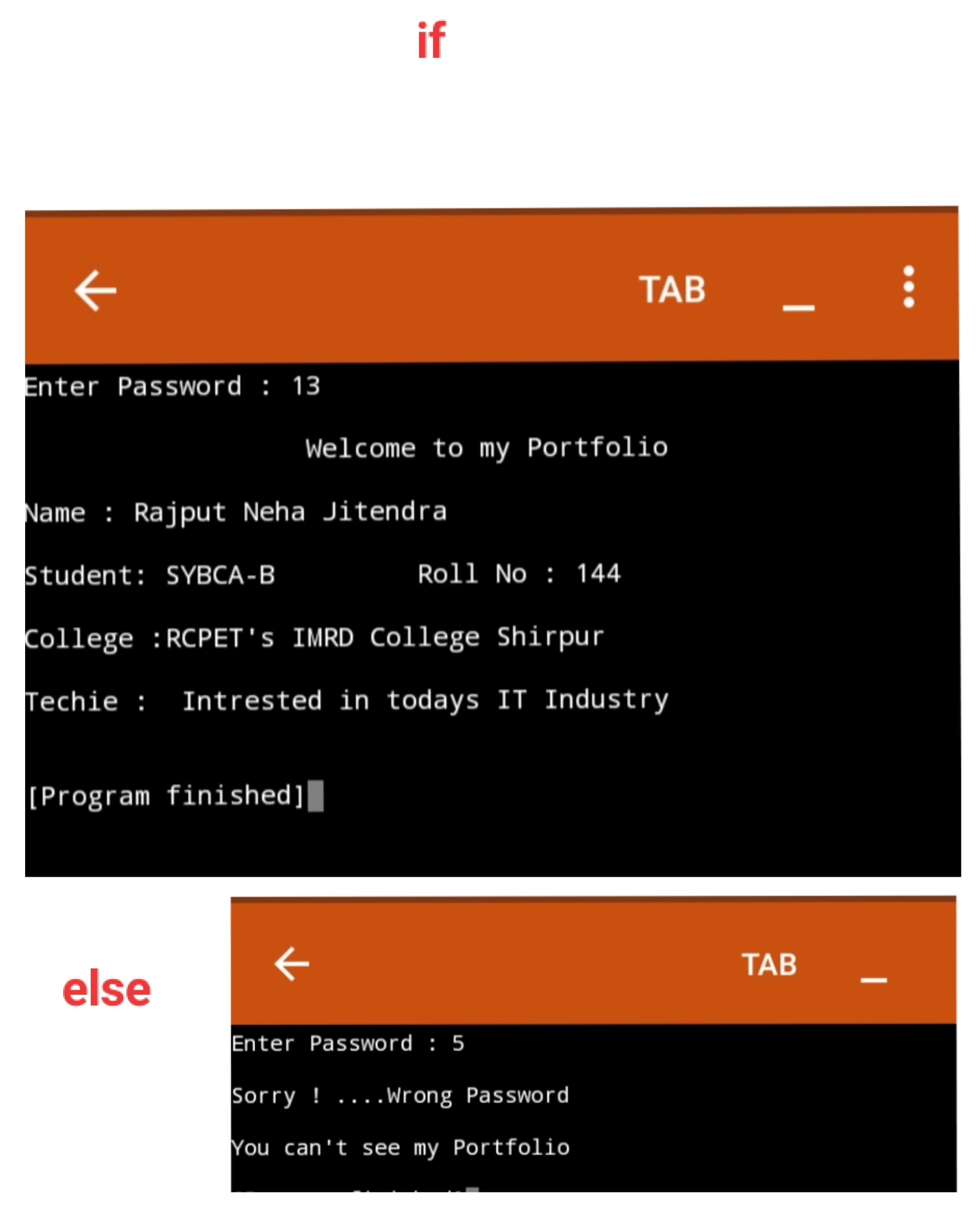
co.read();

co.show();

}

}

**Output**



**3 if - else - if Statement**

//if-else-if statement using class and object

import java.util.Scanner;

class Mark {

int marks;

Scanner sc = new Scanner(System.in);

void read() {

System.out.println(“\n Welcome...Here you Check your Marks Destination\n”);

System.out.print(“Enter Your Marks : “);

Marks = sc.nextInt();

}

void show() {

if (marks >= 60 && marks <= 100) {

System.out.println(“ \n Hey Great you Secured : First Class Destination.”);

} else if (marks >= 45 && marks <= 60) {

System.out.println(“\n Hey Very Good you Secured : Second Class Destination.”);

} else if (marks >= 33 && marks <= 45) {

System.out.println(“\n Hey Good you Secured : Third Class Destination.”);

} else {

System.out.println(“\nHey Sorry!.. you are Fell.”);

}

}

}

public class Main {

public void main(String] args []) {

Mark mk = new Mark();

mk.read();

mk.show();

}

}

**Output**

****

**Loop**

**1 while Loop**

//Program to display numbers n number upto n time on your Choice

import java.util.Scanner;

class Wloop

{

void get()

{

Scanner sc=new Scanner(System.in);

System.out.println(“ Hey its While Loop\n\n Display n Number upto n time on your Chioce”);

System.out.print(“\nEnter any Number : “);

int i = sc.nextInt();

System.out.print(“Enter range to print : “);

int n = sc.nextInt();

while(i <= n) {

System.out.println(i);

i++;

}

}

}

class Main {

public static void main(String[] args) {

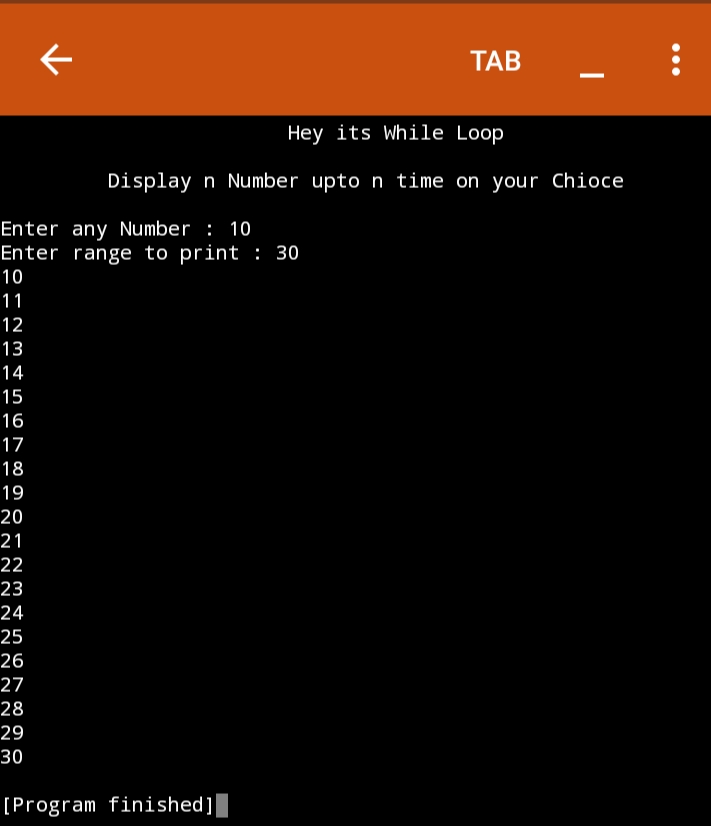
Wloop wl=new Wloop();

wl.get();

}

}

**Output**

****

**2 do - while Loop**

//do-while loop with Class and Object

import java.util.Scanner;

class Dwhile{

Voidvoid demo()

{

Scanner sc=new Scanner(System.in);

System.out.println(“ Enter any Number between 1 to 20\n\n Get Counting of it upto 20”);

System.out.print(“\nEnter Number : “);

Intint a=sc.nextInt();

Dodo

{

System.out.println(a);

a++;

}

Whilewhile(a<=20);

}

}

class Main{

public static void main(String args[])

{

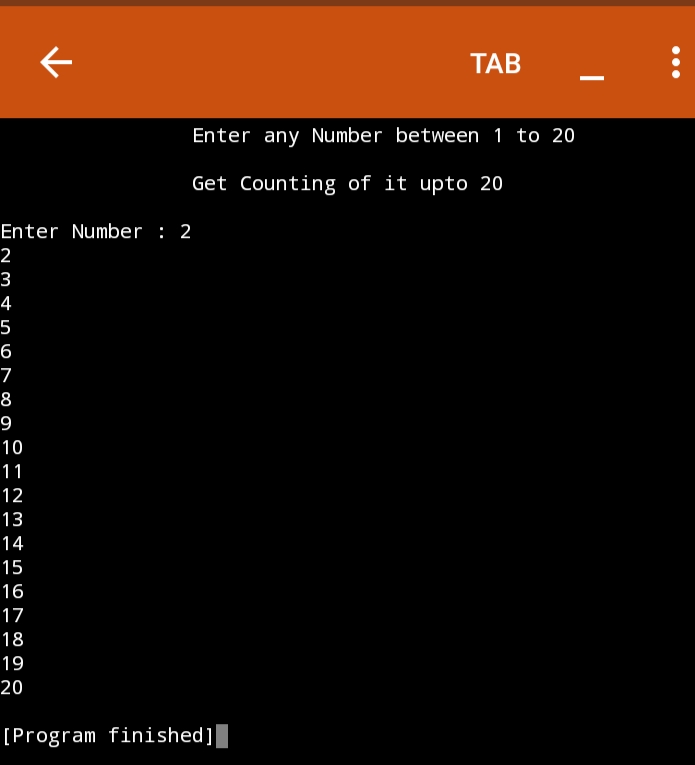
Dwhile d=new dwhile();

d.demo();

}

}

**Output**

****

**3 for Loop**

//for-loop with class -object

import java.util.Scanner;

class Floop {

int a, i;

Scanner sc = new Scanner(System.in);

void read() {

System.out.println(“ Hey Welcome!\_\_Lets get fun\n Enter any Number..and..get table of that Number...”);

System.out.print(“\nEnter a Number : “);

a = sc.nextInt();

}

void show() {

if(ii = 1; i <= 10; i++) {

System.out.println(a \* i);

}

}

}

class Main {

public static void main(String[] args) {

Floop fl = new Floop();

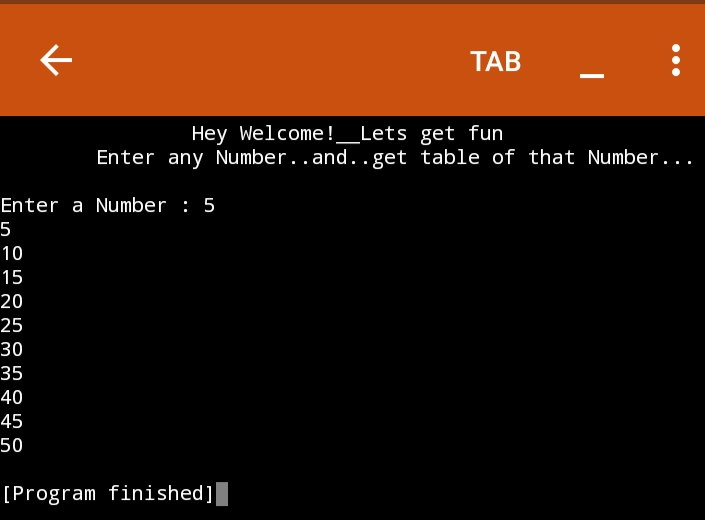
fl.read();

fl.show();

}

}

**Output**

****

**Switch -Case Statement**

**• Calculator with Switch -Case Statement**

// Calculator in java with switch-case statement using class & object

import java.util.Scanner;

class calculator

class Calculator

{

int a,b,c,ch;

Scanner sc=new Scanner(System.in);

Voidvoid rules()

{

System.out.println(“ \_\_\_\_\_ CALCULATOR \_\_\_\_\_ \n “);

System.out.println(“\n\tEnter Your Choice Number for Calculation\t\n”);

System.out.println(“1 : Addition \n”);

System.out.println(“2 : Substraction\n”);

System.out.println(“3 : Multiplication\n “);

System.out.println(“4 : Division\n”);

System.out.println(“5 : Modulation\n”);

}

void read()

{

System.out.print(“Enter 1 Number : “);

Aa=sc.nextInt();

System.out.print(“Enter 2 Number : “);

Bb=sc.nextInt();

}

void show()

{

System.out.print(“\nEnter your Choice : “); ch=sc.nextInt();

Switch (ch)

{

case 1: c=a+b;

System.out.println(“\nAddition : “+a+”+”+b+” = “+c);

break;

case 2: c=a-b;

System.out.println(“\nSubstraction : “+a+”-“+b+” = “+c);

break;

case 3: c=a\*b;

System.out.println(“\nMultiplication : “+a+”\*”+b+” = “+c);

break;

case 4: c=a/b;

System.out.println(“\nDivision : “+a+”/”+b+” = “+c);

break;

case 5:c=a%b;

System.out.println(“\nModulation : “+a+”%”+b+” = “+c);

break;

default:

System.out.println(“\nSorry ! Your Choise is Invalid”);

}

}

}

class Main

{

public static void main(String args[])

{

Calculator cl=new calculator();

cl.rules();

cl.read();

cl.show();

}

}

**Output**

****

**Array**

1. **Accessing Array elements**

//Array initialization , Declaration and Acceng Array Elements

class Main{

public static void main(String[] args) {

//array creation

int[] even = {2, 4, 6, 8, 10};

// accessing each elements of array

System.out.println(“|| Accessing Elements of Array ||”);

System.out.println(“First Element: “ + even[0]);

System.out.println(“Second Element: “ + even[1]);

System.out.println(“Third Element: “ + even[2]);

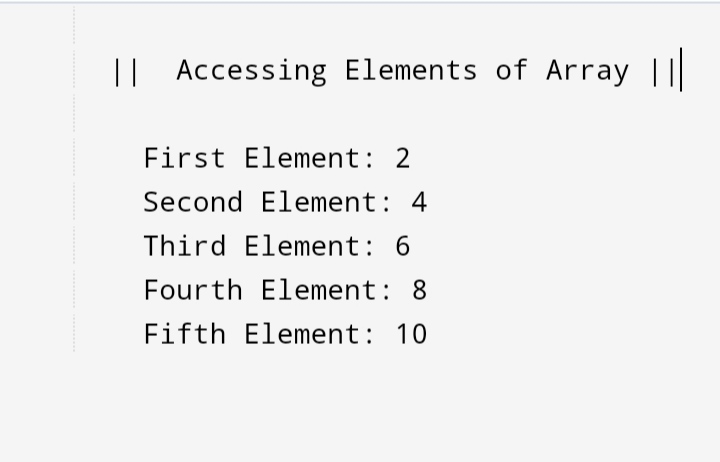
System.out.println(“Fourth Element: “ + even[3]);

System.out.println(“Fifth Element: “ + even[4]);

}

}

**Output**

****

**2 Array with for loop**

//Array elements access using Loops

class Main{

public static void main(String []args){

int[] a={ 1,3,5,7,9 };

System.out.println(“Access Array Elements with Loop”);

for(int i=0;i<a.length;i++)

{

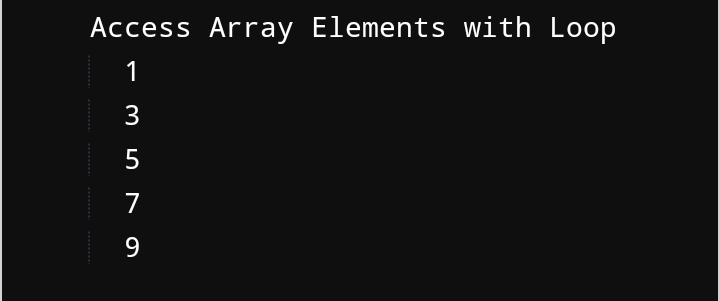
System.out.println(a[i]);

}

}

}

**Output**

****

**3 Array with for each loop**

//Array elements access using for each Loops

class Main{

public static void main(String []args){

int a[]={ 1,3,5,7};

System.out.println(“Access Array Elements with for-each Loop”);

for(int i:a)

{

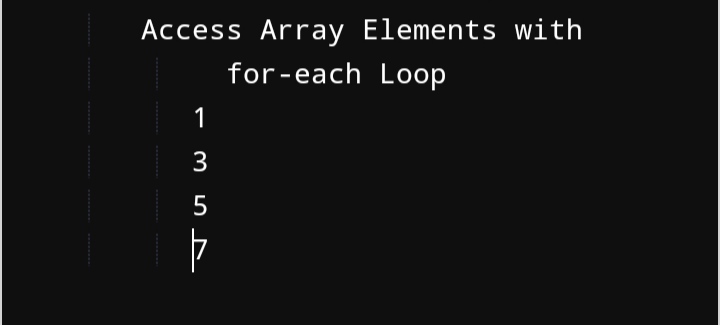
System.out.println(i);

}

}

}

**Output**

****

**String**

//String Method in Java

class Main {

public static void main(String[] args) {

// Declaration and Creation Strings

System.out.println(“| String Method |”);

String str1 = “Java”;

String str2 = “Programming”;

// print strings

System.out.println(“String 1: “+ str1);

System.out.println(“String 2: “+ str2);

//concat two string

String str3 = str1.concat(str2) ;

System.out.println(“Joined String : “+str3);

//length of joined string

System.out.println(“Length of Joined String String :”+str3.length());

//compare two string

boolean cmp=str1.equals(str2);

System.out.println(cmp+” : String1 –“+str1+” is not equals to String2 –“+str2);

//charat return character at index 0

System.out.println(“Character at Index 0 in String 1 Java”+str1.charAt(0));

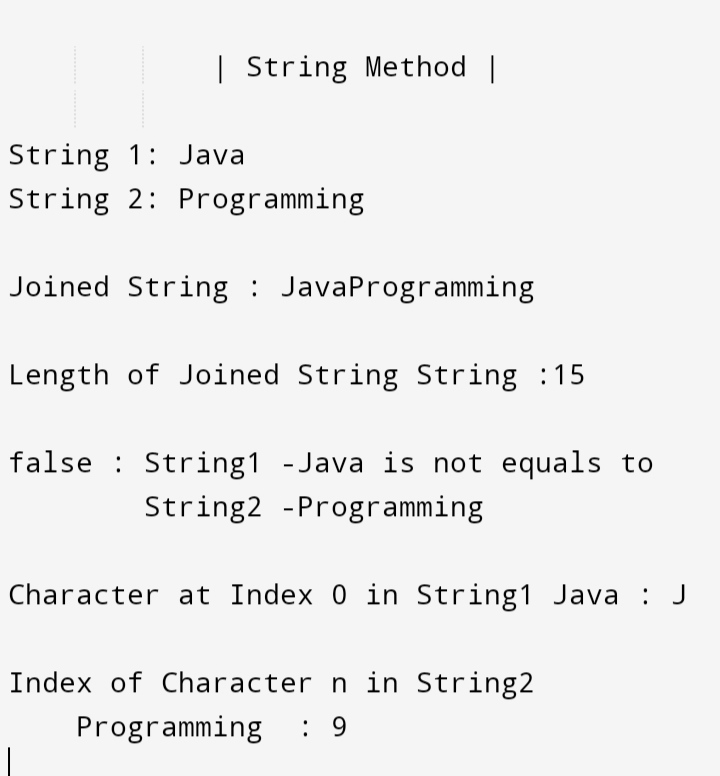
//indexOf return index of character n

System.out.println(“Index of Character n in String2 Programming “+str2.indexOf(‘n’));

}

}

**Output**

****

**Constructor**

**1 Default Constructor**

//Default Constructor

class DC{

DC()

{

System.out.println(“I am Called Automatically\n Because\nI am Constructor”);

}

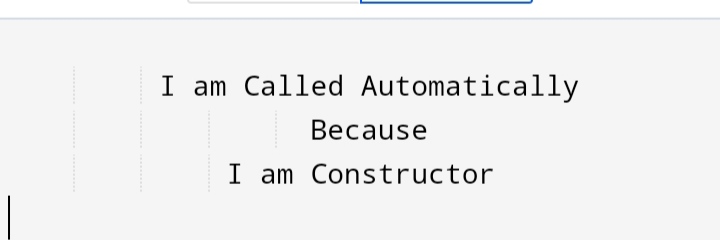
public static void main(String[] args) {

DC ob =new DC();

}

}

**Output**

****

**2 Parameterized Constructor**

//Parameterized Constructor

class PC{

String name;

PC(String Con) {

name = Con;

System.out.println(name + “ Constructor “);

}

public static void main(String[] args) {

System.out.println(“ Types of Constructor “);

PC ob1 = new PC(“1 Default”);

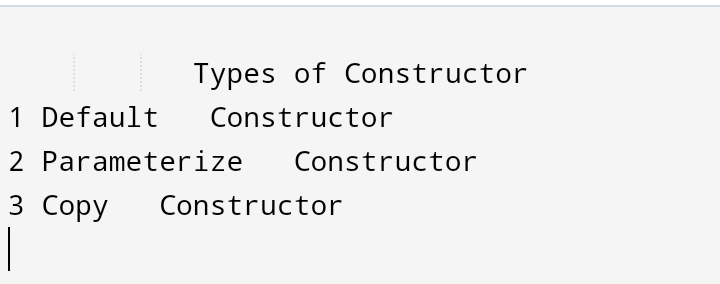
PC ob2 = new PC(“2 Parameterized”);

PC ob3 = new PC(“3 Copy”);

}

}

**Output**

****

1. **Copy Constructor**

//Copy Constructor

class CC

{

int a;

String poly;

CC(int b, String many)

{

a = b;

poly = many;

}

CC(CC obj)

{

a = obj.a;

poly = obj.poly;

}

void show()

{

System.out.println(“Types of Constructor : “+a);

System.out.println(“Constructor can be “+poly);

}

public static void main(String args[])

{

CC ob1 = new CC(3, “Overloaded”);

ob1.show();

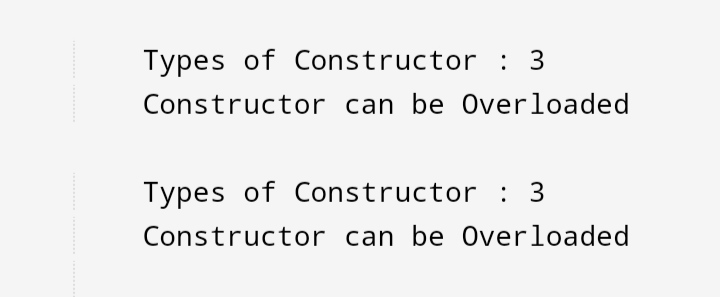
CC ob2 = new CC(ob1);

ob2.show();

}

}

**Output**

****

**4 Constructor Overloading**

//Constructor Overloading

public class CO

{

CO()

{

System.out.println(“I am CONSTRUCTOR”);

}

CO(int a)

{

System.out.println(“I am in Type : “+a);

}

CO(String tp1, String tp2)

{

System.out.println(“I am Called “+tp1+” , Without Creating”+tp2);

}

public static void main (String args[])

{

CO ob1 = new CO();

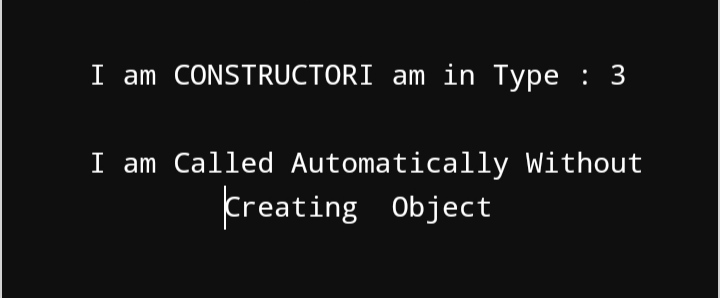
CO ob2 = new CO(3);

CO ob3 = new CO(“Automatically”,”Object”);

}

}

**Output**

****

**Inheritance**

**1 Single Inheritance**

//Single Inheritance

class Base

{

public void M1()

{

System.out.println(“\n\t\t\tSingle Inheritance\n”);

System.out.println(“\tBase Class Method\n”);

}

}

class Derived extends Base

{

public void M2()

{

System.out.println(“\tDirived Class Method”);

}

}

class Test

{

public static void main(String[] args)

{

Derived d = new Derived();

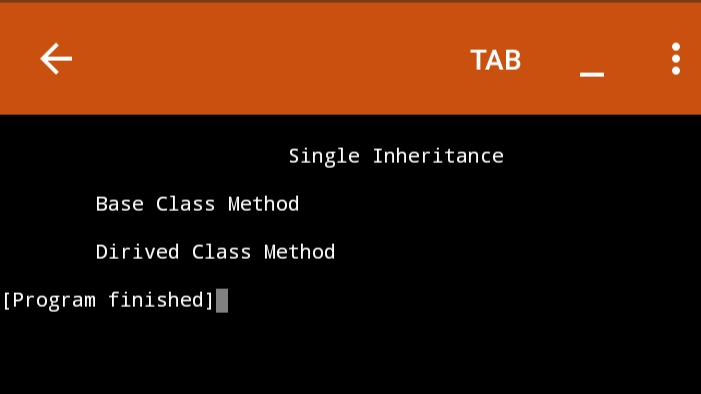
d.M1();

d.M2();

}

}

**Output**

****

**2 Multilevel Inheritance**

class Country

{

void name()

{

System.out.println("\n\t\t Multilevel Inheritance");

System.out.println("\n\t\t\tINDIA");

System.out.println("\t\t\t ||");

}

}

class State extends Country

{

void name1()

{

System.out.println("\t\t MAHARASHTRA");

System.out.println("\t\t\t ||");

}

}

class City extends State

{

void name2()

{

System.out.println("\t\t\tDHULE");

}

}

public class Main {

public static void main(String[] args) {

City nm=new City();

nm.name();

nm.name1();

nm.name2();

}

}

**Output**

****

**3 Multiple Inheritance**

Multiple Inheritance is not supported in Java. Instead it we use Interface.

// Online Java Compiler

// Use this editor to write, compile and run your Java code online

/\* Online Java Compiler and Editor \*/

interface Charge{

public void show1();

}

class Data{

String Divice = "Charger";

void show2() {

System.out.println(Divice+ " can also be used for transferring Data Quickly.");

}

}

class Charging extends Data implements Charge {

public void show1() {

System.out.println(Divice + " can be used for Charging Computable Android Device");

}

public static void main(String[] args) {

System.out.println("|| Charger ||");

Charging use= new Charging ();

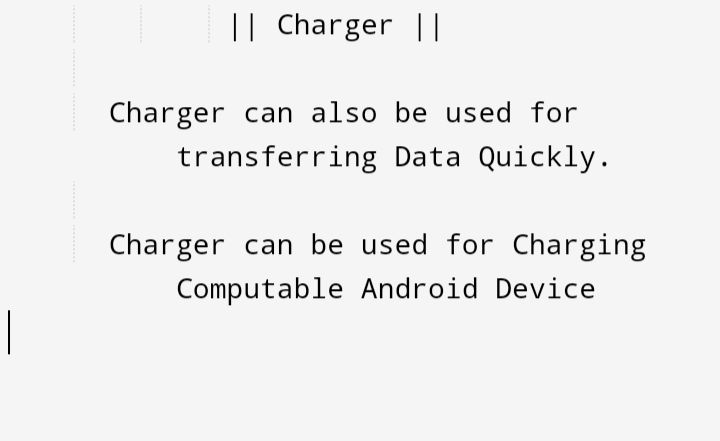
use.show2();

use.show1();

}

}

**Output**

****

**4 Hierarchical Inheritance**

//Hierachical Inheritance

class State

{

void show()

{

System.out.println("\n\t\tWelcome to Our Maharashtra");

}

}

class City1 extends State

{

void show1()

{

System.out.println("\t\t Nagpur : Orange City\n ");

}

}

class City2 extends State

{

void show2()

{

System.out.println("\t\t Nashik : Wine City");

}

}

public class Main {

public static void main(String[] args) {

City1 nm1=new City1();

nm1.show();

nm1.show1();

City2 nm2=new City2();

nm2.show();

nm2.show2();

}

}

**Output**

****

**5 Hybrid Inheritance**

// Online Java Compiler

// Use this editor to write, compile and run your Java code online

/\* Online Java Compiler and Editor \*/

class A {

void showA()

{

System.out.println("Asia continent");

}

}

//Single Inheritance

class B extends A {

void showB()

{

System.out.println("Country : India");

}

}

//Multiple Inheritance

class C extends B {

void showC()

{

System.out.println("State : Maharashtra");

}

}

class D extends B {

void showD()

{

System.out.println("State : Gujarat");

}

}

class Main {

public static void main(String[] args) {

C obC = new C();

obC.showA();

obC.showB();

obC.showC();

D obD = new D();

obD.showA();

obD.showB();

obD.showD();

}

}

**Output**

****

**Interface**

**implements in class**

//Interface implements in class

import java.util.Scanner;

interface i1

{

public void add();

public void sub();

public void mul();

public void div();//Declaration function

}

class inh implements i1

{

public void add()

{

Scanner sc=new Scanner(System.in);

System.out.println("\n\t\t Arithmetic Operation\n");

System.out.print("Enter 1 number:");

int a=sc.nextInt();

System.out.print("Enter 2 number:");

int b=sc.nextInt();

int c=a+b;

System.out.println("Addition : "+c);

System.out.println("\n------------------------------------------------------------\n");

}

public void sub()

{

Scanner sc=new Scanner(System.in);

System.out.print("Enter 1 number:");

int a=sc.nextInt();

System.out.print("Enter 2 number:");

int b=sc.nextInt();

int c=a-b;

System.out.println("Substraction: "+c);

System.out.println("\n------------------------------------------------------------\n");

}

public void mul()

{

Scanner sc=new Scanner(System.in);

System.out.print("Enter 1 number:");

int a=sc.nextInt();

System.out.print("Enter 2 number:");

int b=sc.nextInt();

int c=a\*b;

System.out.println("Multiplication : "+c);

System.out.println("\n------------------------------------------------------------\n");

}

public void div()

{

Scanner sc=new Scanner(System.in);

System.out.print("Enter 1 number:");

int a=sc.nextInt();

System.out.print("Enter 2 number:");

int b=sc.nextInt();

int c=a/b;

System.out.println("Division : "+c);

System.out.println("\n------------------------------------------------------------\n");

System.out.println("\nCongratulation! You complete all Arithmatic Opration in Java \n");

}

}

class Main3

{

public static void main(String args[])

{

inh ob=new inh();

ob.add();

ob.sub();

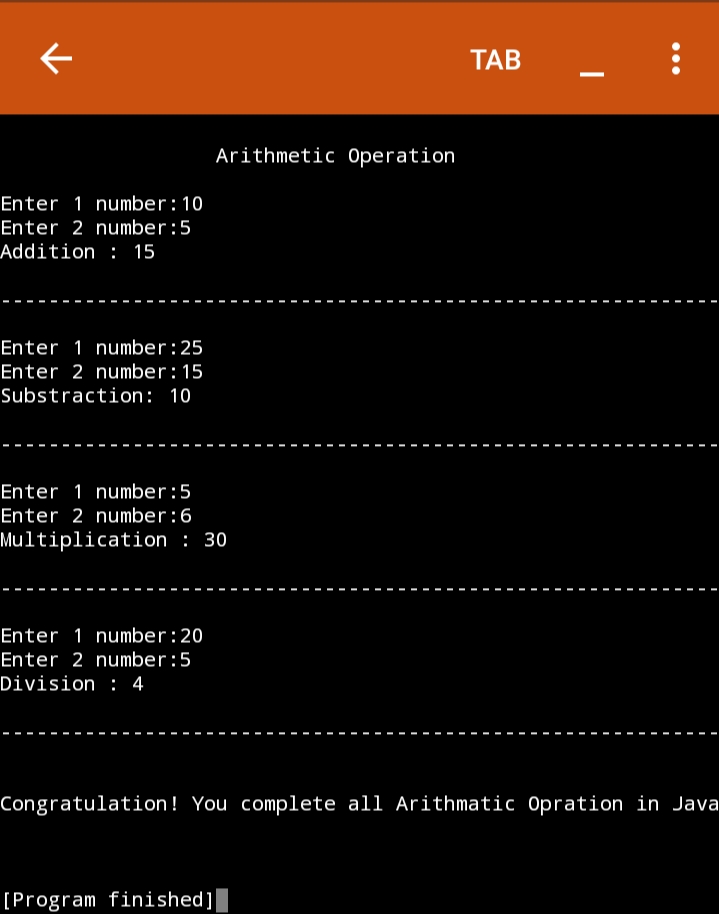
ob.mul();

ob.div();

}

}

**Output**

****

**2 interface extends in interface**

//interface extends in interface and interface implements in class

import java.util.Scanner;

interface get

{

vread();

}

interface put extends get

{

void print();

}

class table implements put

{

Scanner sc=new Scanner(System.in);

int a;

public void read()

{

System.out.println(“\n\t\t\t Table\n”);

System.out.print(“Enter Number : “);

a=sc.nextInt();

}

public void print()

{

System.out.println(“\nTable of :”+a);

fint i=1;i<=10;i++)

{

System.out.println(“\t “+a\*i);

}

}

}

public class Main {

public static void main(String[] args) {

table t1=new table();

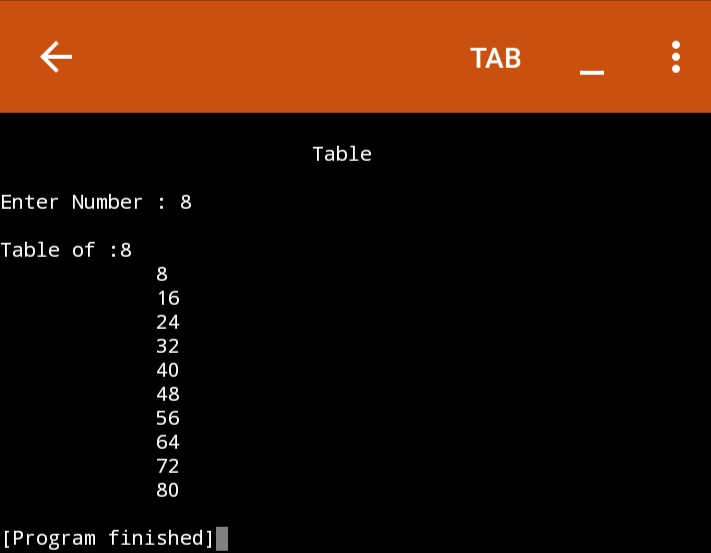
t1.read();

t1.print();

}

}

**Output**

****

**Abstract Keyword**

**abstract method in abstract class**

//abstract method in abstract class

import java.util.Scanner;

abstract class check

{

int n;

Scanner sc=new Scanner(System.in);

void read()

{

System.out.println(“\n\t\tCheck Number is Even or Odd”);

System.out.print(“\nEnter a Number : “);

n=sc.nextInt();

}

public abstract void show();

}

class EvenOdd extends check

{

public void show()

{

if(n%2==0)

{

System.out.println(“\t\tNumber is Even”);

}

else{

System.out.println(“\t\tNumber is Odd”);

}

}

}

class Main {

public static void main(String[] args) {

EvenOdd EO=new EvenOdd();

EO.read();

EO.show();

}

}

**Output**

****

**Polymorphism**

**1 Method Overloading**

//Method Overloading

class movel

{

int a,b,c;

void demo(int x ,int y)

{

a=x;

b=y;

}

void demo(int z)

{

c=z;

}

void demo()

{

System.out.println("Multiplication : " +a\*b\*c);

}

}

public class Main {

public static void main(String[] args) {

movel ob=new movel();

ob.demo(5,6);

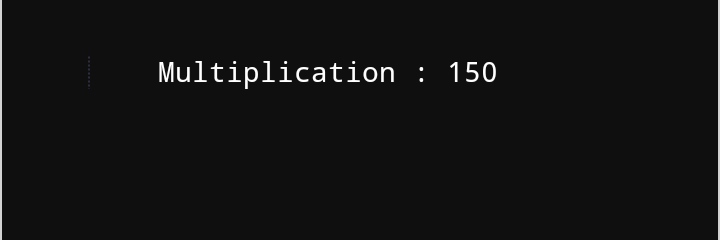
ob.demo(5);

ob.demo();

}

}

**Output**

****

**2 Method Overriding**

//Method Overriding

class rpol

{

void print()

{

System.out.println("Base class Method");

}

}

class dpol extends rpol

{

void print()

{

System.out.println("\n\t\tDerived class Method");

}

}

public class Main {

public static void main(String[] args) {

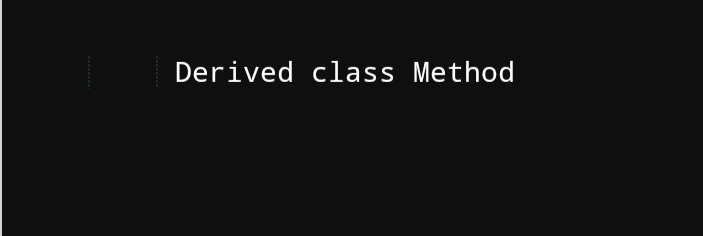
dpol ob=new dpol();

ob.print();

}

}

**Output**

****

**Final Keyword**

**1 final variable**

//final variable

public class Main {

public static void main(String[] args) {

System.out.println("a is final variable it stop the value change ");

final int a=10;

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

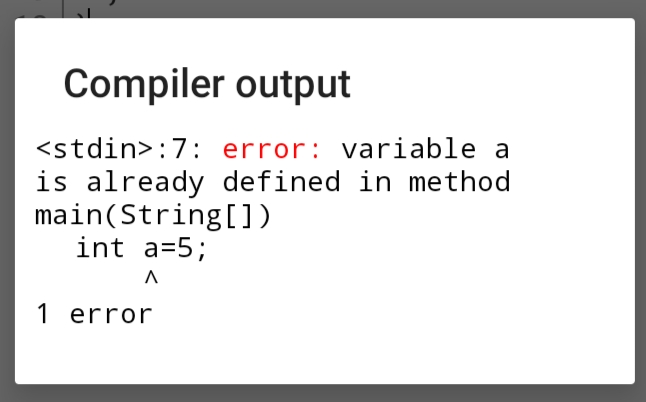
int a=5;

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

}

}

**Output**



**2 final method**

//final method

class A

{

final void display()

{

System.out.println(“its final method”);

}

}

class B extends A

{

void display()

{

System.out.println(“its Method”);

}

}

public class Main

{

public static void main(String[] args)

{

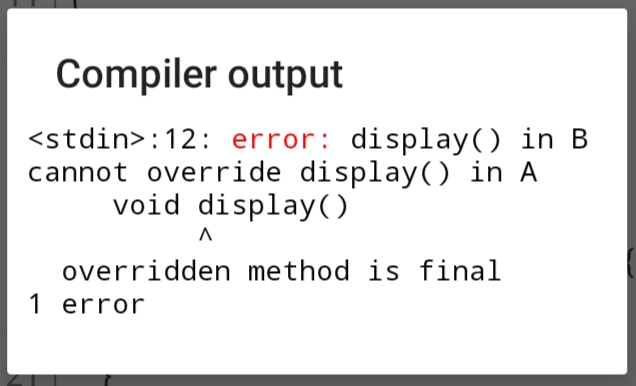
B ob=new B();

ob.display();

}

}

**Output**

****

**3 final class**

//final class

final class A

{

void demo1()

{

System.out.println(“This is Method of final class”);

}

}

class B extends A

{

void demo2()

{

System.out.println(“This is Dirived class Method”);

}

}

public class Main void main(String[] args) {

{

B Ob=new B();

Ob.demo1();

Ob.demo2();

}

}

**Output**

**Static Keyword**

**1 Static variable**

class Main

{

static String name=”Java developer”;//static variable

public static void main(String args[])

{

System.out.println(name+”James Gosling”);

System.out.println(name+”Mike Sheridan”);

System.out.println(name+”Patrick Naughton”);

}

}

**Output**

****

**2 Static Method**

* **Statit method within 1 class**

//static method in main method

public class A

{

static void demo()//static Method

{

System.out.println("I am static Method");

}

public static void main(String args[])

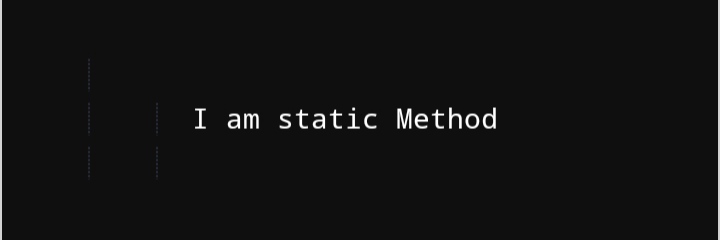
{

demo();//static method called without creating object

}

}

**Output**

****

* **Static method within 2 class**

//static method called by creating object

class A

{

static void org()

{

System.out.println("Colleges Under SES");

System.out.println("Shirpur Education Society's");

}

void clg1()

{

System.out.println("R. C. Patel Institute Of Pharmaceutical Education And Research , Shirpur");

}

void clg2()

{

System.out.println("R. C. Patel Institute of Technology, Shirpur");

}

void clg3()

{

System.out.println("R. C. Patel Polytechnic , Shirpur");

}

}

public class Main

{

public static void main(String args[])

{

A ob=new A();

A.org();

ob.clg1();

A.org();

ob.clg2();

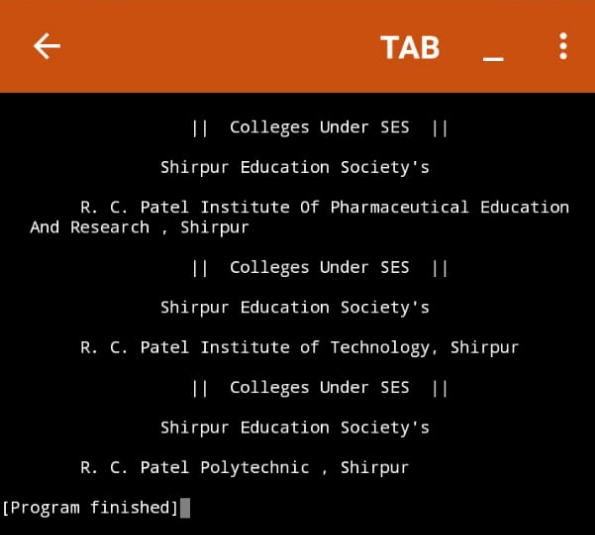
A.org();

ob.clg3();

}

}

**Output**

****

**Static Block**

* **Static block within 1 class**

class Main

{

//static block

static{

System.out.println("Static Block");

}

public static void main(String args[])

{

System.out.print("Main Method");

}

}

**Output**

****

* **Static block within 2 class**

class A

{

//static block

static{

System.out.println("\n\t\t\tIts Static Block");

}

}

class Main{

public static void main(String args[])

{

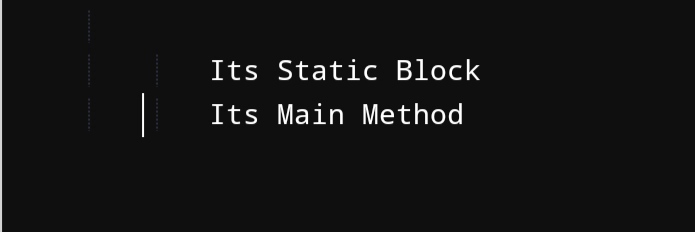
A ob=new A();//Static block of A class called

System.out.print("\n\t\t\tIts Main Method");

}

}

**Output**

****

**Super keyword**

* **Super keyword**

// super Keyword

class Super

{

void msg()

{

System.out.println("Namastey India");

}

}

class local extends Super

{

void msg()

{

super.msg();

System.out.println("Namskar Maharashtra");

}

}

public class HelloWorld{

public static void main(String []args){

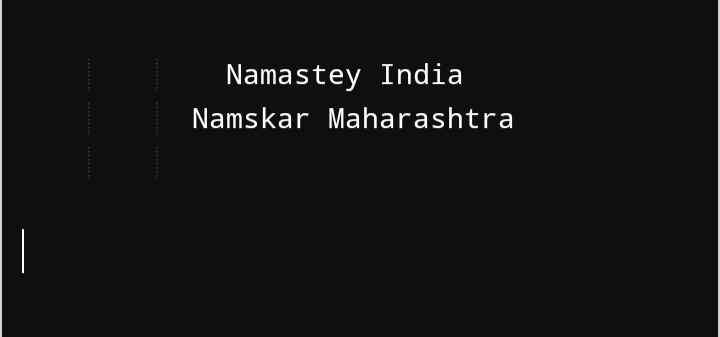
local ob= new local();

ob.msg();

}

}

**Output**

****

**This keyword**

* **This keyword**

//this keyword

public class A

{

String a;

A(String a)

{

this.a=a;

}

void show()

{

System.out.println(a);

}

public static void main (String args[])

{

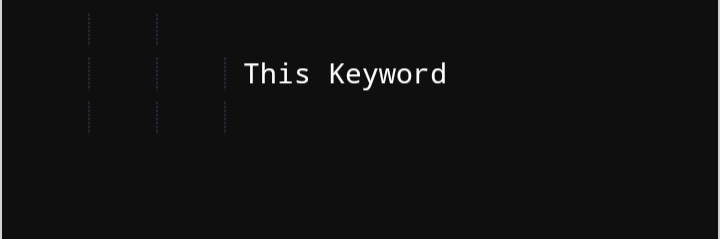
A ob= new A("This Keyword");

ob.show();

}

}

**Output**

****

**Wrapper class**

//wrapper class

class Wrapper

{

public static void main(String args[])

{

byte b=10;

short s=20;

int i=30;

long l=40;

float f=50.0F;

double d=60.0D;

char c=’a’;

boolean b2=true;

//Autoboxing Converting primitives into objects

Byte byteobj=b;

Short shortobj=s;

Integer intobj=i;

Long longobj=l;

Float floatobj=f;

Double doubleobj=d;

Character charobj=c;

Boolean boolobj=b2;

//printing objects

System.out.println(“\n\t\t ---- Printing Object Value ----“);

System.out.println(“\n\t\tByte object : “+byteobj);

System.out.println(“\n\t\tShort object : “+shortobj);

System.out.println(“\n\t\tInteger object : “+intobj);

System.out.println(“\n\t\tLong object : “+longobj);

System.out.println(“\n\t\tFloat object : “+floatobj);

System.out.println(“\n\t\tDouble object : “+doubleobj);

System.out.println(“\n\t\tCharacter object : “+charobj);

System.out.println(“\n\t\tBoolean object : “+boolobj);

//Unboxing Converting Objects to Primitives

Byte bytevalue=byteobj;

Int intvalue=intobj;

Short shortvalue=shortobj;

Long longvalue=longobj;

Float floatvalue=floatobj;

Double doublevalue=doubleobj;

Char charvalue=charobj;

Boolean boolvalue=boolobj;

//Printing Primitives

System.out.println(“\n\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\n\n\t\t---- Printing Object Value ----“);

System.out.println(“\n\t\tByte value : “+bytevalue);

System.out.println(“\n\t\tShort value : “+shortvalue);

System.out.println(“\n\t\tInteger value : “+intvalue);

System.out.println(“\n\t\tLong value : “+longvalue);

System.out.println(“\n\t\tFloat value : “+floatvalue);

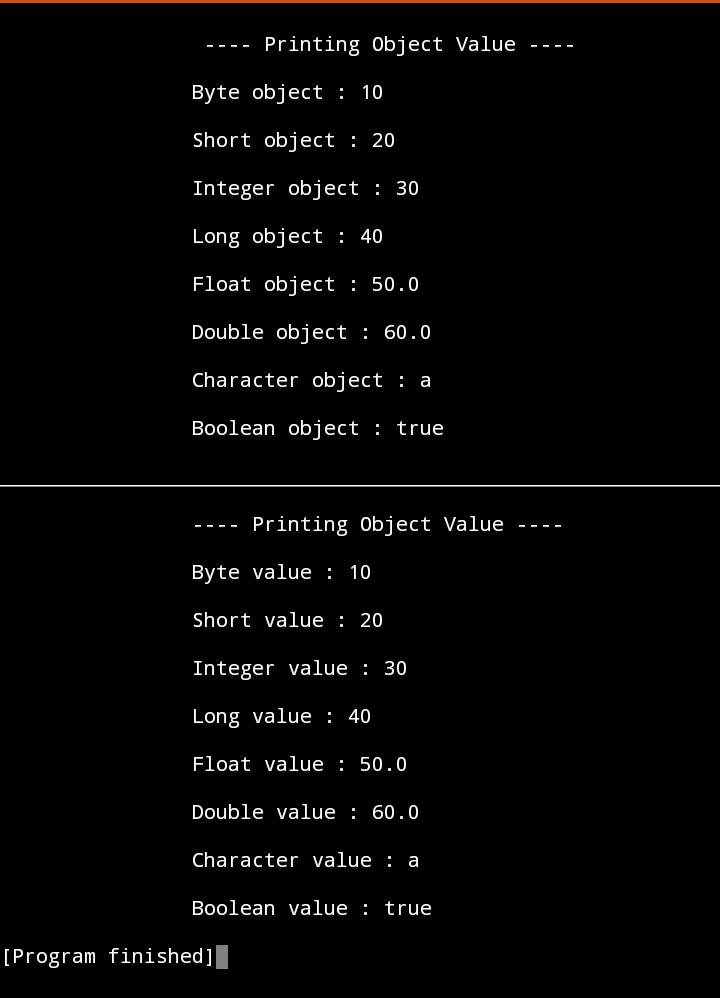
System.out.println(“\n\t\tDouble value : “+doublevalue);

System.out.println(“\n\t\tCharacter value : “+charvalue);

System.out.println(“\n\t\tBoolean value : “+boolvalue);

}

**Output**

****

**Inner class**

|  |
| --- |
|  |
|  |  |
|  |  |
|  |  |
|  |  |
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|  |  |
| --- | --- |
|  |  |
|  |  |

//Inner Class

class Outer{

void showO(){

System.out.println("Outer class Method ");

}

class Inner{

public void showI(){

System.out.println("\n\t\t\t Inner class method");

}

}

}

public class Main{

public static void main(String []args){

Outer obO = new Outer();

obO.showO();

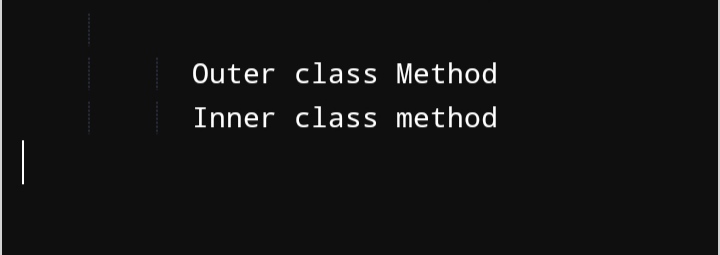
Outer.Inner obI = new Outer(). new Inner();

obI.showI();

}

}

**Output**

****

**Exception Handling**

**1 Arithmetic Exception**

public class HelloWorld{

public static void main(String []args){

int a=5;

int b=0;

int c=a/b;

try{

System.out.println(c);

}

catch(Arithmetic Exception e)

{

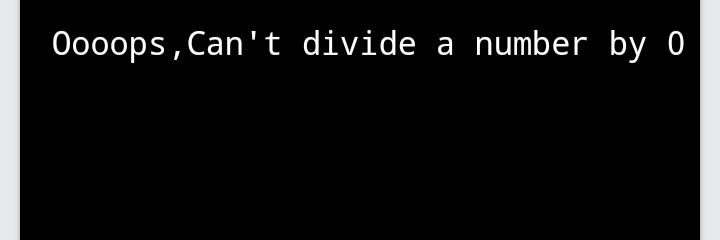
System.out.println("Oops, Divided By Zero is not Possible");

}

}

}

**Output**

****

**2 String Exception**

// String index out of bounds Exception

class StringIndexOutOfBound\_Demo

{

public static void main(String args[])

{

try {

String a = "Exception "; // length is 22

char c = a.charAt(10); // accessing 25th element

System.out.println(c);

}

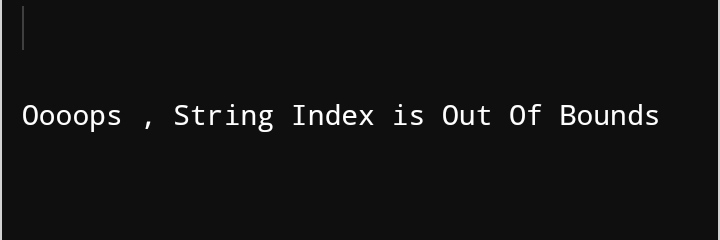
catch(StringIndexOutOfBoundsException e) {

System.out.println("Oooops , String Index is Out Of Bounds ");

}

}

}

**Output**

**3 Arithmetic Exception**

//Array index out of bounds Execption

public class Main

{

public static void main(String args[])

{

try{

int a[] = {2,4,6,8,10};

System.out.println(a[5]);

}

catch(ArrayIndexOutOfBoundsException e){

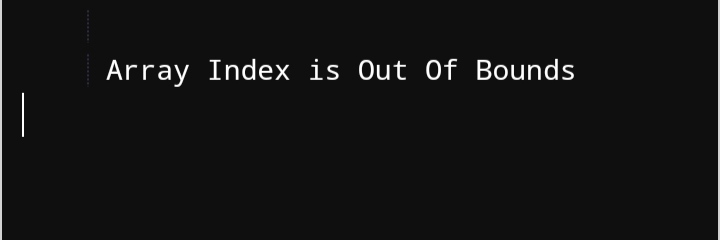
System.out.println ("Oooops , Array Index is Out Of Bounds");

}

}

}

**Output**

****

**Multithreding**

// Controlling the mainThread.

public class CurrentThreadDemo

{

public static void main(String args[])

{

Thread t = Thread.currentThread();

System.out.println("Current thread: " + t);

// change the name of the thread

t.setName("My Thread");

System.out.println("After name change: " + t);

try

{

for(int n = 5; n > 0; n--)

{

System.out.println(n);

Thread.sleep(1000);

}

}

catch (InterruptedException e)

{

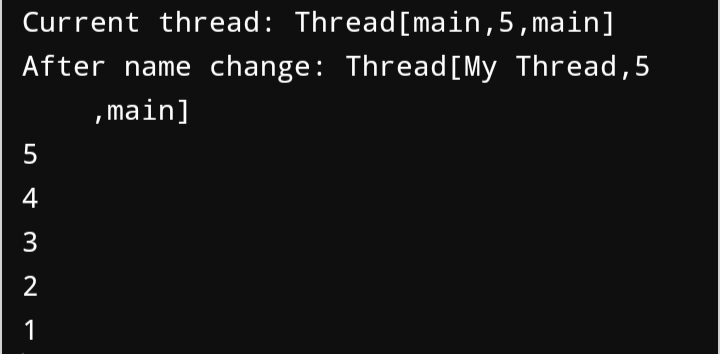
System.out.println("Main thread interrupted");

}

}

}

**Output**

****

**Package**

/\*Instructions :

1. To create a package, use the package keyword.

2. Create a Directory of Mypackage name

3. Save the file as First.java , inside Mypackage Directory

4. compile First.java \*/

//Package Creation

public class First

{

public void show(String s)

{

System.out.println("Hey , I am from Mypackage......");

}

}

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

/\*Instructions:

1. import package - Mypackage in program with class name

import Mypackage.First;

2. Creat object of class First in Main class

3. Compile and Run : Main.java\*/

//import Package

import Mypackage.First;

public class Main{

public static void main(String []args){

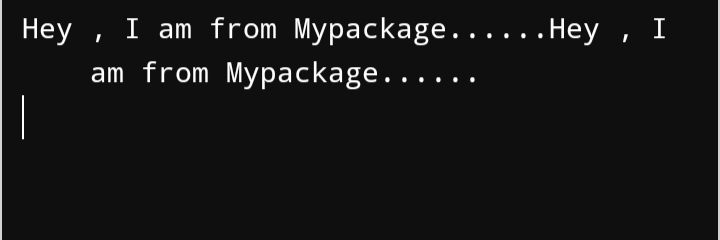
Mypackage ob = new Mypackage();

ob.show();

}

}

**Output**

****

**Applet**

**1 Geomatric Shape**

import java.applet.\*;

import java.awt.\*;

public class Geo extends Applet

{

public void paint(Graphics g)

{

g.setColor(Color.GREEN);

g.drawLine(20,20,100,20);

g.drawRect(20,50,90,90);

g.fillRoundRect(130,50,120,70,15,15);

g.setColor(Color.RED);

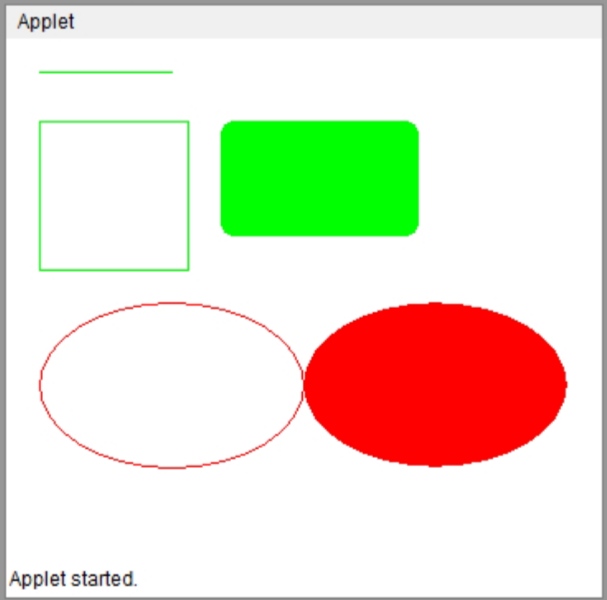
g.drawOval(20,160,160,100);

g.fillOval(180,160,160,100);

}

}

**Output**

****

**2 Human Face**

//Human Face in Applet

import java.applet.Applet;

import java.awt.\*;

public class Face extends Applet

{

public void paint(Graphics g)

{

g.drawOval(100,40,150,150);

g.setColor(Color.yellow);

g fillOval(100,40,150,150);

g.drawOval(120,80,40,20);

g.setColor(Color.white);

g fillOval(120,80,40,20);

g.drawOval(180,80,40,20);

g.setColor(Color.white);

g fillOval(180,80,40,20);

g.drawOval(190,89,20,10);

g.setColor(Color.yellow);

g fillOval(190,89,20,10);

g.drawOval(130,89,20,10);

g.setColor(Color.black);

g fillOval(130,89,20,10);

g.drawOval(170,110,1,40);

g.setColor(Color.black);

g fillOval(170,110,1,40);

g.drawOval(140,140,60,40,180);

g.setColor(Color.red);

g fillOval(140,140,60,40,180);

}

}

**Output**

****

**3 Indian Flag**

import java.awt.\*;

import java.applet.\*;

/\*<applet code=Flag.class width=300 height=200></applet>\*/

public class Flag extends Applet {

public void paint(Graphics g) {

g.setColor(Color.orange);

g.fillRect(20,10,270,30);

g.setColor(Color.white);

g.fillRect(20,40,270,30);

g.setColor(Color.green);

g.fillRect(20,70,270,30);

g.setColor(Color.blue);

g.drawOval(135,42,25,25);

g.drawLine(148,42,148,67);

g.drawLine(136,54,161,54);

g.drawLine(140,46,156,62);

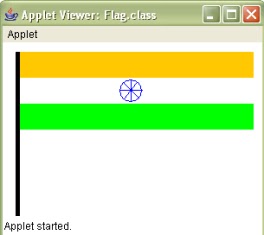
g.drawLine(154,46,140,64);

g.setColor(Color.black);

g.fillRect(15,10,5,200);

}

}

**Output**