JOURNAL 3

1.

```
import java.util.*; class
room

{
        Scanner s=new Scanner(System.in);
        int rno;

        String rtype,rarea,acmachine;
void setdata()

        {
                System.out.println("enter room no=");
rno=s.nextInt();

                System.out.println("enter room area=");
                rarea=s.next();
                System.out.println("enter room type=");
                rtype=s.next();
 System.out.println("enter there is AC machine or not=");
                acmachine=s.next();
        }
        void displaydata()
        {
                System.out.println("room no="+rno);
```

```
                System.out.println("room area="+rarea);

                System.out.println("room type="+rtype);

                System.out.println("AC machine="+acmachine);

        }
}

public class roomdemo

{

        public static void main(String args[])

        {

                room r=new room();

                r.setdata();

                r.displaydata();

        }

}
```

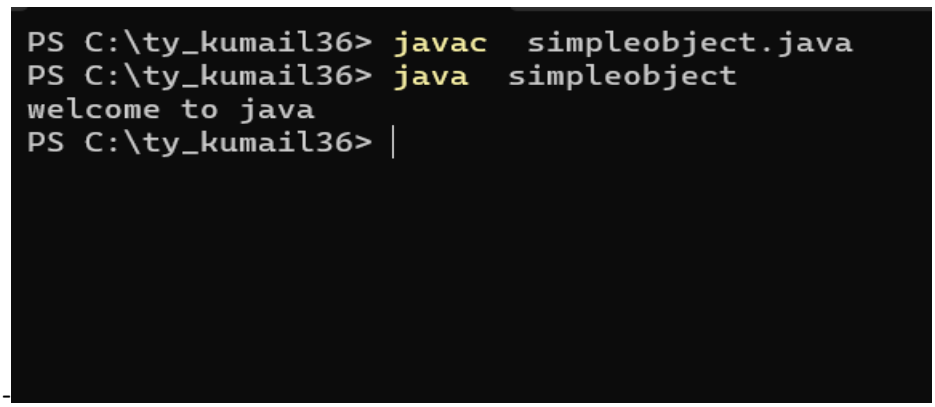
Output-

```
PS C:\ty_kumail36> javac roomdemo.java
PS C:\ty_kumail36> java roomdemo
enter room no=
101
enter room area=
5:6
enter room type=
single
enter there is AC machine or not=
yes
room no=101
room area=5:6
room type=single
AC machine=yes
PS C:\ty_kumail36>
```

2.

```
class simpleobject
{
        simpleobject()
        {
                System.out.println("welcome to java");

        }

        public static void main(String args[])
        {
                simpleobject s=new simpleobject();

        }
}
```

Output-



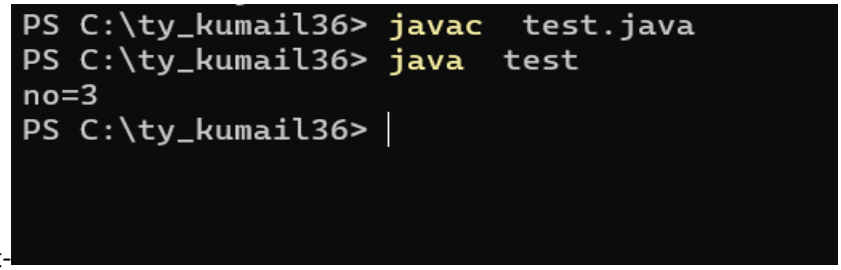
-

3.

```
class A
{
	int no;

	A getA()
	{

		return this;
	}
	void display(int no)
	{
		this.no=no;
		System.out.println("no="+no);
	}
}
class test
{
	public static void main(String args[])
	{
		new A().getA().display(3);
	}
}
```

4.

Output-




```
 import java.util.*; class rectangle
{
        int w,h;
        rectangle(int w,int h)
        {
                this.w=w;
this.h=h;

        }
}
class box extends rectangle
{
        int l;
        int abox=0,pbox=0,arect=0,prect=0;
box(int w,int h,int l)

        {
                super(w,h);
this.l=l;

        }
        void calculate()
```

```
	{
		arect=w*h;
prect=2*(w+h);

		abox=(2*l*w)+(2*l*h)+(2*w*h);
pbox=4*(l+h+w)*4*(l+h+w);

	}
	void display()
	{
		System.out.println("area of rectangle="+arect);
		 System.out.println("perimeter of rectangle="+prect);
		System.out.println("area of box="+abox);
		System.out.println("perimeter of box="+pbox);
	}
}
public class simple
{
	public static void main(String args[])
	{
		box b=new box(4,5,6);
		b.calculate();
		b.display();
	}
}
```

6.

Output-

```
PS C:\ty_kumail36> javac  simple.java
PS C:\ty_kumail36> java  simple
area of rectangle=20
perimeter of rectangle=18
area of box=148
perimeter of box=3600
PS C:\ty_kumail36>
```

5.

```
import java.util.*; class
bankdetail

{
        Scanner s=new Scanner (System.in);
        long acno;
        String acname,actype;
double balance;         bankdetail()

        {
        System.out.println("Please Enter followint details");
System.out.println("Enter account holder name=");      acname=s.nextLine();

        System.out.println("Enter account type=");
actype=s.nextLine();

        System.out.println("Enter account no=");
acno=s.nextLong();      balance=10000;

        }
        void showdetail()
        {
                System.out.println("Accout Number="+acno);
                System.out.println("Accout holder name="+acname);
                System.out.println("Accout type="+actype);
 System.out.println("Total balance in the account="+balance);
        }
        void deposit()
```

```
        {
                long amt;
                System.out.println("enter amoutn to deposit");
                amt=s.nextLong();
balance=balance+amt;

                System.out.println("Total balance after deposit="+balance);
        }
        void withdrawn()
        {
                long amt;
        System.out.println("enter amount to withdrawn=");
amt=s.nextLong();       if(balance>=amt)

        {
                balance=balance-amt;
                System.out.println("balance after withdrawal="+balance);
        }
        else
        {
 System.out.println("your total balance is less than your entered amount");
        }
        }
}
class demo
{
        public static void main(String args[])
```

```
        {
                bankdetail b=new bankdetail();
                b.showdetail();
                b.deposit();
                b.withdrawn();
        }
}
```

Output-

```
PS C:\ty_kumail36> javac demo.java
PS C:\ty_kumail36> java demo
Please Enter followint details
Enter account holder name=
kumail abass
Enter account type=
saving
Enter account no=
96731
Accout Number=96731
Accout holder name=kumail abass
Accout type=saving
Total balance in the account=10000.0
enter amoutn to deposit
5000
Total balance after deposit=15000.0
enter amount to withdrawn=
8000
balance after withdrawal=7000.0
PS C:\ty_kumail36>
```

6.

```
public class employee
{
	int ecode;
	String ename,address;
employee(int ecode,String ename)

	{
		this.ecode=ecode;
this.ename=ename;



	}
	employee(int ecode,String ename,String address)
	{
		this.ecode=ecode;
this.ename=ename;		this.address=address;

	}
	void display()
	{
		System.out.println("employee code="+ecode);
		System.out.println("employee name="+ename);
 System.out.println("employee address="+address);
	}
	public static void main(String args[])
	{
```

```
                employee e=new employee(3,"sai");
                e.display();                    employee e2=new

employee(56,"sarthak","wai");


                e2.display();

        }

}
```

```
PS C:\ty_kumail36> javac employee.java
PS C:\ty_kumail36> java employee
employee code=3
employee name=sai
employee address=null
employee code=56
employee name=sarthak
employee address=wai
PS C:\ty_kumail36>
```

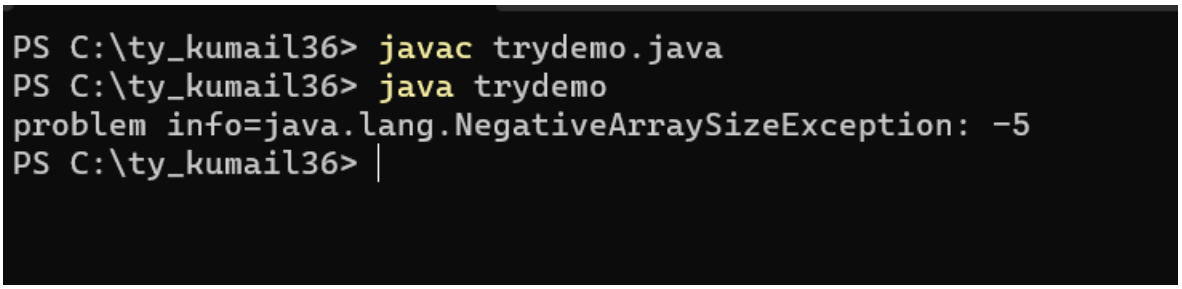
Output-

JOURNAL 4

1.

```
 public class trydemo
{
        public static void main(String args[])
        {
try
                {
                        int array[]=new int[-5];
                        System.out.println(array[0]);
                }
                catch(NegativeArraySizeException ne)
                {
                        System.out.println("problem info="+ne);
                }
        }
}
```

OUTPUT-

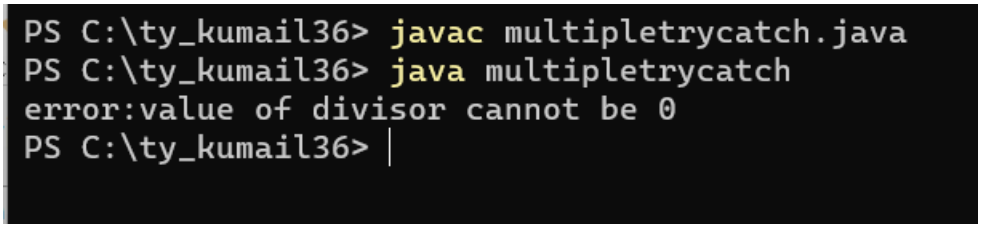


2.

```
class multipletrycatch
{
        public static void main(String args[])
        {
try
                {
                        int a[]=new int[5];
                        a[2]=10;
        a[4]=0;
                        a[3]=a[2]/a[4];
                }
                catch(ArithmeticException ae)
                {
  System.out.println("error:value of divisor cannot be 0");
                 }

                catch(ArrayIndexOutOfBoundsException ar)
                {
                        System.out.println("error:array index more than size");
                }
                catch(Exception e)
                {
                        System.out.println("unknown exception has occur");
```

```
            }


        }
}
```

Output-


PS C:\ty_kumail36> javac multipletrycatch.java
PS C:\ty_kumail36> java multipletrycatch
error:value of divisor cannot be 0
PS C:\ty_kumail36>

3. class

trycatchfinally

```
{
        public static void main(String args[])
        {
try
                {
                        int a[]=new int[5];
                        a[2]=10;
        a[4]=0;
                        a[3]=a[2]/a[4];
                }

                catch(Exception e)
                {
                        System.out.println("division by zero is not possible");
                }
                finally
                {
  System.out.println("the finally block always executes");
                }

        }
}
```

Output-

```
PS C:\ty_kumail36> javac trycatchfinally.java
PS C:\ty_kumail36> java trycatchfinally
division by zero is not possible
the finally block always executes
PS C:\ty_kumail36>
```

4.

```
public class throwsex

{

        public static void main(String args[])throws InterruptedException

        {

                System.out.println("hello java");

                Thread.sleep(1000);

        }

}
```

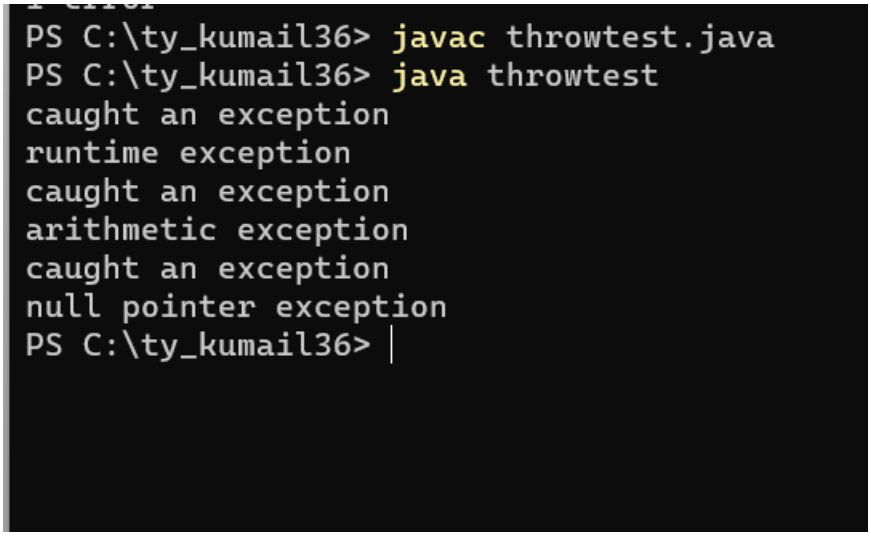
Output-

```
PS C:\ty_kumail36> javac throwsex.java
PS C:\ty_kumail36> java throwsex
hello java
PS C:\ty_kumail36>
```

5.

```
public class throwtest
{
        public static void main(String args[])
        {
                int num=7;
                for(num=1;num<=10;num++)
                {
        try
                        {
                                if(num==5)
                                        throw new ArithmeticException("arithmetic exception");
                                else if(num<2)
                                        throw new RuntimeException("runtime exception");
                                else if(num>9)
    throw new NullPointerException("null pointer exception");
                        }
                        catch(Exception e)
                        {
                                System.out.println("caught an exception");
                                System.out.println(e.getMessage());
                        }
                }
        }
}
```

Output-

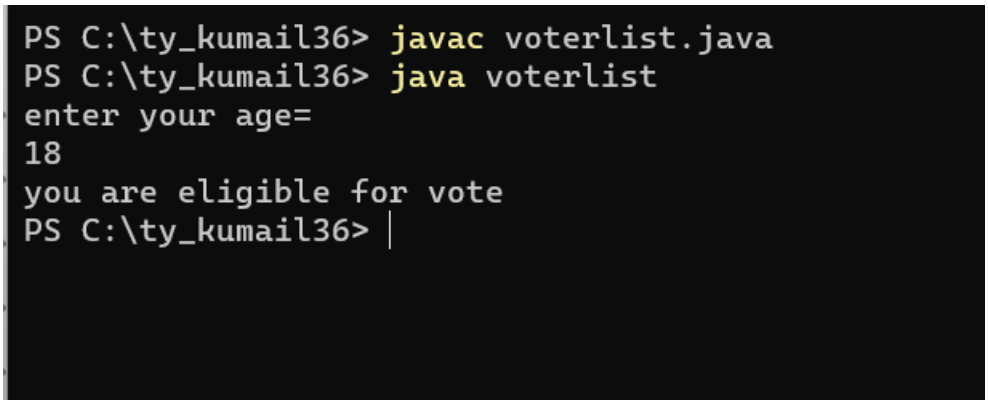

PS C:\ty_kumail36> javac throwtest.java
PS C:\ty_kumail36> java throwtest
caught an exception
runtime exception
caught an exception
arithmetic exception
caught an exception
null pointer exception
PS C:\ty_kumail36>

6.

```
import java.util.*; class NotEligibleException
extends Exception

{
        NotEligibleException(String msg)
        {
                super(msg);
        }
}
class voterlist
{
        int age;
        voterlist(int age)
        {
                this.age=age;
        }
        void checkeligibility()
        {
try
                {
                        if(age<18)
                        {
                                throw new NotEligibleException("error:not eligible for vote due to
under age");
                        }
```

```
                System.out.println("you are eligible for vote");

            }

            catch(NotEligibleException ne)
            {

                System.out.println(ne.getMessage());

            }

        }

        public static void main(String args[])

        {

            Scanner s=new Scanner(System.in);

        System.out.println("enter your age=");

        int age=s.nextInt();            voterlist v=new
voterlist(age);


            v.checkeligibility();

        }

}
```

Output-



JOURNAL 5

1.

```
 package mypack; public

class demopackage


{

        int r;

        public void getinfo(int r)

        {

                this.r=r;

        }

        public void area()

        {

                System.out.println("area of circle="+(3.14*r*r));

        }

        public void circum()

        {

 System.out.println("circumference of circle="+(2*3.14*r));


        }

}
```

Importing package- import

```
mypack.*;


public class circle
```

```
{
        public static void main(String args[])
        {
                demopackage d=new demopackage();
                d.getinfo(4);
                d.area();
                d.circum();
        }
}
```

Output-

```
PS C:\ty_kumail36> javac circle.java
PS C:\ty_kumail36> java circle
area of circle=50.24
circumference of circle=25.12
PS C:\ty_kumail36>
```

2.

```
package p1; public
class demop

{
        public void display()
        {
                System.out.println("welcome to package");
```

```
        }
}
```

Importing package-

```
import p1.*; public
class ex1

{
        public static void main(String args[])
        {
                demop d=new demop();
                d.display();
        }
}
```

Output-

```
PS C:\ty_kumail36> javac ex1.java
PS C:\ty_kumail36> java ex1
Welcome to package
PS C:\ty_kumail36>
```

3.

```
package extvariable; public
class edemo

{
        public int no1,no2;

}
```

Importring package- import

extvariable.*; public class

vdemo

{

public static void main(String args[])

{

edemo e=new edemo();

e.no1=10;

e.no2=20;

int sum=e.no1+e.no2;

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

}

}

Output-

4.

```
package userdefined; public
class packagedemo

{
        public int no1=54,no2=66;
}
Importing package- import
userdefined.*; public class
calculation

{
        public static void main(String args[])
        {
                packagedemo p=new packagedemo();

                int sum=p.no1+p.no2;
                System.out.println("addition="+sum);
int sub=p.no1-p.no2;

                System.out.println("substraction="+sub);
        }
}
```

Output-

```
PS C:\javamajid> javac packagedemo.java
PS C:\javamajid> java packagedemo
addition=120
substraction=-12
PS C:\javamajid>
```

5.

```
 package calculator; public
class cal

{
        int a,b;
        public void getinfo(int a,int b)
        {
                this.a=a;
this.b=b;

        }
         public void sum()
        {
                System.out.println("addition="+(a+b));
        }
         public void sub()
        {
                System.out.println("substraction="+(a-b));
        }
         public void mul()
        {
  System.out.println("multiplication="+(a*b));
        }
         public void div()
        {
```

```
                System.out.println("division="+(a/b));
        }
}
```

Importing package- import calculator.*; public class democalculator

```
{
        public static void main(String args[])
        {
                cal c=new cal();
                c.getinfo(7864,2434);
                c.sum();
                c.sub();
                c.mul();
                c.div();
        }
}
```

Output-

```
PS C:\ty_kumail36> javac  cal.java
PS C:\ty_kumail36> java  cal
addition=527
substraction=79
multiplication=67872
division=1
PS C:\ty_kumail36>
```

JOURNAL 6

1.

```
class mythread implements Runnable
{
        public void run()
        {
try
                {
                        System.out.println("values from 1 to 5 are=");
        for(int i=1;i<=5;i++)
                        {
                                System.out.println(i);
                                Thread.sleep(500);
                        }
                }
                catch(Exception e)
                {
                        System.out.println("problrm info="+e);
                }
        }
        public static void main(String args[])
        {
                mythread m=new mythread();
Thread t=new Thread(m);
```

```
            t.start();

        }

}
```

Output-

```
PS C:\ty_kumail36> javac  mythread.java
PS C:\ty_kumail36> java  mythread
1
2
3
4
5
PS C:\ty_kumail36>
```

2.

```
 class mythread extends Thread
{
        public mythread(String threadName)
        {
                super(threadName);
start();

        }
        public void run()
        {
                for(int i=1;i<=5;i++)
                {
                        System.out.println(getName()+"count"+i);
                        try
                        {
                                Thread.sleep(1000);
                        }
                        catch(InterruptedException e)
                        {
   System.out.println(getName()+"interrupted");
                        }
                }
        }
}
public class threaddemo
```

```
{
        public static void main(String args[])
        {
                new mythread("Thread 1");
                try
                {
                        for(int k=5;k>=0;k--)
                        {
                                System.out.println("running main thread"+k);
                                Thread.sleep(1000);
                        }
                }
                catch(InterruptedException e)
                {}
                System.out.println("exiting...");
        }
}
```

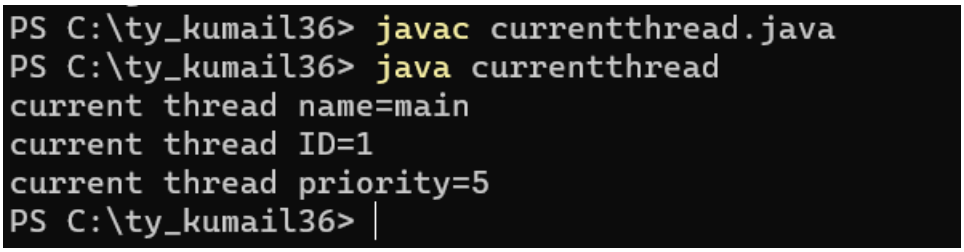
Output-

```
PS C:\ty_kumail36> javac threaddemoo.java
PS C:\ty_kumail36> java threaddemoo
running main thread5
Thread 1count1
running main thread4
Thread 1count2
running main thread3
Thread 1count3
running main thread2
Thread 1count4
running main thread1
Thread 1count5
running main thread0
exiting...
PS C:\ty_kumail36>
```

3.

```
 public class currentthread

{

        public static void main(String args[])

        {

                Thread currentThread=Thread.currentThread();

                System.out.println("current thread name="+currentThread.getName());

                System.out.println("current thread ID="+currentThread.getId());

 System.out.println("current thread priority="+currentThread.getPriority());

        }

}
```

Output-



4.

```
class prioritydemo extends Thread
{
        public prioritydemo(String threadName)
        {
                super(threadName);
        }
        public void run()
        {
 System.out.println("thread is running="+getName());
        }
}
class threadpriority
{
        public static void main(String args[])
        {
                prioritydemo p=new prioritydemo("Thread 1");
prioritydemo p1=new prioritydemo("Thread 2");

                p.setPriority(10);
p1.setPriority(1);

                p.start();
p1.start();

        }
}
```

Output0-

```
PS C:\ty_kumail36> javac threadpriority.java
PS C:\ty_kumail36> java threadpriority
thread is running=Thread 2
thread is running=Thread 1
PS C:\ty_kumail36>
```

5. class institute

```
{
        int i;
        public void classroom(String facname)
        {
                synchronized(this)
                {
                        for(i=1;i<=5;i++)
                        {
  System.out.println(i+"class taking by\t"+facname);
                        }
                        try
                        {
                                Thread.sleep(1000);
                        }
                        catch(Exception e)
                        {
                                System.out.println(e);
                        }
```

```
                }
        }
}
class myThread extends Thread
{
        institute ins; //ins is an reference variable
        String facname;
        public void run()
        {
                ins.classroom(facname);
        }
 myThread(institute ins,String facname)
        {
                this.ins=ins;
this.facname=facname;

        }
}
public class synchronizedblock extends Thread
{
        public static void main(String args[])
        {
                institute in=new institute();
myThread m1=new myThread(in,"babar");
myThread m2=new myThread(in,"gaikwad");
```

```
                m1.start();

m2.start();


        }

}
```

Output-

```
PS C:\ty_kumail36> javac synchronizedblock.java
PS C:\ty_kumail36> java synchronizedblock
1class taking by         babar
2class taking by         babar
3class taking by         babar
4class taking by         babar
5class taking by         babar
1class taking by         gaikwad
2class taking by         gaikwad
3class taking by         gaikwad
4class taking by         gaikwad
5class taking by         gaikwad
PS C:\ty_kumail36>
```

6.

```
class demo

{

        int i;

        synchronized public void display(String name)

        {

                for(i=1;i<=5;i++)

                {

  System.out.println(i+"Name\t"+name);

                }
```

```
                try
                {
                        Thread.sleep(1000);
                }
                catch(Exception e)
                {
                        System.out.println(e);
                }
        }
}
class myThread extends Thread
{
        demo d;
String name;    public
void run()

        {
                d.display(name);
        }
        myThread(demo d,String name)
        {
                this.d=d;
this.name=name;

        }
}
public class synchronizedmethod extends Thread
```

```
{
        public static void main(String args[])
        {
                demo de=new demo();
                myThread m1=new myThread(de,"vaishnavi");
myThread m2=new myThread(de,"vaibhav");

                m1.start();
m2.start();

        }
}
```

Output-

```
PS C:\ty_kumail36> javac synchronizedmethod.java
PS C:\ty_kumail36> java synchronizedmethod
1Name    majid
2Name    majid
3Name    majid
4Name    majid
5Name    majid
1Name    kumail
2Name    kumail
3Name    kumail
4Name    kumail
5Name    kumail
PS C:\ty_kumail36>
```

JOURNAL 7

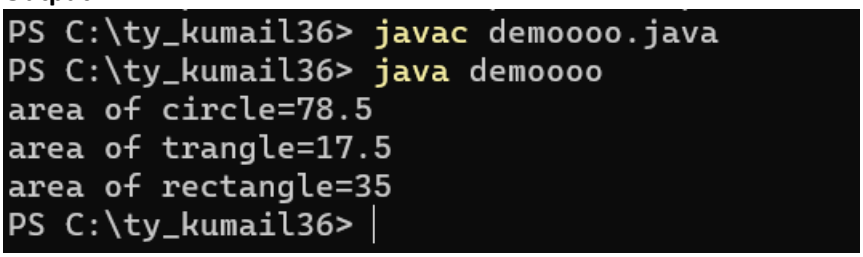
1.

```
abstract class shape
{
        int a=5;
int b=7;

        abstract void printarea();
}
class circle extends shape
{
        double area;
        public void printarea()
        {
                area=3.14*a*a;
                System.out.println("area of circle="+area);
        }
}
class tringle extends shape
```

```
{
        double area;
        public void printarea()
        {
                area=0.5*a*b;
 System.out.println("area of trangle="+area);
        }
}
class rectangle extends shape
{
        int area;
        public void printarea()
        {
                area=a*b;
 System.out.println("area of rectangle="+area);
        }
}
abstract class demo
{
        public static void main (String argh[])
        {
                shape s;
                s=new circle();
                s.printarea();
s=new tringle();
```

```
                s.printarea();

s=new rectangle();


                s.printarea();

        }

}
```

Output-



2.

```
interface printable
{
        void print();
}
interface showabale
{
        void show();
}
class A implements printable,showabale
{
        public void print()
        {
 System.out.println("print method");
        }
        public void show()
        {
 System.out.println("show method");
        }
        public static void main(String args[])
        {
                A obj=new A();
        obj.print();
obj.show();

        }
```

}

OUTPUT-

```
PS C:\ty_kumail36> java Ab.java
print method
show method
PS C:\ty_kumail36>
```

3.

```
class base

{

        void show()

        {

 System.out.println("inside parent class method");

        }

}

class derived extends base

{

        void show()

        {

                System.out.println("inside child class method");

        }

}

class runtimepoly

{

        public static void main(String args[])

        {

                derived d=new derived();

                d.show();
```

```
        base b=new base();

        b.show();

    }

}
```

```
PS C:\ty_kumail36> javac runtimepoly.java
PS C:\ty_kumail36> java runtimepoly
inside child class method
inside parent class method
PS C:\ty_kumail36>
```

Output-

4.

```
class demooverloading
{
        int no1,no2,no3;
void sum(int no1,int no2)
        {
                this.no1=no1;
this.no2=no2;
                System.out.println("sum="+(no1+no2));
        }
        void sum(int no1,int no2,int no3)
        {
                this.no1=no1;
this.no2=no2;           this.no3=no3;
 System.out.println("sum="+(no1+no2+no3));
        }
        public static void main(String args[])
        {
 demooverloading d=new demooverloading();
                d.sum(4,56);
                d.sum(4,8,35);
        }
```

```
}
```

```
PS C:\ty_kumail36>  javac demooverloading.java
PS C:\ty_kumail36> java  demooverloading
sum=60
sum=47
PS C:\ty_kumail36>
```

Output-

5.

```
class parent
{
        void display()
        {
 System.out.println("parent class method");
        }
}
class child extends parent
{
        void display()
        {
                System.out.println("child class method");
        }
}
class overridingdemo
{
        public static void main(String args[])
        {
                child c=new child();
                c.display();
parent p=new parent();

         p.display();
```

```
PS C:\ty_kumail36> javac overridingdemo.java
PS C:\ty_kumail36> java overridingdemo
child class method
parent class method
PS C:\ty_kumail36>
```

6. class animal

```
{
        void eat()
        {
                System.out.println("animal eats both plants and fish");
        }
}
class lion extends animal
{
        void eat()
        {
  System.out.println("lion eats fish because they are carnivors");
        }
}
public class dynamicbinding
{

        }
}
```

Output-

```
public static void main(String args[])
{
        animal a=new animal();
        a.eat();
        animal a1=new lion();
        a1.eat()
```

```
PS C:\ty_kumail36> javac dynamicbinding.java
PS C:\ty_kumail36> java dynamicbinding
animal eats both plants and fish
lion eats fish because they are carnivors
PS C:\ty_kumail36>
```

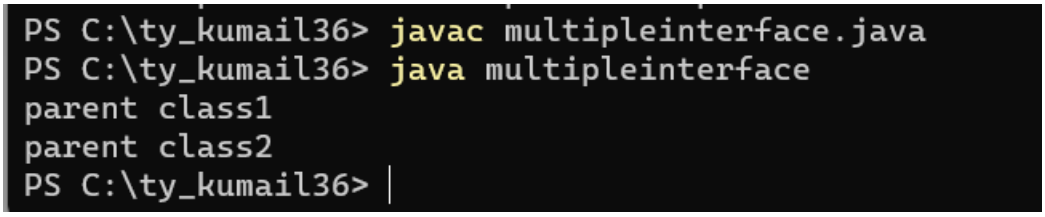
;

8. interface

```
A

{
        void print();
}
interface B
{
        void show();
}
class multipleeinterfac implements A,B
{
        public void print()
        {
                System.out.println("parent class1");
        }
        public void show()
        {
                System.out.println("parent class2");
        }
        public static void main(String args[])
        {
  multipleinterface m=new multipleinterface();
                m.print();

        }
}
```

Output-

m.show();



```
9. class
student

{
 int rno;  String name;

        student(int rno,String name)
        {
                this.rno=rno;
this.name=name;

        }
}
class Exam extends student
{
        int intmark,extmark;
        Exam(int rno,String name,int intmark,int extmark)
        {
                super(rno,name);
this.intmark=intmark;           this.extmark=extmark;

        }
        void display()
        {
                System.out.println("roll number="+rno);
                System.out.println("name="+name);
 System.out.println("internal marks="+intmark);
```

```
 System.out.println("external marks="+extmark);
        }
}
class result extends Exam
{
        int total;
 result(int rno,String name,int intmark,int extmark)
        {
                super(rno,name,intmark,extmark);
        }
        void show()
        {
                total=intmark+extmark;
                System.out.println("total="+total);
        }
}
class demoinheritance
{
        public static void main(String args[])
        {
                result r=new result(1,"sai",59,78);
                r.display();
                r.show();
        }
}
```

Output-

```
PS C:\ty_kumail36> javac demoinheritance.java
PS C:\ty_kumail36> java demoinheritance
roll number=1
name=sai
internal marks=59
external marks=78
total=137
PS C:\ty_kumail36>
```

10. class

p1

```
{
        void display()
        {
 System.out.println("method of p1 class");
        }
}
class p2 extends p1
{
        void show()
        {
 System.out.println("method of p2 class");
        }
}
class inheritanceEx
{
        public static void main(String args[])
        {
                p2 p=new p2();
                p.display();
                p.show();
        }
}
```

Output-

```
PS C:\ty_kumail36> javac  inheritanceEx.java
PS C:\ty_kumail36> java  inheritanceEx
method of p1 class
method of p2 class
PS C:\ty_kumail36>
```