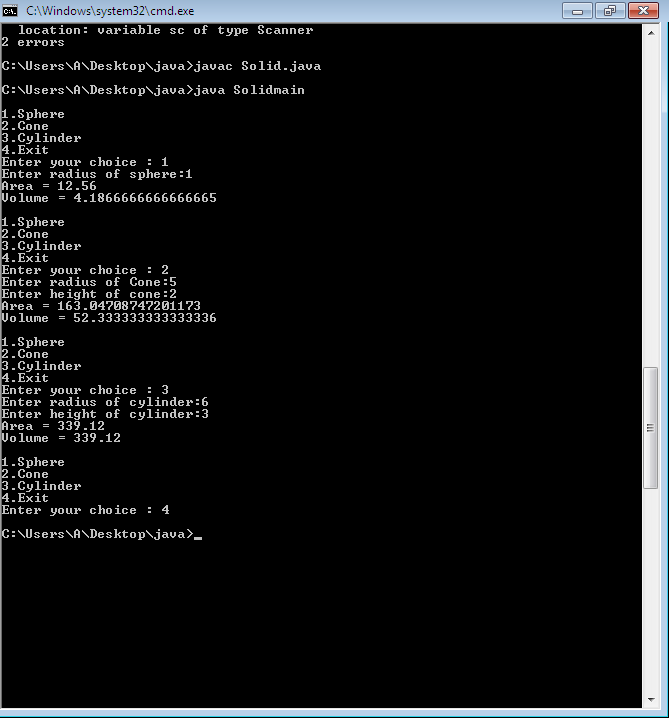
**Week 8—Extra Programs**



1. import java.util.Scanner;

abstract class Shape {

double r, h;

Shape(double r, double h)

{

this.r = r;

this.h = h;

}

abstract double calcArea();

abstract double calcVolume();

}

class Cylinder extends Shape

{

Cylinder(double r, double h)

{ super(r, h); }

double calcArea()

{

return ( 2\*3.14\*r\*(h+r));

}

double calcVolume()

{

return (3.14\*r\*r\*h);

}

}

class Cone extends Shape

{

Cone(double r, double h)

{ super(r, h); }

double calcArea()

{

return (3.14\*r\*(r+Math.sqrt(r\*r+h\*h)));

}

double calcVolume()

{

return ((3.14\*r\*r\*h)/3);

}

}

class Sphere extends Shape

{

Sphere(double r)

{ super(r, 0); }

double calcArea()

{

return (4\*3.14\*r\*r);

}

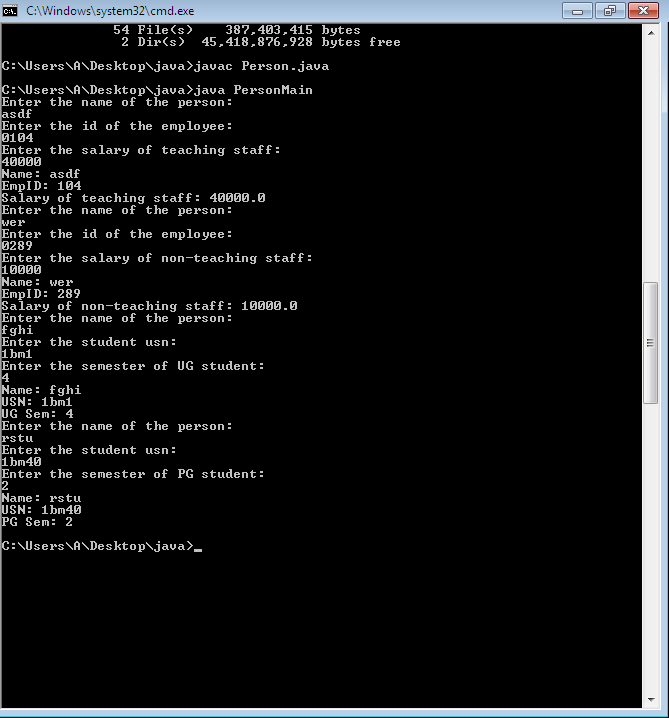
double calcVolume()

{

return ( (4\*3.14\*r\*r\*r))/3);

}

}



1. import java.util.Scanner;

class Person{

String name;

void acc\_person()

{

Scanner sc= new Scanner(System.in);

System.out.println("Enter the name of the person: ");

name=sc.next();

}

void disp\_person()

{

System.out.println("Name: "+name);

}

}

class Employee extends Person{

int empid;

void acc\_employee(){

Scanner sc= new Scanner(System.in);

System.out.println("Enter the id of the employee: ");

empid=sc.nextInt();

}

void disp\_employee(){

System.out.println("EmpID: "+empid);

}

}

class Student extends Person{

String usn;

void acc\_student(){

Scanner sc= new Scanner(System.in);

System.out.println("Enter the student usn: ");

usn = sc.next();

}

void disp\_student(){

System.out.println("USN: "+usn);

}

}

class Teaching extends Employee{

double sal\_teach;

void acc\_teaching(){

Scanner sc= new Scanner(System.in);

System.out.println("Enter the salary of teaching staff: ");

sal\_teach=sc.nextDouble();

}

void disp\_teaching(){

System.out.println("Salary of teaching staff: "+sal\_teach);

}

}

class NonTeaching extends Employee{

double sal\_nonteach;

void acc\_nonteaching(){

Scanner sc=new Scanner(System.in);

System.out.println("Enter the salary of non-teaching staff: ");

sal\_nonteach=sc.nextDouble();

}

void disp\_nonteaching(){

System.out.println("Salary of non-teaching staff: "+sal\_nonteach);

}

}

class UG extends Student{

int ugsem;

void acc\_ug(){

Scanner sc= new Scanner(System.in);

System.out.println("Enter the semester of UG student: ");

ugsem= sc.nextInt();

}

void disp\_ug(){

System.out.println("UG Sem: "+ugsem);

}

}

class PG extends Student{

int pgsem;

void acc\_pg(){

Scanner sc= new Scanner(System.in);

System.out.println("Enter the semester of PG student: ");

pgsem= sc.nextInt();

}

void disp\_pg(){

System.out.println("PG Sem: "+pgsem);

}

}

class PersonMain{

public static void main(String args[])

{

Teaching tc= new Teaching();

tc.acc\_person();

tc.acc\_employee();

tc.acc\_teaching();

tc.disp\_person();

tc.disp\_employee();

tc.disp\_teaching();

NonTeaching nt= new NonTeaching();

nt.acc\_person();

nt.acc\_employee();

nt.acc\_nonteaching();

nt.disp\_person();

nt.disp\_employee();

nt.disp\_nonteaching();

UG us= new UG();

us.acc\_person();

us.acc\_student();

us.acc\_ug();

us.disp\_person();

us.disp\_student();

us.disp\_ug();

PG ps=new PG();

ps.acc\_person();

ps.acc\_student();

ps.acc\_pg();

ps.disp\_person();

ps.disp\_student();

ps.disp\_pg();

}

}

