Create a package named Pack1, with a class ‘Words’. Create another package Pack2 inside Pack1 with a class ‘Length’ in it.

a. In the ‘Words’ class, define a method countNumWords() that will count the number of words in the given text.

b. In the ‘Length’ class, define a method strLength() to find the length of the string without using length() function.

c. Define the main class and import the packages and call the methods under the classes Words, Length respectively.

Write a Java program to demonstrate multiple inheritance with two interfaces and a class with main class to find sum of n numbers and factorial of a given number.

Create an interface called Newspaper. In the interface, create a method called news ().

Implement interface Newspaper by class Magazine.

Implement interface Newspaper by class Brochure.

The method news () in each class display the following information.

In Magazine class : String title, integer ISBN, String editor

In Brochure class: String title, integer year, integer page\_number.

Create an abstract class called Student which includes the following for each student:

Name

Status (full time, part time)

Telephone

Then implement an abstract method which determines the amount paid by the student which varies between full time and part time students. (Tuition fees- full-time students paying a flat fee of $2,000 and part-time students paying $200 per credit hour. ). Create two child classes and call them FullTimeStudent and PartTimeStudent. Write a Java program by creating objects of the two child classes and display the data fields for each object.

package pack1;

public class Words

{

public void countNumWords(String s)

{

int Count = 0;

for(int i = 0; i < s.length()-1; i++)

{

if(s.charAt(i) == ' ' && Character.isLetter(s.charAt(i+1)) && (i > 0)) {

Count++;

}

}

Count++;

System.out.println("no of words in the given string: " + Count);

}

}

package pack1.pack2;

public class Length

{

public void strLength(String s)

{

int i = 0;

for(char c: s.toCharArray()) {

i++;

}

System.out.println("Length of given string is : "+i);

}

}

import pack1.Words;

import pack1.pack2.Length;

import java.util.\*;

class prog

{

public static void main(String args[])

{

String s;

Scanner sc =new Scanner(System.in);

System.out.println("enter a string :");

s=sc.nextLine();

Words obj = new Words();

obj.countNumWords(s);

Length abc = new Length();

abc.strLength(s);

}

import java.util.\*;

interface Summing

{

void sum(int n);

}

interface Fact

{

void comp(int n);

}

class Multinterface implements Summing,Fact

{

public void sum(int n)

{

int s = 0;

for (int i = 0; i<n; i++)

{

s = s+i;

}

System.out.println("Sum of "+ n +"natural no: "+s);

}

public void comp(int n)

{

int i,f=1;

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

{

f=f\*i;

}

System.out.println("Factorial of "+n+" is: "+f);

}

public static void main(String args[])

{

Scanner sc=new Scanner(System.in);

int n;

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

n=sc.nextInt();

Multinterface obj = new Multinterface();

obj.sum(n);

obj.comp(n);

}

}

import java.util.\*;

interface Newspaper

{

public void news();

}

class Magazine implements Newspaper

{

String title;

int ISBN;

String editor;

public void news()

{

System.out.println("title of Magazine : "+ this.title +"\nISBN of Magazine : "+ this.ISBN +"\nEDITOR of Magazine : "+ this.editor);

}

public void get()

{

Scanner sc=new Scanner(System.in);

System.out.print("\nenter title of Magazine : ");

this.title=sc.nextLine();

System.out.print("\n enter ISBN of Magazine : ");

this.ISBN=sc.nextInt();

sc.nextLine();

System.out.print("\nenter EDITOR of Magazine : ");

this.editor=sc.nextLine();

}

}

class Brochure implements Newspaper

{

String title;

int year;

int page\_number;

public void news()

{

System.out.println("title of Brochure : " + this.title +"\nYEAR of Brochure : "+ this.year +"\nPagenumber of Brochure : "+ this.page\_number);

}

void getc()

{

Scanner sc=new Scanner(System.in);

System.out.print("\nenter title of Brochure : ");

this.title=sc.nextLine();

System.out.print("\n enter year of Brochure : ");

this.year=sc.nextInt();

System.out.print("\nenter page number of Brochure : ");

this.page\_number=sc.nextInt();

}

}

class Newspapers

{

public static void main(String args[])

{

Scanner sc=new Scanner(System.in);

Magazine obj = new Magazine();

Brochure abc = new Brochure();

obj.get();

abc.getc();

obj.news();

abc.news();

}

}

import java.util.\*;

public abstract class Student {

String name;

bool status;

int telephone;

int fees;

abstract void amount();

}

class FullTimeStudent extends Student{

void amount(){system.out.println("Name : "+ this.name +"\nStatus : "+ this.status +"\nTelephone: "+ this.telephone + "\nTution-fees: "+this.fees );

}

class PartTimeStudent extends student{

void amount(){system.out.println("Name : "+ this.name +"\nStatus : "+ this.status +"\nTelephone: "+ this.telephone "\nTution-fees: "+this.fees);}

}

public void get()

{

Scanner sc=new Scanner(System.in);

System.out.print("\nName : ");

this.name=sc.nextLine();

System.out.print("\nStatus : ");

this.status=sc.nextInt();

sc.nextLine();

System.out.print("\nTelephone: ");

this.telephone=sc.nextLine();

}

class abstraction{

public static void main(String args[]){

Scanner sc=new Scanner(System.in);

if(status=0)

fees=2000;

else

fees=200;

Student s=new PartTimeStudent();

s.get();

s.amount();

}

}