Week 7 extra

1.Develop a Java program to create a class Student whose variables are usn, name and sem.

Derive a class Test from Student to include an array of cie marks of each course and their

corresponding credits in another array. Derive a class Exam from Test which includes an

array of see marks. Derive a class Result which calculates the grade for each course and the

SGPA. Create n student objects and displays all the above details.

import java.util.Scanner;

class Student

{

String usn,name;

int sem;

void accept(String u,String n,int s)

{

usn=u;

name=n;

sem=s;

}

}

class Test extends Student

{

int cie[],credits[];

void accept\_cie(int n)

{

Scanner ss=new Scanner(System.in);

cie=new int[n];

credits=new int[n];

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

{

System.out.println("Enter cie marks with credits of course"+(i+1));

cie[i]=ss.nextInt();

credits[i]=ss.nextInt();

}

}

}

class Exam extends Test

{

int see[];

void accept\_see(int n)

{

Scanner ss=new Scanner(System.in);

see=new int[n];

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

{

System.out.println("enter see marks of course"+(i+1));

see[i]=ss.nextInt();

}

}

}

class Result extends Exam

{

float sgpa;

void sgpa\_cal(int n)

{

int sum=0,c=0;

int gp=0;

int tot;

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

{

tot=cie[i]+see[i]/2;

if(tot>=90)

gp=10;

else if(tot>=80)

gp=9;

else if(tot>=70)

gp=8;

else if(tot>=60)

gp=7;

else if(tot>=50)

gp=6;

else if(tot>=40)

gp=4;

else

gp=0;

sum=sum+gp\*credits[i];

c=c+credits[i];

}

sgpa=(float)sum/c;

}

void display()

{

System.out.println("\*Student Details\*");

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

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

System.out.println("Student Sem: "+sem);

System.out.println("Student sgpa: "+sgpa);

}

}

class Main

{

public static void main(String args[])

{

Scanner xx=new Scanner(System.in);

System.out.println("Enter no of students");

int n=xx.nextInt();

Result []r=new Result[n];

String u,nam;

int s;

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

{

System.out.println("Enter details of student "+(i+1));

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

u=xx.next();

System.out.println("Enter name: ");

nam=xx.next();

System.out.println("Enter sem ");

s=xx.nextInt();

System.out.println("Enter no of courses");

int courses=xx.nextInt();

r[i]=new Result();

r[i].accept(u,nam,s);

r[i].accept\_cie(courses);

r[i].accept\_see(courses);

r[i].sgpa\_cal(courses);

}

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

{

r[i].display();

}

}

}

2. Develop a Java program to create a class PLAYER with member variables name,

matches\_played and average. This class has an abstract method cal\_average(String,int,int).

Derive two classes BATSMAN and BOWLER from PLAYER. Class BATSMAN has a

member variable runs\_scored. Class BOWLER has a member variable runs\_given. Create m

BATSMAN objects and n BOWLER objects. Calculate and display the average runs scored

by each BATSMAN and average runs given by each BOWLER.

import java.util.Scanner;

abstract class Player

{

String name;

int matches\_played;

double average;

abstract void cal\_average(String x,int y,int z);

}

class Batsman extends Player

{

int runs\_scored;

void cal\_average(String a,int b,int c)

{

name=a;

matches\_played=b;

runs\_scored=c;

average=runs\_scored/matches\_played;

System.out.println("The averge runs scored by player "+name+" is :"+average);

}

}

class Bowler extends Player

{

int runs\_given;

void cal\_average(String p,int q,int r)

{

name=p;

matches\_played=q;

average=runs\_given/matches\_played;

System.out.println("The average runs given by player "+name+" is:"+average);

}

}

class PlayerMain

{

public static void main(String args[])

{

int m,n,i;

Scanner xx=new Scanner(System.in);

System.out.println("Enter the no. of Batsman");

m=xx.nextInt();

Batsman bt[]=new Batsman[m];

for(i=0;i<m;i++)

{

bt[i]=new Batsman();

System.out.println("Enter Details of Batsman"+(i+1)+ ":");

System.out.println("Enter player name:");

bt[i].name=xx.next();

System.out.println("Enter no. of matches played:");

bt[i].matches\_played=xx.nextInt();

System.out.println("Enter runs scored by Batsman:");

bt[i].runs\_scored=xx.nextInt();

}

for(i=0;i<m;i++)

{

bt[i].cal\_average(bt[i].name ,bt[i].matches\_played,bt[i].runs\_scored);

}

System.out.println("Enter the no. of Bowler");

n=xx.nextInt();

Bowler bl[]=new Bowler[n];

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

{

bl[i]=new Bowler();

System.out.println("Enter Details of Bowler"+(i+1)+ ":");

System.out.println("Enter player name:");

bl[i].name=xx.next();

System.out.println("Enter no. of matches played:");

bl[i].matches\_played=xx.nextInt();

System.out.println("Enter runs given by Bowler:");

bl[i].runs\_given=xx.nextInt();

}

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

{

bl[i].cal\_average(bl[i].name ,bl[i].matches\_played,bl[i].runs\_given);

}

}

}