**Rocksana Talukder**

**Homework-3**

**package** homework;

**import** java.util.ArrayList;

**public** **class** Students {

**enum** gender{

***Male***,

***Female***

}

**int** id;

String name;

gender stGender;

**double** grade;

String major;

**public** Students(**int** id, String name, gender stGender, **double** grade, String major ) {

**this**.id = id;

**this**.name = name;

**this**.stGender = stGender;

**this**.grade = grade;

**this**.major = major;

}

**public** Students() {

}

**public** ArrayList studentData() {

ArrayList<Students> students = **new** ArrayList<Students>();

students.add(**new** Students(1, "Jessie", gender.***Female***, 3.5, "Science"));

students.add(**new** Students(2, "John", gender.***Male***, 3.6, "Math"));

students.add(**new** Students(3, "Amy", gender.***Female***, 3.1, "Business Administration"));

students.add(**new** Students(4, "Alex", gender.***Male***, 3.0, "Computer Science"));

**return** students;

}

}

//--------------------------------------------------------

**package** homework;

**import** java.util.ArrayList;

**public** **class** StudentProcess **extends** Students {

**boolean** flag = **false**;

**public** ArrayList getAllStudents() {

ArrayList<Students> students= studentData();

**return** students;

}

**public** Students getStudentById(ArrayList students, **int** id) {

Students student = **null**;

**for** (**int** i = 0; i<= students.size(); i++) {

student = (Students)students.get(i);

**if**(student.id == id) {

flag = **true**;

**break**;

}

**else** {

flag = **false**;

student = **null**;

}

}

**return** student;

}

}

//--------------------------------------------------

**package** homework;

**public** **interface** StudentsPerformance {

**public** **double** grade();

**public** String major();

}

//-------------------------------------------------------

**package** homework;

**public** **class** DisplayInformation **implements** StudentsPerformance {

Students student;

**public** DisplayInformation(Students student) {

**this**.student = student;

}

**public** **void** displayStudentInformation() {

System.***out***.println("Student Information for id# " + student.id);

System.***out***.println("--------------------------------");

System.***out***.println("Name\tGender\tGrade\tMajor");

System.***out***.println(student.name + "\t" + student.stGender + "\t" + grade() + "\t" + major() );

}

**public** **double** grade() {

**return** student.grade;

}

**public** String major() {

**return** student.major;

}

}

//---------------------------------------------------------

package homework;

import java.util.ArrayList;

import java.util.Scanner;

public class StudentInformation {

public static void main(String[] args) {

int input;

StudentProcess process = new StudentProcess();

ArrayList<Students> students = process.getAllStudents();

Scanner Sc = new Scanner(System.in);

System.out.println("Please Enter Student ID");

while ((input = Sc.nextInt()) > students.size()) {

System.out.println("There is no Student with ID: " + input);

System.out.println("Please enter ID between 1 to " + students.size());

}

Students studentinformation = process.getStudentById(students, input);

DisplayInformation display = new DisplayInformation(studentinformation);

display.displayStudentInformation();

display.grade();

display.major();

}

}

**Result:**

