package major;

/\*\*

\* @author Christian Dominic Angus

\* The Main class is the tester class of the Major project

\*/

public class Main {

/\*\*

\* The Main class for the Major file

\*/

public static void main(String[] args) {

ComputerScience student1 = // Creates the student1 object in

new ComputerScience("Anthony", "ComSci",3.4) ; // in the Computer Science class

Biology student2 = // Creates the student2 object

new Biology("Brandon", "Biology", 4.0, // in the Biology class with 2 new

"Arts & Science", true) ; // attributes (department and double major)

Education student3 = // Creates the student3 object

new Education("Christian", "Education", 3.7, // in the Education class with 2 new

"English", false) ; // attributes (department and double major)

System.out.println(student1.toString()) ; // Prints out all the information from student1

System.out.println() ;

System.out.println(student2.toString()) ; // Prints out all the information from student2

System.out.println() ;

System.out.println(student3.toString()) ; // Prints out all the information from student3

}

}

package major;

import java.util.ArrayList;

/\*\*

\* @author Christian Dominic Angus

\* The Major class is the super class of the Major project

\*/

public class Major {

private String name ; // The string for the student's name

private String major ; // The string for the student's major

private ArrayList<String> majorList = new ArrayList<String>() ; // An array to store all major taken by students

private double gpa ; // The double value of the student's GPA

public Major(String name, String major, double gpa) {

this.name = name ;

this.gpa = gpa ;

this.major = major ;

majorList.add(major) ;

}

/\*\*

\* Shows the name of the current student

\* @return name of the student

\*/

public String getName() {

return name ;

}

/\*\*

\* Sets the new name of the current student

\* @param newName the new name of the student

\*/

public void setName(String newName) {

this.name = newName ;

}

/\*\*

\* Shows the GPA of the current student

\* @return

\*/

public double getGPA() {

return gpa ;

}

/\*\*

\* Sets the new GPA of the current student

\* @param newGPA the new GPA of the student

\*/

public void setGPA(double newGPA) {

this.gpa = newGPA ;

}

/\*\*

\* Shows the major of the current student

\* @return the major of the student

\*/

public String getMajor() {

return major ;

}

/\*\*

\* Sets the new major of the current student and adds them to the ArrayList

\* @param newMajor the new major of the student

\*/

public void setMajor(String newMajor) {

majorList.add(newMajor) ;

this.major = newMajor ;

}

@Override

public String toString(){

String str = "Name: " + name + "\nGPA: " + gpa ;

return str ;

}

}

package major;

/\*\*

\* @author Christian Dominic Angus

\* The ComputerScience class is a subclass of the Major class

\*/

public class ComputerScience extends Major {

private String name ; // Creates a separate String value within this class for student's name

private String major ; // Creates a separate String value within this class for student's major

private double gpa ; // Creates a separate double value within this class for student's GPA

public ComputerScience(String name, String major, double gpa) {

super(name, major, gpa) ;

this.name = name ;

this.major = major ;

this.gpa = gpa ;

}

@Override

public String toString(){

String str = "Name: " + name + "\nMajor: " + major + "\nGPA: " + gpa ;

return str ;

}

}

package major;

/\*\*

\* @author Christian Dominic Angus

\* The Biology class is a subclass of the Major class that contains 2

\* additional attributes (Department and Double Major)

\*/

public class Biology extends Major {

private String name ; // Creates a separate String value within this class for student's name

private String major ; // Creates a separate String value within this class for student's major

private double gpa ; // Creates a separate double value within this class for student's GPA

private String department ; // The String value for the department of the student's major

private boolean doubleMajor ; // A boolean value of whether the student is a double major or not

public Biology(String name, String major, double gpa, String department,

boolean isDoubleMajor) {

super(name, major, gpa) ;

this.name = name ;

this.major = major ;

this.gpa = gpa ;

this.department = department ;

this.doubleMajor = isDoubleMajor ;

}

/\*\*

\* Shows the department of the current student's major

\* @return department of the student's major

\*/

public String getDepartment() {

return department ;

}

/\*\*

\* Sets the new department of the current student's major

\* @param newDepartment the new department of the student's major

\*/

public void setDepartment(String newDepartment) {

this.department = newDepartment ;

}

/\*\*

\* Shows whether the current student is a double major

\* @return boolean value of the student's double major status

\*/

public boolean getDoubleMajor() {

return doubleMajor ;

}

/\*\*

\* Sets the boolean value whether the current student is a double major

\* @param newDoubleMajor the boolean value of the student's double major status

\*/

public void setDoubleMajor(boolean newDoubleMajor) {

this.doubleMajor = newDoubleMajor ;

}

@Override

public String toString(){

String yesNo ;

if(doubleMajor){

yesNo = "Yes" ;

}

else{

yesNo = "No" ;

}

String str = "Name: " + name + "\nMajor: " + major +

"\nDepartment: " + department + "\nGPA: " + gpa +

"\nDouble Major: " + yesNo ;

return str ;

}

}

package major;

/\*\*

\* @author Christian Dominic Angus

\* The Education class is a subclass of the Major class that contains 2

\* additional attributes (Department and Double Major)

\*/

public class Education extends Major {

private String name ; // Creates a separate String value within this class for student's name

private String major ; // Creates a separate String value within this class for student's major

private double gpa ; // Creates a separate double value within this class for student's GPA

private String department ; // The String value for the department of the student's major

private boolean doubleMajor ; // A boolean value of whether the student is a double major or not

public Education(String name, String major, double gpa, String department,

boolean isDoubleMajor) {

super(name, major, gpa) ;

this.name = name ;

this.major = major ;

this.gpa = gpa ;

this.department = department ;

this.doubleMajor = isDoubleMajor ;

}

/\*\*

\* Shows the department of the current student's major

\* @return department of the student's major

\*/

public String getDepartment() {

return department ;

}

/\*\*

\* Sets the new department of the current student's major

\* @param newDepartment the new department of the student's major

\*/

public void setDepartment(String newDepartment) {

this.department = newDepartment ;

}

/\*\*

\* Shows whether the current student is a double major

\* @return boolean value of the student's double major status

\*/

public boolean getDoubleMajor() {

return doubleMajor ;

}

/\*\*

\* Sets the boolean value whether the current student is a double major

\* @param newDoubleMajor the boolean value of the student's double major status

\*/

public void setDoubleMajor(boolean newDoubleMajor) {

this.doubleMajor = newDoubleMajor ;

}

@Override

public String toString(){

String yesNo ;

if(doubleMajor){

yesNo = "Yes" ;

}

else{

yesNo = "No" ;

}

String str = "Name: " + name + "\nMajor: " + major +

"\nDepartment: " + department + "\nGPA: " + gpa +

"\nDouble Major: " + yesNo ;

return str ;

}

}