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*SOURCE CODE: DRIVER PROGRAM*

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*/\*  
Author: Hayson Chu  
E-mail: hzc5389@psu.edu  
Course: CMPSC 221  
Assignment: Programming Assignment 4  
Due date: 3/31/2020  
File: MovieAndAwardWinnerMovie.java  
Purpose: Java application that implements a driver to demonstrate the  
 functionality of a base class (Movie) and its derived class  
 (AwardWinningMovie)  
Compiler/IDE: Java 13/IntelliJIdea  
Operating system: MacOS  
Reference(s): Java 10 API - Oracle Documentation  
 (http://docs.oracle.com/javase/10/docs/api/);  
(Include ALL additional references (Web page, etc.) here.)  
\*/  
  
/\*\*Imports\*\*/***import** java.util.ArrayList;  
**import** java.util.Iterator;  
**import** java.util.Scanner;  
  
*/\*\*Driver Program\*\*/***public class** MovieAndAwardWinnerMovie {  
  
*/\*\*  
 \* Movies in Database  
 1. Joker;8.5;Crime;Todd Phillips;Joaquin Phoenix;Golden Globe;2020;  
 2. Parasite;8.6;Thriller;Bong Joon Ho;Kang-ho Song;AcademyAward;2020;  
 3. Social Network;7.7;The Social Network;Biography;David Fincher;Jesse Eisenberg;Academy Award;2012;  
 4. The Grand Budapest Hotel;8.1;Adventure;Wes Anderson;Ralph Fiennes;BAFTA;2015;  
 5. Weathering With You;7.6;Drama;Makoto Shinkai;Kotaro Daigo;Japan Academy Prize;2020;  
 6. Spirited Away;8.6;Adventure;Hayao Miyazaki;Rumi Hiiragi;Academy Award;2003;  
 7. The Dark Knight;9.0;Action;Christopher NOlan;Christian Bale;Academy Award;2009;  
 8. Forrest Gump;8.8;Drama;Robert Zemeckis;Tom Hanks;Academy Award;1995;  
 9. Pulp Fiction;8.9;Crime;Quentin Tarantino;Samuel L. Jackson;Golden Globe;1995;  
 10. Django Unchained;8.4;Western;Quentin Tarantino;Jamie Foxx;Academy Award;2013;  
 \*\*/  
  
 /\*\*Main Method\*\*/* **public static void** main(String[] args){  
 ArrayList <AwardWinningMovies> database = **new** <AwardWinningMovies> ArrayList();  
 database = *createDatabase*(database);  
  
 *programWelcome*();  
 *programInterface*(database);  
 }  
  
 */\*\*Method To Create Database\*\*/* **public static** ArrayList<AwardWinningMovies> createDatabase(ArrayList<AwardWinningMovies> database){  
 *//database of movies* String[] movies = {  
 **"Joker;8.5;Crime;Todd Phillips;Joaquin Phoenix;Golden Globe;2020;"**,  
 **"Parasite;8.6;Thriller;Bong Joon Ho;Kang-ho Song;AcademyAward;2020;"**,  
 **"The Social Network;7.7;Biography;David Fincher;Jesse Eisenberg;Academy Award;2012;"**,  
 **"The Grand Budapest Hotel;8.1;Adventure;Wes Anderson;Ralph Fiennes;BAFTA;2015;"**,  
 **"Weathering With You;7.6;Drama;Makoto Shinkai;Kotaro Daigo;Japan Academy Prize;2020;"**,  
 **"Spirited Away;8.6;Adventure;Hayao Miyazaki;Rumi Hiiragi;Academy Award;2003;"**,  
 **"The Dark Knight;9.0;Action;Christopher NOlan;Christian Bale;Academy Award;2009;"**,  
 **"Forrest Gump;8.8;Drama;Robert Zemeckis;Tom Hanks;Academy Award;1995;"**,  
 **"Pulp Fiction;8.9;Crime;Quentin Tarantino;Samuel L. Jackson;Golden Globe;1995;"**,  
 **"Django Unchained;8.4;Western; Quentin Tarantino;Jamie Foxx;Academy Award;2013;"** };  
  
 *//converts String elements to AwardWinningMovies inside ArrayList.* ArrayList<AwardWinningMovies> store = **new** <AwardWinningMovies> ArrayList();  
 **for**(**int** i = 0; i<movies.**length**; i++){  
 String name, rating, genre, director, actor, award;  
 **int** awardYear;  
 String save = movies[i];  
 String[] split = save.split(**";"**,9);  
 name = split[0];  
 rating = split[1];  
 genre = split[2];  
 director = split[3];  
 actor = split[4];  
 award = split[5];  
 awardYear = Integer.*parseInt*(split[6]);  
 store.add(**new** AwardWinningMovies(name, rating, genre, director, actor, award, awardYear));  
 }  
 **return** store;  
 }  
  
 */\*\*Method to Welcome User\*\*/* **public static void** programWelcome(){  
 System.***out***.println(**"RUNNING \'EXPERIMENTAL MOVIE DATABASE\'"**);  
 System.***out***.println(**"--------------------------------------------------------------"**);  
 }  
  
 */\*\*Method to Generate Interface\*\*/* **public static void** programInterface(ArrayList<AwardWinningMovies> database){  
 **boolean** exit = **false**;  
  
 *//presents options to user and asks for their choice.* **while**(!exit){  
 System.***out***.println(**"\n--------------------------------------------------------------"**);  
 System.***out***.println(**"\nSelect an option from the menu below"**);  
 System.***out***.println(**"1) Display a list of popular movies\n2) Search the database\n3) Exit"**);  
 System.***out***.println(**"Your answer: "**);  
  
 *//validates user input and executes method according to choice.* Scanner scan = **new** Scanner(System.***in***);  
 **try**{  
 **int** scanned = scan.nextInt();  
 **if** (scanned >= 1 && scanned <= 3) {  
 **switch** (scanned) {  
 **case** 1:  
 *displayMovies*(database);  
 **break**;  
 **case** 2:  
 *searchMovies*(database);  
 **break**;  
 **case** 3:  
 exit = *exitProgram*();  
 **break**;  
 **default**:  
 exit = **false**;  
 **break**;  
 }  
 } **else** {  
 exit = **false**;  
 System.***out***.println(**"Please input a valid integer (ie. 1, 2, 3)"**);  
 System.***out***.println(**"--------------------------------------------------------------"**);  
 }  
 }  
 **catch**(Exception e){  
 exit = **false**;  
 System.***out***.println(**"Please input an integer (ie. 1, 2, 3)"**);  
 System.***out***.println(**"--------------------------------------------------------------"**);  
 }  
 }  
 }  
  
 */\*\*Method to Display Movies\*\*/* **public static void** displayMovies(ArrayList<AwardWinningMovies> database){  
 *//lists movies in the database and exit option.* **boolean** exit = **false**;  
 **while**(!exit){  
 System.***out***.println(**"\n--------------------------------------------------------------"**);  
 System.***out***.println(**"\nSelected award-winning movies:"**);  
 **int** i = 0, scanned;  
 Scanner scan = **new** Scanner(System.***in***);  
 Iterator<AwardWinningMovies> iter = database.iterator();  
 **while**(iter.hasNext()){  
 AwardWinningMovies temp = iter.next();  
 i++;  
 System.***out***.println(i + **") "** + temp.getTitle());  
 }  
 i++;  
 System.***out***.println(i + **") "** + **"Exit"**);  
  
 System.***out***.println(**"\nPlease enter number of movie you would like to know more about, or exit: "**);  
 AwardWinningMovies temp2 = **null**;  
  
 *//validates input and lists more detailed information about movies.* **try**{  
 scanned = scan.nextInt();  
 **if**(scanned >= 0 && scanned <= i) {  
 **if**(scanned == i+1){  
 exit = **true**;  
 **break**;  
 }  
 temp2 = database.get(scanned-1);  
 System.***out***.println(**"Title: "** + temp2.getTitle());  
 System.***out***.println(**"Rating: "** + temp2.getRating());  
 System.***out***.println(**"Director: "** + temp2.getDirector());  
 System.***out***.println(**"Star: "** + temp2.getStar());  
 System.***out***.println(**"Award: "** + temp2.getAwardTitle() + **" ("** + temp2.getAwardYear() + **")"**);  
  
 *//asks user if they want to repeat detailed information.* **boolean** valid = **false**;  
 String answer = **""**;  
 **while**(!valid){  
 System.***out***.println(**"\nInquire about other movies (Y/N)?"**);  
 answer = scan.next();  
 **if**(!((answer.equalsIgnoreCase(**"Y"**)||answer.equalsIgnoreCase(**"N"**)))){  
 System.***out***.println(**"Please input either \'Y\' or \'N\'"**);  
 valid = **false**;  
 }  
 **else** {  
 **if** (answer.equalsIgnoreCase(**"Y"**))  
 exit = **false**;  
 **else** exit = **true**;  
 valid = **true**;  
 }  
 }  
 }  
 **else**{  
 exit = **false**;  
 System.***out***.println(**"Please input a valid integer (ie. 1, 2, 3)"**);  
 System.***out***.println(**"--------------------------------------------------------------"**);  
 }  
 }  
 **catch**(Exception e){  
 exit = **false**;  
 System.***out***.println(**"Please input an integer (ie. 1, 2, 3)"**);  
 System.***out***.println(**"--------------------------------------------------------------"**);  
 }  
 }  
 }  
  
 */\*\*Method to Search Movies By Title or Star\*\*/* **public static void** searchMovies(ArrayList<AwardWinningMovies> database){  
 *//displays options and validates if answer is 't' or 's' or 'e'.* **boolean** exit = **false**;  
 **while**(!exit){  
 Scanner scan = **new** Scanner(System.***in***);  
 String answer = **""**;  
 **boolean** valid = **false**;  
 **while**(!valid){  
 System.***out***.println(**"\n--------------------------------------------------------------"**);  
 System.***out***.println(**"\nType T to search by title or S to search by star or E for exit: "**);  
 answer = scan.next();  
 answer = answer.toLowerCase();  
 **if**(!(answer.equals(**"t"**)||answer.equals(**"s"**)||answer.equals(**"e"**))){  
 System.***out***.println(**"Please input either 'T' or 'S' or 'E'"**);  
 valid = **false**;  
 }  
 **else** valid = **true**;  
 }  
  
 *//gives search input according to option given by user and searches through database.* String answer2 = **""**;  
 Iterator<AwardWinningMovies> iter = database.iterator();  
 **switch**(answer){  
 **case "t"**:  
 **boolean** foundT = **false**;  
 System.***out***.println(**"Please enter a movie title: "**);  
 answer2 = scan.nextLine();  
 answer2 = scan.nextLine();  
 **while**(iter.hasNext()){  
 AwardWinningMovies temp = iter.next();  
 **if**(temp.getTitle().equalsIgnoreCase(answer2)){  
 System.***out***.println(**"Title: "** + temp.getTitle());  
 System.***out***.println(**"Rating: "** + temp.getRating());  
 System.***out***.println(**"Director: "** + temp.getDirector());  
 System.***out***.println(**"Star: "** + temp.getStar());  
 System.***out***.println(**"Award: "** + temp.getAwardTitle() + **" ("** + temp.getAwardYear() + **")"**);  
 foundT = **true**;  
 exit = **true**;  
 **break**;  
 }  
 }  
 **if**(!foundT)  
 System.***out***.println(**"That title does not exist in the database."**);  
 **break**;  
 **case "s"**:  
 **boolean** foundS = **false**;  
 System.***out***.println(**"Please enter a movie title: "**);  
 answer2 = scan.nextLine();  
 answer2 = scan.nextLine();  
 **while**(iter.hasNext()){  
 AwardWinningMovies temp = iter.next();  
 **if**(temp.getStar().equalsIgnoreCase(answer2)){  
 System.***out***.println(**"Title: "** + temp.getTitle());  
 System.***out***.println(**"Rating: "** + temp.getRating());  
 System.***out***.println(**"Director: "** + temp.getDirector());  
 System.***out***.println(**"Star: "** + temp.getStar());  
 System.***out***.println(**"Award: "** + temp.getAwardTitle() + **" ("** + temp.getAwardYear() + **")"**);  
 foundS = **true**;  
 exit = **true**;  
 **break**;  
 }  
 }  
 **if**(!foundS)  
 System.***out***.println(**"That title does not exist in the database."**);  
 **break**;  
 **case "e"**:  
 exit = **true**;  
 **break**;  
 **default**:  
 **break**;  
 }  
 }  
 }  
  
 */\*\*Method for Exit Messages\*\*/* **public static boolean** exitProgram(){  
 System.***out***.println(**"\n--------------------------------------------------------------"**);  
 System.***out***.println(**"Thank you for using \'EXPERIMENTAL MOVIE DATABASE\'"**);  
 **return true**;  
 }  
}

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*SOURCE CODE: MOVIE SUPERCLASS*

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*/\*  
Author: Hayson Chu  
E-mail: hzc5389@psu.edu  
Course: CMPSC 221  
Assignment: Programming Assignment 4  
Due date: 3/31/2020  
File: Movie.java  
Purpose: Superclass Movie  
Compiler/IDE: Java 13/IntelliJIdea  
Operating system: MacOS  
Reference(s): Java 10 API - Oracle Documentation  
 (http://docs.oracle.com/javase/10/docs/api/);  
(Include ALL additional references (Web page, etc.) here.)  
\*/  
  
/\*\*Superclass\*\*/***public class** Movie {  
 */\*\*Instance Variables\*\*/* **private** String **title**;  
 **private** String **rating**;  
 **private** String **genre**;  
 **private** String **director**;  
 **private** String **star**;  
  
 */\*\*Default Constructor\*\*/* **public** Movie(){  
 **title** = **""**;  
 **rating** = **""**;  
 **genre** = **""**;  
 **director** = **""**;  
 **star** = **""**;  
 }  
  
 */\*\*Parameterized Constructor\*\*/* **public** Movie(String title, String rating, String genre, String director, String star){  
 **this**.**title** = title;  
 **this**.**rating** = rating;  
 **this**.**genre** = genre;  
 **this**.**director** = director;  
 **this**.**star** = star;  
 }  
  
 */\*\*Get Methods\*\*/* **public** String getTitle(){  
 **return title**;  
 }  
  
 **public** String getRating(){  
 **return rating**;  
 }  
  
 **public** String getGenre(){  
 **return genre**;  
 }  
  
 **public** String getDirector(){  
 **return director**;  
 }  
  
 **public** String getStar(){  
 **return star**;  
 }  
  
 */\*\*Set Methods\*\*/* **public void** setTitle(String title){  
 **this**.**title** = title;  
 }  
  
 **public void** setRating(String rating){  
 **this**.**rating** = rating;  
 }  
  
 **public void** setGenre(String genre){  
 **this**.**genre** = genre;  
 }  
  
 **public void** setDirector(String director){  
 **this**.**director** = director;  
 }  
  
 **public void** setStar(String star){  
 **this**.**star** = star;  
 }  
  
 */\*\*Equals Method\*\*/* @Override  
 **public boolean** equals(Object otherObject){  
 **if**(otherObject == **null**)  
 **return false**;  
 **else if**(getClass()!= otherObject.getClass())  
 **return false**;  
 **else**{  
 Movie otherMovie = (Movie)otherObject;  
 **return**((**title**.equals(otherMovie.**title**))&&(**rating**.equals(otherMovie.**rating**))  
 &&(**genre**.equals(otherMovie.**genre**))&&(**director**.equals(otherMovie.**director**))  
 &&(**star**.equals(otherMovie.**star**)));  
 }  
 }  
  
 */\*\*toString Method\*\*/* @Override  
 **public** String toString(){  
 **return**(**title** + **" "** + **rating** + **" "** + **genre** + **" "** + **director** + **" "** + **star**);  
 }  
}

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*SOURCE CODE: AWARD WINNING MOVIE SUBCLASS OF MOVIE CLASS*

*----------------------------------------------------------------------------------*

*/\*  
Author: Hayson Chu  
E-mail: hzc5389@psu.edu  
Course: CMPSC 221  
Assignment: Programming Assignment 4  
Due date: 3/31/2020  
File: AwardWinningMovies.java  
Purpose: Subclass of Movie Superclass  
Compiler/IDE: Java 13/IntelliJIdea  
Operating system: MacOS  
Reference(s): Java 10 API - Oracle Documentation  
 (http://docs.oracle.com/javase/10/docs/api/);  
(Include ALL additional references (Web page, etc.) here.)  
\*/  
  
/\*\*Subclass of Movie\*\*/***public class** AwardWinningMovies **extends** Movie{  
 **private** String **awardTitle**;  
 **private int awardYear**;  
  
 */\*\*Default Constructor\*\*/* **public** AwardWinningMovies(){  
 **super**();  
 **awardTitle** = **""**;  
 **awardYear** = 0000;  
 }  
  
 */\*\*Parameterized Constructor\*\*/* **public** AwardWinningMovies(String title, String rating, String genre, String director, String star,  
 String awardTitle, **int** awardYear){  
 **super**(title, rating, genre, director, star);  
 **this**.**awardTitle** = awardTitle;  
 **this**.**awardYear** = awardYear;  
 }  
  
 */\*\*Get Methods\*\*/* **public** String getAwardTitle(){  
 **return awardTitle**;  
 }  
  
 **public int** getAwardYear(){  
 **return awardYear**;  
 }  
  
 */\*\*Set Methods\*\*/* **public void** setAwardTitle(String awardTitle){  
 **this**.**awardTitle** = awardTitle;  
 }  
  
 **public void** setAwardYear(**int** awardYear){  
 **this**.**awardYear** = awardYear;  
 }  
  
 */\*\*Equals Method\*\*/* @Override  
 **public boolean** equals(Object otherObject){  
 **if**(otherObject == **null**)  
 **return false**;  
 **else if**(getClass() != otherObject.getClass())  
 **return false**;  
 **else**{  
 AwardWinningMovies otherMovies = (AwardWinningMovies) otherObject;  
 **return**((getTitle().equals(otherMovies.getTitle()))&&(getRating().equals(otherMovies.getRating()))  
 &&(getGenre().equals(otherMovies.getGenre()))&&(getDirector().equals(otherMovies.getDirector()))  
 &&(getStar().equals(otherMovies.getStar()))&&(getAwardTitle().equals(otherMovies.getAwardTitle()))  
 &&(getAwardYear()==otherMovies.getAwardYear()));  
 }  
 }  
  
 */\*\*toString Method\*\*/* @Override  
 **public** String toString(){  
 **return**(getTitle() + **", "** + getRating() + **", "** + getDirector() + **", "** + getStar() +  
 **", "** + getAwardTitle() + **", "** + getAwardYear());  
 }  
}

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*SAMPLE #1*

*---------------------------------------------------------------------------------*A screenshot of a cell phone

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A screenshot of a social media post

Description automatically generatedA screenshot of a cell phone

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*SAMPLE #2*

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A screenshot of a social media post

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A screenshot of a social media post

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