Formative Assignment

Programming Fundamentals 2

BSc in IT

The specification of this assignment is based on your final assignment in semester 2 of year 1, with some changes:

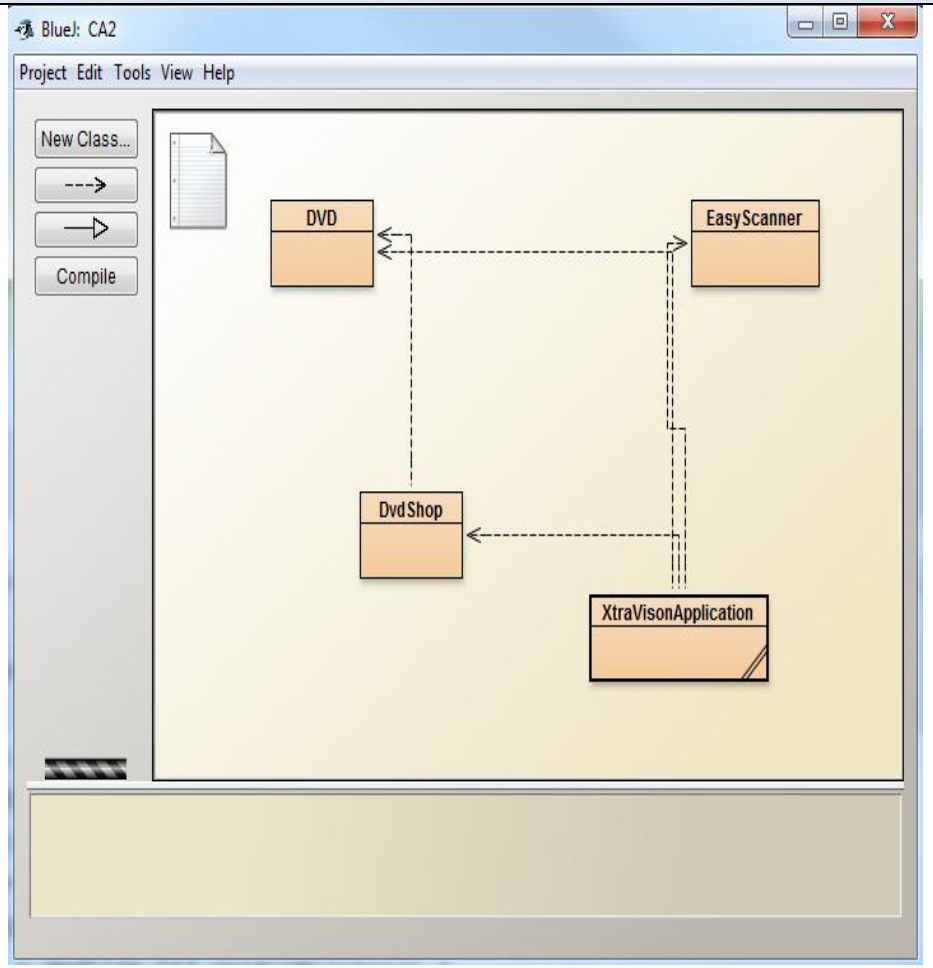
1. Changes to the specification will be denoted using this font.
2. You are asked to implement this application using the IntelliJ. IDE

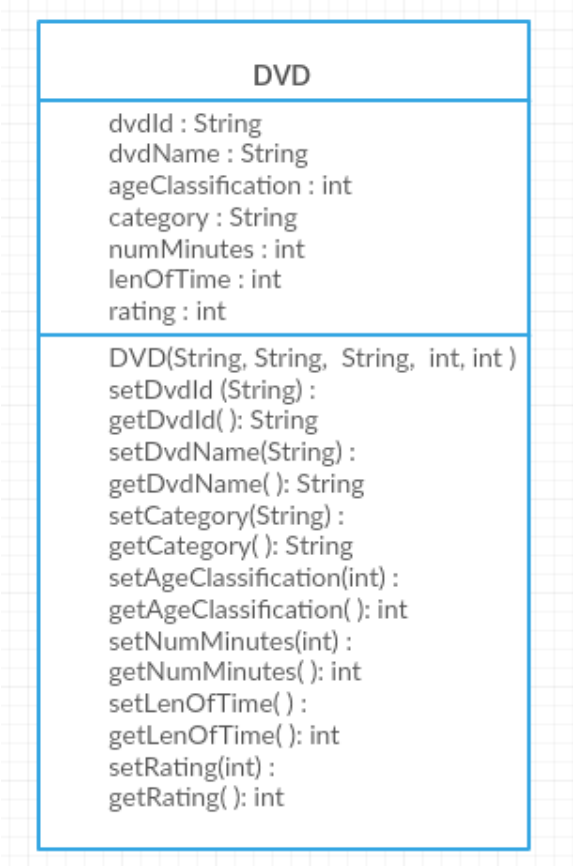
You are required to develop a DVD menu system

This will involve the development of three new classes:

- DVD
- DvdShop
- XtraVisionApplication

You may use the EasyScanner for user input.





The **DVD** class.

This is a template / blueprint class for a DVD. It stores data on the id, name, age classification, category, rating, running time and length of time in shop (assume it starts at 0 until changed). The constructor updates **some** of these attributes (instance variables) with the information passed as a parameter. You should use the this. Construct for the constructor and setters.

You need an accessor and mutator methods for each attribute.

You are asked to write a toString() method for this class.

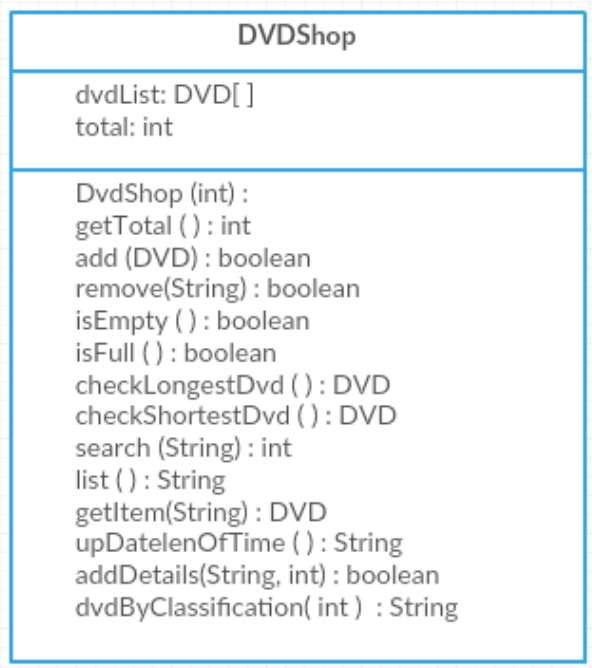
You are asked to implement validations on each of the following fields:

dvdName – should be no longer than 20 characters

numMinutes – should be >=0 and <= 180 minutes

ageClasification should be between 12 and 19 (inclusive)

rating – should be >=0 and <= 5

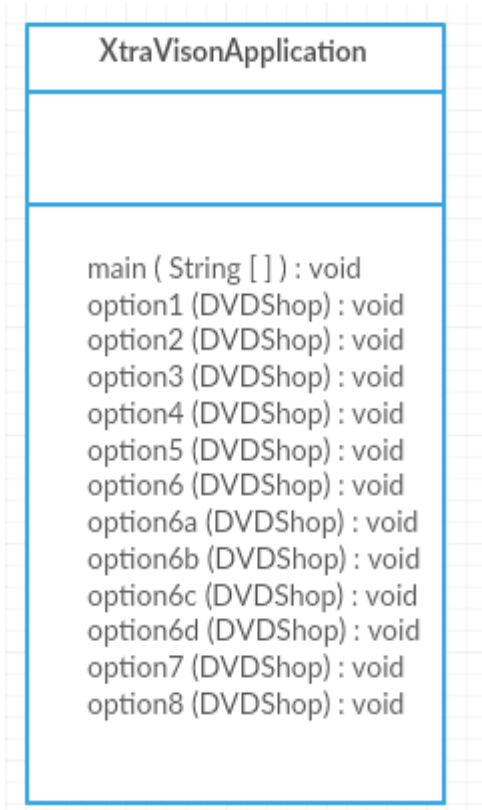
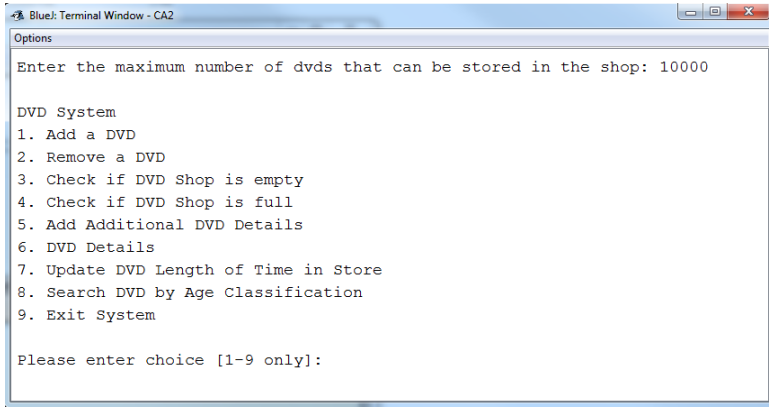


The **DVDShop** class.

This class creates an array of dvd and handles it. You will need to maintain a total attribute that will hold the number of dvds stored in the system.

Typical methods would include (**but not limited to see UML diagram for full list**):

- a constructor that will set the size of the array and set the total number of DVDs to 0.
- add a DVD to the system (to the array)
- remove a DVD from the system (from the array)
- check if the system is empty
- check if the system is full
- return the total number of DVDs in the system
- search the system for a DVD
- show all of the DVDs stored in the system
- a method to update **ALL** the DVDs length of years in the store (this will update all the dvd length of time in store by 1).

<table>
<tr>
<td rowspan="2"> 
</td>
<td>The XtraVisionApplication class contains the main method. This class displays the menu repeatedly to the user. Note that there is a private method behind each option on the menu. i.e. if the user enters 1 it will call another method to execute option 1, if the user enters 2 it will call another method to execute option 2 etc.</td>
<td> 
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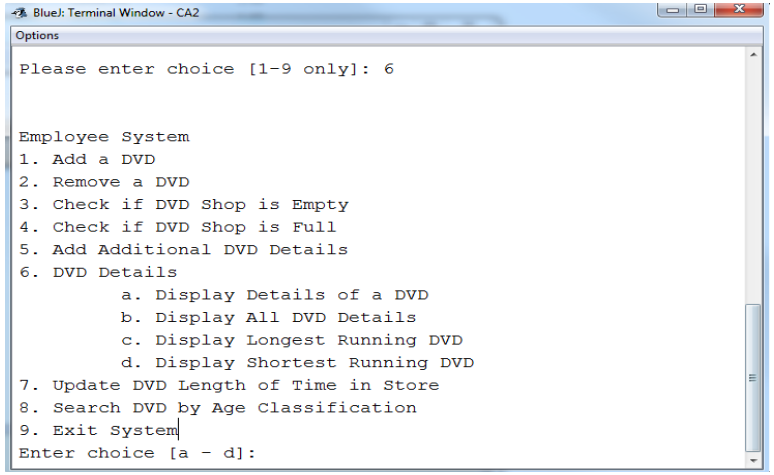
<tr>
<td>When the user selects option 6, a sub-menu is displayed to the user.</td>
<td> 
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Information for Project

1. You **MAY** need additional methods in the blueprint classes.
2. Remember no printing out data in the blueprint classes.

Important Points

1. This is a formative assessment. This means that it will be assessed in the usual way but marks you received from this will not towards your final module mark.
2. Code **MUST** be commented.
3. Your program **MUST** run as sample program runs.
4. By uploading your assignment, you are electronically signing the WIT anti-plagiarism declaration. Please see the WIT website for more details on this policy.
5. You will be interviewed on your programs when they are submitted to determine authorship and understanding during the semester. We will go through these interviews for this assessment. These interviews will take place on during Week 3's labs
6. Please submit by Monday 23rd September2019 by 10am (however you can submit it early).
7. You must submit the fully commented project via moodle (zip and upload, folder called YourName).
8. You must ensure you have uploaded the correct file.