National Institute of Technology, Calicut
Department of Computer Science & Engineering
B.Tech Winter Semester 2019-2020
CS4097D Object Oriented Systems Laboratory

11-02-2020 **(Marks: 5*3=15)**

EVALUATION 2

1.Create a list termed IntList of a fixed size and add an element to a list. If the list is already full, a message should be printed. Construct a class SortedIntList that extends IntList such that its elements should always be in sorted order from smallest to largest. This means that when an element is inserted into a SortedIntList it should be put into its sorted place, not just at the end of the list. Give an option to choose which addition method to expand the array.

Sample input:

Options

1 Enter to the IntList

2 Enter to sortedIntList

3 Print IntList

4 Print sortedIntList

1

25

Options

1 Enter to the IntList

2 Enter to sortedIntList

3 Print IntList

4 Print sortedIntList

3

25

Options

1 Enter to the IntList

2 Enter to sortedIntList

3 Print IntList

4 Print sortedIntList

2

11

Options

1 Enter to the IntList

2 Enter to sortedIntList

3 Print IntList

4 Print sortedIntList

2

9

Options

1 Enter to the IntList

2 Enter to sortedIntList

3 Print IntList

4 Print sortedIntList

4

9 11

2. Write a java program to implement an inventory system for the video rental store. A video store consists of many videos. Each video consists of a title, average user rating, and whether the video is rented out or not, a method to track whether the video is rented or returned and average rating of the video.

The video store will provide the facility to add a new video (by title) to the inventory, check out a video (by title), return a video to the store; take a user's rating for a video, and list the whole inventory of videos in the store.

Create a main() class VideoStoreLauncher with a method which will test the functionality .It should allow the following operations.

1. Add "n number of "videos:

   if n is 3 the inventory consists of video . 'i" is used to insert videos into inventory.

   "The Shawshank Redemption", "Godfather I", "The Dark Knight".

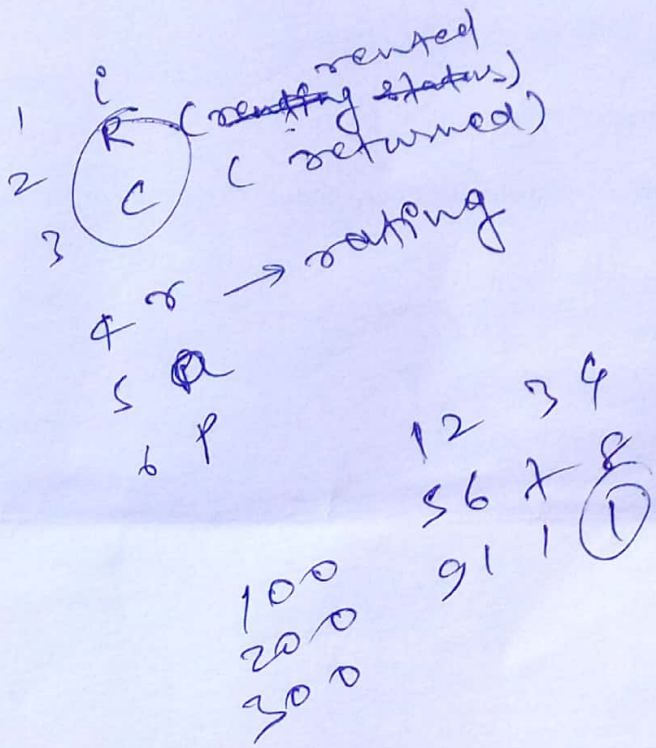
2. Give several ratings to each video . " r" is used to give ratings to the video (0-5) ."a" gives the average rating

3. Rent each video out once and return it ("R is used to rent and C is used to return the video").

4. "p" is used to list the inventory after "Godfather II" has been rented out "S" is used to find the. current status of the video.

Sample input:

Enter Total size of videos present in video Store Present in Video Store: 3
i Shawshank Redemption
i Godfather
i The Dark Knight
R Godfather
C Godfather
r Godfather 4
R Godfather
C Godfather
r Godfather 5
a Godfather
4.5
a The Dark Knight
No Rating Given
R Shawshank Redemption
p
Godfather
The Dark Knight
R Shawshank Redemption
Already Rented
C Shawshank Redemption
r Shawshank Redemption 5
S The Dark Knight
Available



3. Create a management system for an athletic club organizing a marathon in java using oops concepts , which will track runners and announce the results and sponsorship donations. Each runner in the marathon has a number. A runner is described as e.g. "Runner 42" where 42 is their number. They finish the race at a specified time recorded in hours, minutes and seconds. Their result status can be checked and will be displayed as either "Not finished" or "Finished in hh:mm:ss" (All zero for hh mm and ss means Not finished). Every competitor is either a professional runner or amateur runner. Further to the above, a professional additionally has a world ranking and is described as e.g. "Runner 174 (Ranking 17)". All amateurs are fund raising for a charity so each additionally has a sponsorship form. A sponsorship form has the number of sponsors, a list of the sponsors, and a list of amounts sponsored. A sponsor and amount can be added, and a list can be printed showing the sponsors and sponsorship amounts and the total raised. A fancy dress runner is a kind of amateur (with sponsorship etc.) who also has a costume, and is described as e.g. "Runner 316 (Duck)". (Use oop concepts wherever possible like fancy dress runner inherits armature runner, sponsor is a different class and armature runner has many object of class sponsors in it. Always create separate class with attributes and inherit).

Sample input :

1- Add Runner details

2- Display runner details.

3- Exit

Enter choice - 1

Type of Runner

1-Professional

2-Armature

3-Fancy dress runner

Enter choice 1

Enter runner details(Number ranking and finish time in hh:mm:ss format)

10 127 5:30:20

1- Add Runner details.

2- Display runner details.

Enter choice - 1

Type of Runner

1-Professional

2-Armature

3-Fancy dress runner

Enter choice 2

Enter runner details(Number,finish time in hh:mm:ss format)

11 8:20:20

Enter number of sponsors 2

Enter sponsorship details (Name of sponsor and amount)

google 10000

amazon 20000

1- Add Runner details.

2- Display runner details.

3- Exit

Enter choice - 1

Type of Runner

1-Professional

2-Armature

3-Fancy dress runner

Enter choice 3

Enter runner details(Number costume and finish time in hh:mm:ss format)

12 duck 0:0:0

Enter number of sponsors 1

Enter sponsorship details (Name of sponsor and amount)

yahoo 10000

1- Add Runner details.

2- Display runner details.

3- Exit

Enter choice - 2

Runner 10(Ranking 127) Finished in 5:30:20 .

Runner 11 sponsors google - 10000 , amazon- 20000 Total 30000 Finished in 8:20:20 .

Runner 12(Duck) sponsors yahoo 10000 Total 10000 Not finished.

1- Add Runner details.

2- Display runner details.

3- Exit

Enter choice – 3