Department of Computer Science & Engineering

UNIVERSITY INSTITUTE OF ENGINEERING

Department of Computer Science & Engineering

Subject Name: Project Based Learning in Java Lab

Subject Code: 20CSP321

Submitted to: Er.Parveen Tanwar Sir

Faculty name: Er. Parveen Tanwar Sir

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Section: 607

Group: B

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Ex. No	List of Experiments	Conduct (MM: 12)	Viva (MM: 10)	Record (MM: 8)	Total (MM: 30)	Date	Remarks/Signature
1.1	Create an application to save the employee information using arrays.					03/09/22	
1.2	Design and implement a simple inventory control system for a small video rental store.					05/09/22	
1.3	Create a application to calculate interest for FDs, RDs based on certain conditions using inheritance.					10/09/22	
2.1	Create a program to set view of Keys from Java Hashtable.						
2.2	Create a program to show the usage of Sets of Collection interface.						
2.3	Write a Program to perform them basic operations like insert, delete, display, and search in list. List contains String object items where these operations are to be performed.						
2.4	Create a menu-based Java application with the following options. 1.Add an Employee 2.Display All 3.Exit If option 1 is selected, the application should gather details of the employee like employee name, employee id, designation and salary and store it in a file. If option 2 is selected, the application should display all the employee details. If option 3 is selected the application should exit.						
3.1	Create a palindrome creator application for making a longest possible palindrome out of given input string.						
3.2	Create a Servlet/ application with a facility to print any message on web browser.						
3.3	Create JSP application for addition, multiplication and division.						

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Experiment 1.2

Student Name: Pranjal Kumar **UID: 20BS3504**

Branch: CSE **Section/Group: 607-B**

Semester: 5th **Date of Performance: 05/09/22**

Subject Name: PBLJ Lab **Subject Code: 20CSP-321**

AIM:

Design and implement a simple inventory control system for a small video rental store.

OBJECTIVE:

A Video Rental Inventory System

The goal of this project is to design and implement a simple inventory control system for a small video rental store. Define least two classes: a class **Video** to model a video and a class **VideoStore** to model the actual store. Assume that an object of class Video has the following attributes:

1. A title;

2. a flag to say whether it is checked out or not; and 3. An average user rating.

Add instance variables for each of these attributes to the Video class.

In addition, you will need to add methods corresponding to the following: 1. being checked out; 2. being returned; and 3. receiving a rating.

The VideoStore class will contain at least an instance variable that references an array of videos (say of length 10). The VideoStore will contain the following methods:

1. addVideo(String): add a new video (by title) to the inventory;
2. checkOut(String): check out a video (by title);
3. returnVideo(String): return a video to the store;
4. receiveRating(String, int) : take a user's rating for a video; and
5. listInventory(): list the whole inventory of videos in the store.

Finally, create a VideoStoreLauncher class with a main() method which will test the functionality of your other two classes.

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JAVA CODE/INPUT:

Class video-:

```
package javalab;
import java.util.*;
public class video {
   String title;
   public boolean checked=true;
   int rating=0;
   public boolean checked()
   {
      return checked;
   }
   public void rent()
   {
      checked=false;
   }
   public void returned()
   {
      checked=true;
   }
   public int getrating()
   {
      return rating;
   }
}
```

video.java

```java
package javalab;
import java.util.*;
public class video {
    String title;
    public boolean checked=true;
    int rating=0;
    public boolean checked()
    {
        return checked;
    }
    public void rent()
    {
        checked=false;
    }
    public void returned()
    {
        checked=true;
    }
    public int getrating()
    {
        return rating;
    }
}
```

Class videolauncher-:

```
package javalab;
import java.util.*;
public class videolauncher {
   public static void main(String[] args) {
      videostore vs = new videostore();
      Scanner sc = new Scanner(System.in);
      int s1;
      String a;
      String b = " ";
      do {
         System.out.println("==========Menu==========");
         System.out.println("1. Login as user");
         System.out.println("2. Login as admin ");
         System.out.println("Enter Your Choice");
```

```
s1 = sc.nextInt();
switch (s1) {
   case 1:
      int s2;
      String title2;
      do {
         System.out.println("1. List Inventory");
         System.out.println("2. Rent a video ");
         System.out.println("3. Want to give rating of video ");
         System.out.println("4. Want to return a video ");
         s2 = sc.nextInt();
         switch (s2) {
            case 1:
               vs.listinventory();
               break;
            case 2:
               vs.listinventory();
               System.out.println("Enter the name of the video you want ");
               title2 = sc.next();
               vs.checkout(title2);
               break;
            case 3:
               vs.receiverating();
               break;
            case 4:
               System.out.println("Enter the name of the video you want to return");
               title2 = sc.next();
               vs.returnvideo(title2);
               break;
            default:
               System.out.println("invalid option ");
               System.out.println("Do you want to repeat yes/no");
               b = sc.next();

         }
      } while (b.equals("yes"));
   case 2:
      int ef;
      String c, title3;
      do {
         System.out.println("1. list Inventory");
         System.out.println("2. Add a video ");
         ef = sc.nextInt();
         if (ef == 1) vs.listinventory();
         else if (ef == 2) {
            System.out.println("Enter the name of Video");
            title3 = sc.next();
            vs.addvideo(title3);
         } else
```

```
                    System.out.println("Invalid option");
                System.out.println("Do you want to repeat yes/no");
                c = sc.next();
            } while (c.equals("yes"));

        }
        System.out.print("Want to go back to main menu yes/no\n");
        a = sc.next();
    } while (a.equals("yes"));
  }
}
```

videolauncher.java

```
package javalab;
import java.util.*;
public class videolauncher {
    public static void main(String[] args) {
        videostore vs = new videostore();
        Scanner sc = new Scanner(System.in);
        int s1;
        String a;
        String b = " ";
        do {
            System.out.println("===========Menu===========");
            System.out.println("1. Login as user");
            System.out.println("2. Login as admin ");
            System.out.println("Enter Your Choice");
            s1 = sc.nextInt();
            switch (s1) {
                case 1:
                    int s2;
                    String title2;
                    do {
                        System.out.println("1. List Inventory");
                        System.out.println("2. Rent a video ");
                        System.out.println("3. Want to give rating of video ");
                        System.out.println("4. Want to return a video ");
                        s2 = sc.nextInt();
                        switch (s2) {
                            case 1:
                                vs.listinventory();
                                break;
                            case 2:
                                vs.listinventory();
                                System.out.println("Enter the name of the video you want ");
                                title2 = sc.next();
                                vs.checkout(title2);
                                break;
```

```
                    case 3:
                        vs.receiverating();
                        break;
                    case 4:
                        System.out.println("Enter the name of the video you want to return");
                        title2 = sc.next();
                        vs.returnvideo(title2);
                        break;
                    default:
                        System.out.println("invalid option ");
                        System.out.println("Do you want to repeat yes/no");
                        b = sc.next();

                }
            } while (b.equals("yes"));
        case 2:
            int ef;
            String c, title3;
            do {
                System.out.println("1. list Inventory");
                System.out.println("2. Add a video ");
                ef = sc.nextInt();
                if (ef == 1) vs.listinventory();
                else if (ef == 2) {
                    System.out.println("Enter the name of Video");
                    title3 = sc.next();
                    vs.addvideo(title3);
                } else
                    System.out.println("Invalid option");
                System.out.println("Do you want to repeat yes/no");
                c = sc.next();
            } while (c.equals("yes"));
        }
        System.out.print("Want to go back to main menu yes/no\n");
        a = sc.next();
    } while (a.equals("yes"));
  }
}
```

Class videostore-:

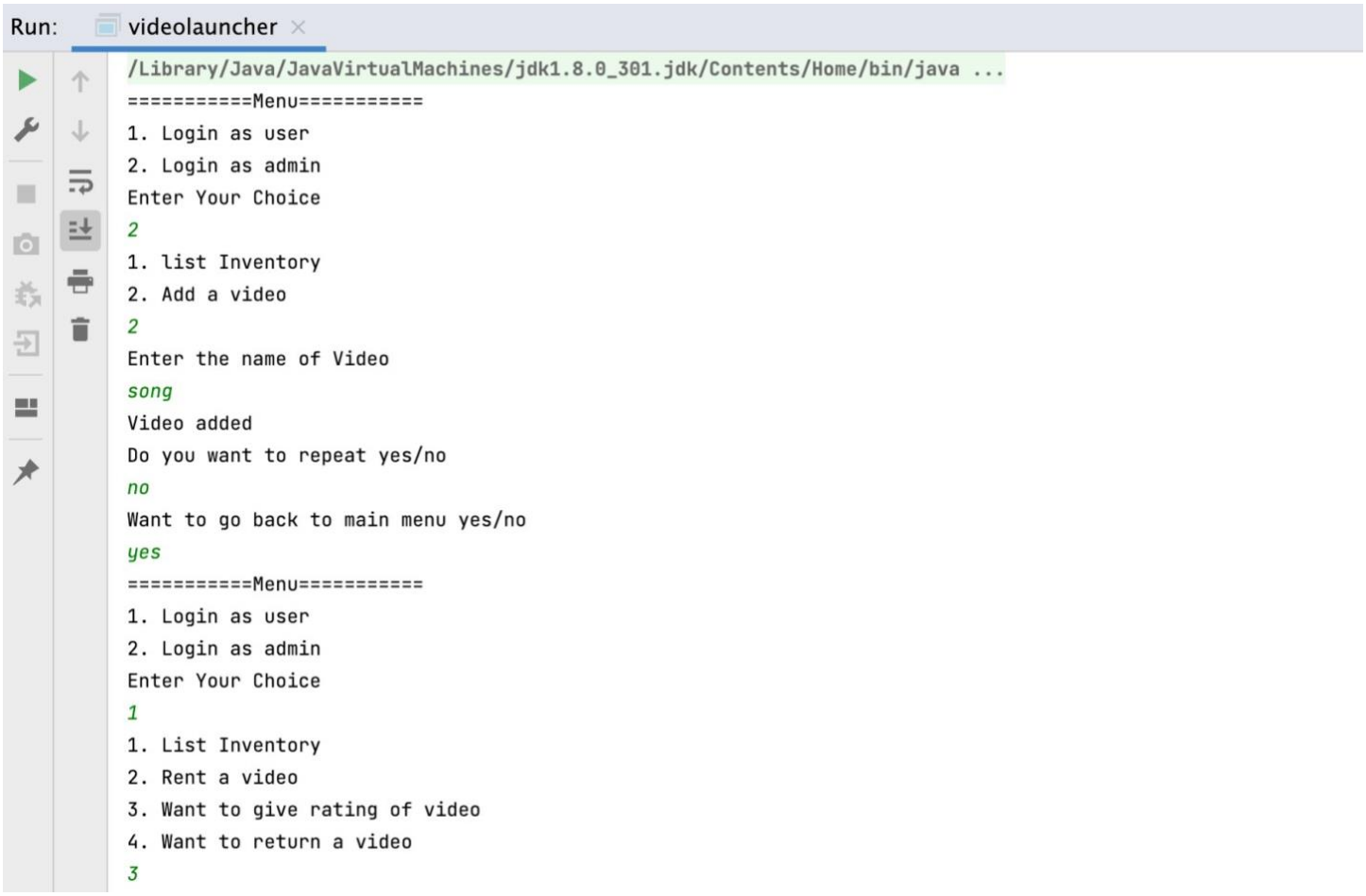
```
package javalab;
import java.util.*;
public class videostore {
   video v[] = new video[20];
   int i = 0;
   Scanner sc = new Scanner(System.in);
```

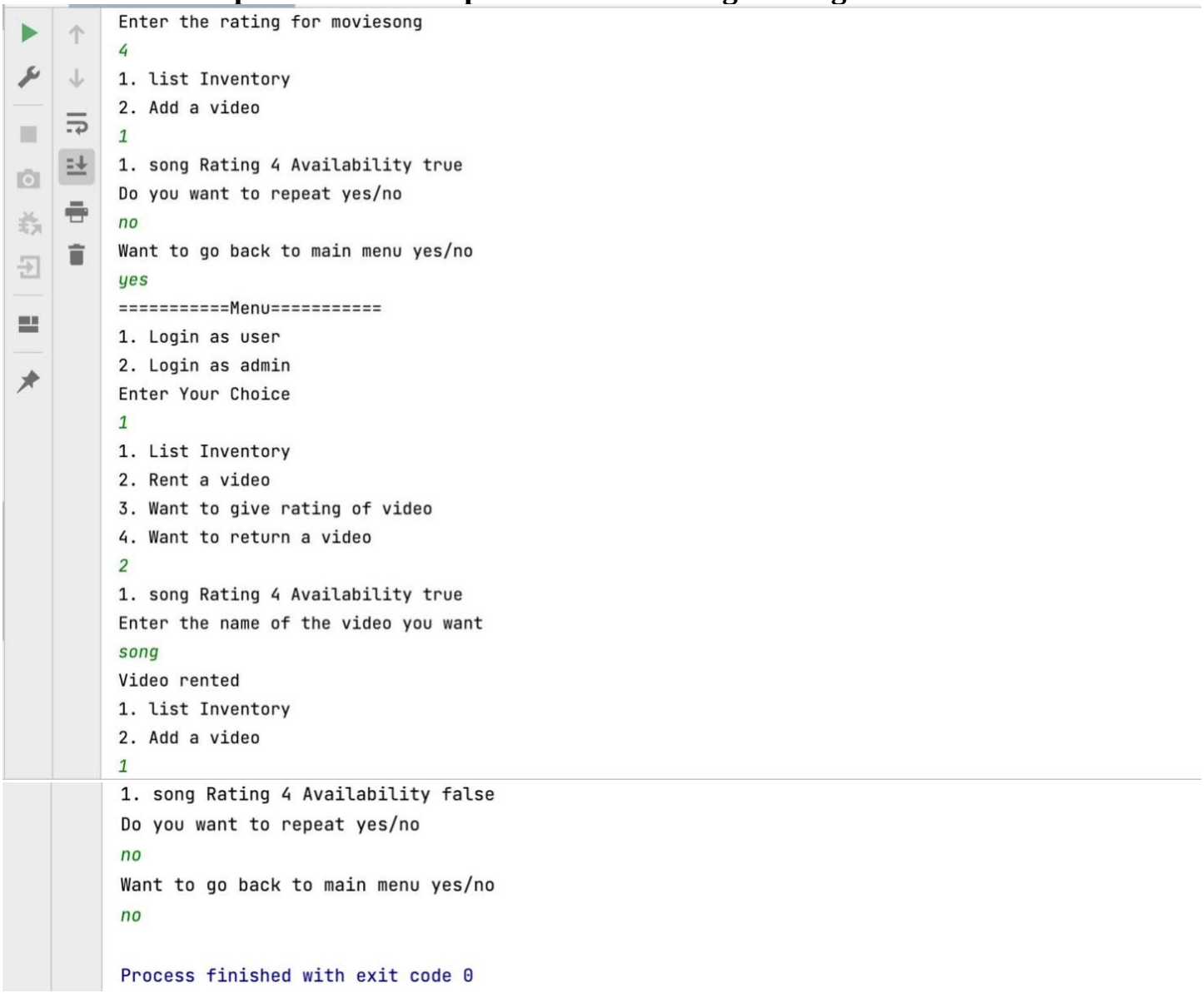
```
    public void addvideo(String title) {
        v[i] = new video();
        v[i].title = title;
        i++;
        System.out.println("Video added");
    }

    public void checkout(String title) {
        for (int k = 0; k < i; k++) {
            if (v[k].title.equals(title)) {
                if (v[k].checked()) v[k].rent();
                System.out.println("Video rented ");
            }
        }
    }

    public void returnvideo(String title) {
        for (int j = 0; j < i; j++) {
            if (v[j].title.equals(title)) {
                v[j].returned();
                System.out.print("Video returned\n");
            }
        }
    }

    public void receiverating() {
        for (int j = 0; j < i; j++) {
            System.out.println("Enter the rating for movie" + v[j].title);
            v[j].rating = sc.nextInt();
        }
    }

    public void listinventory() {
        for (int j = 0; j < i; j++)
            System.out.println((j + 1) + ". " + v[j].title + " Rating "
                    + v[j].getrating() + " Availability " + v[j].checked);
    }
}
```

videostore.java

```java
package javalab;
import java.util.*;
public class videostore {
    video v[] = new video[20];
    int i = 0;
    Scanner sc = new Scanner(System.in);

    public void addvideo(String title) {
        v[i] = new video();
        v[i].title = title;
        i++;
        System.out.println("Video added");
    }

    public void checkout(String title) {
        for (int k = 0; k < i; k++) {
            if (v[k].title.equals(title)) {
                if (v[k].checked()) v[k].rent();
                System.out.println("Video rented ");
            }
        }
    }

    public void returnvideo(String title) {
        for (int j = 0; j < i; j++) {
            if (v[j].title.equals(title)) {
                v[j].returned();
                System.out.print("Video returned\n");
            }
        }
    }

    public void receiverating() {
        for (int j = 0; j < i; j++) {
            System.out.println("Enter the rating for movie" + v[j].title);
            v[j].rating = sc.nextInt();
        }
    }

    public void listinventory() {
        for (int j = 0; j < i; j++)
            System.out.println((j + 1) + ". " + v[j].title + " Rating "
                    + v[j].getrating() + " Availability " + v[j].checked);
    }
}
```

OUTPUT:


Run:
videolauncher
/Library/Java/JavaVirtualMachines/jdk1.8.0_301.jdk/Contents/Home/bin/java ...
==========Menu==========
1. Login as user
2. Login as admin
Enter Your Choice
2
1. list Inventory
2. Add a video
2
Enter the name of Video
song
Video added
Do you want to repeat yes/no
no
Want to go back to main menu yes/no
yes
==========Menu==========
1. Login as user
2. Login as admin
Enter Your Choice
1
1. List Inventory
2. Rent a video
3. Want to give rating of video
4. Want to return a video
3



```
Enter the rating for moviesong
4
1. list Inventory
2. Add a video
1
1. song Rating 4 Availability true
Do you want to repeat yes/no
no
Want to go back to main menu yes/no
yes
==========Menu==========
1. Login as user
2. Login as admin
Enter Your Choice
1
1. List Inventory
2. Rent a video
3. Want to give rating of video
4. Want to return a video
2
1. song Rating 4 Availability true
Enter the name of the video you want
song
Video rented
1. list Inventory
2. Add a video
1
1. song Rating 4 Availability false
Do you want to repeat yes/no
no
Want to go back to main menu yes/no
no

Process finished with exit code 0
```

Learning outcomes (What I have learnt):

1. Identify situations where computational methods would be useful.
2. Approach the programming tasks using techniques learnt and write pseudo-code.
3. Choose the right data representation formats based on the requirements of the problem
4. Use the comparisons and limitations of the various programming constructs and choose the right one for the task.