Experiment 2

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1. **Aim:** Design a simple inventory control system for a small video rental store.

2. **Objective:** Design and implement a simple inventory control system for a small video rental store. Define at least two classes: a class Video to model a video and a class VideoStore to model the actual store. Create a VideoStoreLauncher class with a main() method which will test the functionality of the other two classes.

3. **Implementation/Code:**

Video:

```
public class Video
   { String title;
   boolean isCheckedOut;
   float avgRating, totalRating;
   int num;
   Video(String title)
      { this.title = title;
      this.isCheckedOut = false;
      this.avgRating = 0;
      this.num = 0;
   }
   boolean checkOut()
      { if (!isCheckedOut)
      {
         isCheckedOut = true;
      }
      else {
         System.out.println("Already checked out.");
      }
      return isCheckedOut;
```

```
    }
    boolean returnVideo()
      { if (isCheckedOut) {
        isCheckedOut = false;
      }
      else {
        System.out.println("Already available.");
      }
      return isCheckedOut;
    }
    float receiveRating(int rating)
      { num++;
      totalRating += rating;
      avgRating = totalRating / num;
      return avgRating;
    }
  }
```

Store:

```
  public class Store
    { Video[] videos;
    int videoCount;
    Store() {
      this.videos = new Video[100];
      this.videoCount = 0;
    }
    void addVideo(String title)
      { videos[videoCount] = new Video(title);
      videoCount++;
    }
    void checkOut(String title) {
      for (int i = 0; i < videoCount; i++)
        { if (videos[i].title.equals(title))
        {
          videos[i].checkOut();
          return;
        }
      }
      System.out.println(title + " not found in the store.");
```

```
    }
    void returnVideo(String title) {
      for (int i = 0; i < videoCount; i++)
       { if (videos[i].title.equals(title))
          { videos[i].returnVideo();
           return;
        }
      }
      System.out.println(title + " not found in the store.");
    }
    void rateVideo(String title, int rating)
      { for (int i = 0; i < videoCount; i++) {
        if (videos[i].title.equals(title))
          { videos[i].receiveRating(rating);
          return;
        }
      }
      System.out.println(title + " not found in the store.");
    }
    void listInventory() {
      for (int i = 0; i < videoCount; i++) {
        String availability = videos[i].isCheckedOut ? "Not Available" :
        "Available"; System.out.println(videos[i].title + " - " + availability + " - "
        +
videos[i].avgRating);
      }
    }
}
```

Main(Project2) :

```
import java.util.Scanner;
public class Project2 {
  public static void main(String[] args)
    { Scanner input = new
    Scanner(System.in); Store store = new
    Store();
    int choice;
    String videoTitle;
    System.out.println("\nWelcome!\n");
```

```
        System.out.println("Select an operation:");
        System.out.println("1. Add \n2. Check out \n3. Return \n4. Rate \n5. List
Inventory");
        System.out.println("6. Exit");
        while (true) {
          System.out.println("Enter your choice: ");
          choice = input.nextInt();
          input.nextLine();
          switch (choice) {
            case 1:
              System.out.println("Adding a new video to the inventory.");
              System.out.println("Title: ");
              videoTitle = input.nextLine();
              store.addVideo(videoTitle);
              break;
            case 2:
              System.out.println("Check out a video from the inventory.");
              System.out.println("Title: ");
              videoTitle = input.nextLine();
              store.checkOut(videoTitle);
              break;
            case 3:
              System.out.println("Return a video to the inventory.");
              System.out.println("Title: ");
              videoTitle = input.nextLine();
              store.returnVideo(videoTitle);
              break;
            case 4:
              System.out.println("Rate a video.");
              System.out.println("Title: ");
              videoTitle = input.nextLine();
              System.out.println("Rating: ");
              int rating = input.nextInt();
              input.nextLine();
              store.rateVideo(videoTitle, rating);
              break;
            case 5:
              System.out.println("List all the inventory of the store.");
```

```
                store.listInventory();
                break;
            case 6:
                System.out.println("Exiting...");
                return;
            default:
                System.out.println("Invalid choice. Please try again.");
        } } } }
```

4. Output

```
PS D:\22bcs13216\6\java\code> java Project2

Welcome!

Select an operation:
1. Add
2. Check out
3. Return
4. Rate
5. List Inventory
6. Exit

Enter your choice:
1
Adding a new video to the inventory.
Title:
The Matrix

Enter your choice:
2
Check out a video from the inventory.
Title:
The Matrix

Enter your choice:
3
Return a video to the inventory.
Title:
The Matrix
```

```
Enter your choice:
4
Rate a video.
Title:
The Matrix
Rating:
5

Enter your choice:
5
List all the inventory of the store.
The Matrix - Available - 5.0

Enter your choice:
2
Check out a video from the inventory.
Title:
The Matrix

Enter your choice:
5
List all the inventory of the store.
The Matrix - Not Available - 5.0

Enter your choice:
6
Exiting...
PS D:\22bcs13216\6\java\code>
```

5. Learning Outcome:

- **Arrays, loops and conditional statements**
- **Object-Oriented Programming (OOP)**
- **Menu-driven program using switch case**