Experiment 1.2

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Subject Name: Project Based Learning in Java with Lab
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1. Aim:

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

2. Objective:

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.

3. Algo. /Approach and output:

```
class Video {  private String title;  private boolean checkedOut;  private double averageRating;  private int numberOfRatings;  public Video(String title) {  this.title = title;  this.checkedOut = false;  this.averageRating = 0.0;
    this.numberOfRatings = 0;
  }
  public String getTitle() {
    return title;
  }
  public boolean isCheckedOut() {
    return checkedOut;
  }
  public void checkOut() {
    checkedOut = true;
  }
  public void returnVideo() {
checkedOut = false;
  }
```

```
    public void receiveRating(int rating) {
        averageRating = (averageRating * numberOfRatings + rating) / (numberOfRatings + 1);
numberOfRatings++;
    }
    public double getAverageRating() {
        return averageRating;
    }
}
class VideoStore {     private
Video[] inventory;     public
VideoStore() {
        this.inventory = new Video[10];
    }
    public void addVideo(String title) {
for (int i = 0; i < inventory.length; i++) {
if (inventory[i] == null) {
inventory[i] = new Video(title);
                System.out.println("Video '" + title + "' added to the inventory.");
return;
            }
}
        System.out.println("Error: Inventory is full. Cannot add video '" + title + "'.");
    }
    public void checkOut(String title) {
for (Video video : inventory) {
            if (video != null && video.getTitle().equals(title) && !video.isCheckedOut()) {
video.checkOut();
                System.out.println("Video '" + title + "' checked out.");
return;
            }
}
        System.out.println("Error: Video '" + title + "' not found or already checked out.");
    }
    public void returnVideo(String title) {
for (Video video : inventory) {
            if (video != null && video.getTitle().equals(title) && video.isCheckedOut()) {
video.returnVideo();
```

```
                System.out.println("Video '" + title + "' returned.");
return;
            }
}
        System.out.println("Error: Video '" + title + "' not found or not checked out.");
    }
    public void receiveRating(String title, int rating) {
for (Video video : inventory) {
            if (video != null && video.getTitle().equals(title)) {
                video.receiveRating(rating);
                System.out.println("Rating of " + rating + " received for video '" + title + "'.");
return;
            }
}
        System.out.println("Error: Video '" + title + "' not found.");
    }
    public void listInventory() {
        System.out.println("Current Inventory:");
for (Video video : inventory) {
            if (video != null) {
                System.out.println("Title: " + video.getTitle() +
                        ", Checked Out: " + video.isCheckedOut() +
                        ", Average Rating: " + video.getAverageRating());
            }
        }
    }
}
public class VideoStoreLauncher {     public
static void main(String[] args) {         VideoStore
videoStore = new VideoStore();
videoStore.addVideo("The Matrix");
videoStore.addVideo("Godfather II");
        videoStore.addVideo("Star Wars Episode IV: A New Hope");
videoStore.receiveRating("The Matrix", 4);         videoStore.receiveRating("The Matrix", 5);
videoStore.receiveRating("Godfather II", 5);         videoStore.receiveRating("Godfather II", 4);
        videoStore.receiveRating("Star Wars Episode IV: A New Hope", 3);
videoStore.checkOut("The Matrix");         videoStore.returnVideo("The
Matrix");         videoStore.checkOut("Godfather II");
```

```
videoStore.returnVideo("Godfather II");        videoStore.checkOut("Star
Wars Episode IV: A New Hope");        videoStore.returnVideo("Star
Wars Episode IV: A New Hope");        videoStore.listInventory();
    }
}
```

Output: