

## JAVA PROJECT DEVELOPMENT-1

## Video Rental Inventory System

The goal of this project is to design (Class Diagram) and implement a simple inventory control system for a small video rental store.

The following are the various classes that are to be implemented.

## 1. Video

## o Member variables

- ☐ String videoName
- ☐ boolean checkout
- ☐ int rating

## o Member functions

- ☐ String getName();
- ☐ void doCheckout();
- ☐ void doReturn();
- ☐ void receiveRating(int rating);
- ☐ int getRating();
- ☐ boolean getCheckout();

## o Constructor

- ☐ Video(String name)

## 2. VideoStore

## o Member variables

- ☐ Video[] store;

## o Member functions

- ☐ void addVideo(String name);
- ☐ void doCheckout(String name);
- ☐ void doReturn(String name);
- ☐ void receiveRating(String name, int rating);

❑ void listInventory();

### 3. VideoLauncher

o Contains the main method to test the program

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Sample Output:

D:\Batches\Milestone1> java VideoLauncher

MAIN MENU

1. Add Videos:
2. Check Out Video :
3. Return Video :
4. Receive Rating :
5. List Inventory :
6. Exit :

Enter your choice (1..6): 1

Enter the name of the video you want to add: Matrix

Video "Matrix" added successfully.

MAIN MENU

1. Add Videos:
2. Check Out Video :
3. Return Video :
4. Receive Rating :
5. List Inventory :
6. Exit :

Enter your choice (1..6): 4

Enter the name of the video you want to Rate: Matrix

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Enter the rating for this video: 9

Rating "9" has been mapped to the Video "Matrix".

MAIN MENU

1. Add Videos:
2. Check Out Video:
3. Return Video:
4. Receive Rating:
5. List Inventory:
6. Exit:

Enter your choice (1..6): 2

Enter the name of the video you want to check out: Matrix

Video "Matrix" checked out successfully.

MAIN MENU

1. Add Videos:
2. Check Out Video :
3. Return Video :
4. Receive Rating :
5. List Inventory :
6. Exit :

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Enter your choice (1..6): 5

-----

Video Name | Checkout Status | Rating

-----

Matrix | true | 9

-----

MAIN MENU

1. Add Videos:
2. Check Out Video :
3. Return Video :
4. Receive Rating :
5. List Inventory :
6. Exit :

Enter your choice (1..6): 3

Enter the name of the video you want to Return: Matrix

Video "Matrix" returned successfully.

MAIN MENU

1. Add Videos:
2. Check Out Video :
3. Return Video :
4. Receive Rating :

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5. List Inventory :
6. Exit :

Enter your choice (1..6): 6

Exiting...!! Thanks for using the application.

Coding:

Import java.util.Scanner;

```
public class SimpleVideoRentalSystem {  
    public static class Video {  
        private String videoName;  
        private boolean checkout;  
        private int rating;  
  
        public Video(String name) {  
            this.videoName = name;  
            this.checkout = false;  
            this.rating = 0;  
        }  
  
        public String getName() {  
            return videoName;  
        }  
  
        public void doCheckout() {  
            checkout = true;  
        }  
  
        public void doReturn() {
```

```

        checkout = false;
    }

    public void receiveRating(int rating) {
        this.rating = rating;
    }

    public int getRating() {
        return rating;
    }

    public boolean getCheckout() {
        return checkout;
    }
}

public static class VideoStore {
    private Video[] store;
    private int count;

    public VideoStore(int capacity) {
        store = new Video[capacity];
        count = 0;
    }

    public void addVideo(String name) {
        if (count < store.length) {
            store[count++] = new Video(name);
            System.out.println("Video \"" + name + "\" added successfully.");
        } else {
            System.out.println("Store is full. Cannot add more videos.");
        }
    }
}

```

```
}  
}
```

```
public void doCheckout(String name) {  
    for (int i = 0; i < count; i++) {  
        if (store[i].getName().equals(name)) {  
            if (store[i].getCheckout()) {  
                System.out.println("Video \"" + name + "\" is already checked out.");  
            } else {  
                store[i].doCheckout();  
                System.out.println("Video \"" + name + "\" checked out successfully.");  
            }  
            return;  
        }  
    }  
    System.out.println("Video \"" + name + "\" not found.");  
}
```

```
public void doReturn(String name) {  
    for (int i = 0; i < count; i++) {  
        if (store[i].getName().equals(name)) {  
            if (store[i].getCheckout()) {  
                store[i].doReturn();  
                System.out.println("Video \"" + name + "\" returned successfully.");  
            } else {  
                System.out.println("Video \"" + name + "\" was not checked out.");  
            }  
            return;  
        }  
    }  
}
```

```

        System.out.println("Video \"" + name + "\" not found.");
    }

    public void receiveRating(String name, int rating) {
        for (int i = 0; i < count; i++) {
            if (store[i].getName().equals(name)) {
                store[i].receiveRating(rating);

                System.out.println("Rating \"" + rating + "\" has been mapped to the Video \"" +
name + "\".");
                return;
            }
        }
        System.out.println("Video \"" + name + "\" not found.");
    }

```

```

    public void listInventory() {
        System.out.println("-----");
        System.out.println("Video Name | Checkout Status | Rating");
        System.out.println("-----");
        for (int i = 0; i < count; i++) {
            Video video = store[i];
            System.out.printf("%s | %s | %d\n",
                video.getName(),
                video.getCheckout() ? "Checked Out" : "Available",
                video.getRating());
        }
        System.out.println("-----");
    }
}

```

```

// Main method to test the system

```



```
public static void main(String[] args) {  
    Scanner scanner = new Scanner(System.in);  
    VideoStore videoStore = new VideoStore(10); // Initialize store with capacity of 10  
  
    int choice;  
    do {  
        System.out.println("MAIN MENU");  
        System.out.println("1. Add Videos");  
        System.out.println("2. Check Out Video");  
        System.out.println("3. Return Video");  
        System.out.println("4. Receive Rating");  
        System.out.println("5. List Inventory");  
        System.out.println("6. Exit");  
        System.out.print("Enter your choice (1-6): ");  
        choice = scanner.nextInt();  
        scanner.nextLine(); // Consume newline  
  
        switch (choice) {  
            case 1:  
                System.out.print("Enter the name of the video to add: ");  
                String addName = scanner.nextLine();  
                videoStore.addVideo(addName);  
                break;  
            case 2:  
                System.out.print("Enter the name of the video to check out: ");  
                String checkoutName = scanner.nextLine();  
                videoStore.doCheckout(checkoutName);  
                break;  
            case 3:  
                System.out.print("Enter the name of the video to return: ");
```

```

        String returnName = scanner.nextLine();
        videoStore.doReturn(returnName);

        break;
    case 4:
        System.out.print("Enter the name of the video to rate: ");
        String rateName = scanner.nextLine();
        System.out.print("Enter the rating (1-10): ");
        int rating = scanner.nextInt();
        videoStore.receiveRating(rateName, rating);
        scanner.nextLine();

        break;
    case 5:
        videoStore.listInventory();

        break;
    case 6:
        System.out.println("Exiting... Thanks for using the application.");

        break;
    default:
        System.out.println("Invalid choice. Please select a number between 1 and 6.");
    }
} while (choice != 6);

scanner.close();
}
}

```

```
D:\>javac SimpleVideoRentalSystem.java
```

```
D:\>java SimpleVideoRentalSystem
```

```
MAIN MENU
```

1. Add Videos
2. Check Out Video
3. Return Video
4. Receive Rating
5. List Inventory
6. Exit

```
Enter your choice (1-6): 1
```

```
Enter the name of the video to add: matrix
```

```
Video "matrix" added successfully.
```

```
MAIN MENU
```

1. Add Videos
2. Check Out Video
3. Return Video
4. Receive Rating
5. List Inventory
6. Exit

```
Enter your choice (1-6): 4
```

```
Enter the name of the video to rate: matrix
```

```
Enter the rating (1-10): 9
```

```
Rating "9" has been mapped to the Video "matrix".
```

```
MAIN MENU
```

1. Add Videos
2. Check Out Video
3. Return Video
4. Receive Rating
5. List Inventory
6. Exit

```
Enter your choice (1-6): 2
```

```
Enter the name of the video to check out: matrix
```

```
Video "matrix" checked out successfully.
```

```
MAIN MENU
```

1. Add Videos
2. Check Out Video
3. Return Video
4. Receive Rating
5. List Inventory
6. Exit

```
Enter your choice (1-6): 5
```

```
-----  
Video Name | Checkout Status | Rating
```

```
-----  
matrix | Checked Out | 9  
-----
```

```
MAIN MENU
```

1. Add Videos
2. Check Out Video

C:\Windows\System32\cmd.e X

+

▼

4. Receive Rating

5. List Inventory

6. Exit

Enter your choice (1-6): 5

-----  
Video Name | Checkout Status | Rating

-----  
matrix | Checked Out | 9  
-----

MAIN MENU

1. Add Videos

2. Check Out Video

3. Return Video

4. Receive Rating

5. List Inventory

6. Exit

Enter your choice (1-6): 3

Enter the name of the video to return: matrix

Video "matrix" returned successfully.

MAIN MENU

1. Add Videos

2. Check Out Video

3. Return Video

4. Receive Rating

5. List Inventory

6. Exit

Enter your choice (1-6): 6

Exiting... Thanks for using the application.

D:\>|