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Experiment 2

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Subject Name: Project based learning in Java with LAB **Subject Code:** 22CSH-359

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

2. **Objective:** To design and implement a user-friendly inventory control system for a small video rental store, enabling efficient management of video inventory, including functionalities for adding, renting and returning videos.

3. **Implementation/Code:**

```
import java.util.ArrayList;
import java.util.Scanner;
class Video {
   privateStringtitle;
   privatebooleanisAvailable;
   public Video(String title) {
      this.title = title;
      this.isAvailable=true;
   }
   publicStringgetTitle(){ return
      title;
   }
   publicbooleanisAvailable(){
      return isAvailable;
   }
   publicvoidrent(){
      if(isAvailable){
```

```
            isAvailable=false;
        }else{
            System.out.println("Error:Videoisalreadyrentedout.");
        }
    }
    publicvoidreturnVideo(){ if
        (!isAvailable) {
            isAvailable=true;
        }else{
            System.out.println("Error:Videowasnotrented.");
        }
    }
    @Override
    publicStringtoString(){
        return"Title:"+title+"|Available:"+(isAvailable?"Yes":"No");
    }
}

classVideoStore{
    privateArrayList<Video>inventory;

    publicVideoStore(){
        inventory=newArrayList<>();
    }

    publicvoidaddVideo(Stringtitle){ for
        (Video video : inventory) {
            if (video.getTitle().equalsIgnoreCase(title)) {
                System.out.println("Error:Videoalreadyexistsintheinventory.");
                return;
            }
        }
        inventory.add(newVideo(title));
```

```
        System.out.println("Videoaddedsuccessfully:"+title);
    }

    publicvoidlistInventory(){
        if(inventory.isEmpty()){
            System.out.println("Novideosininventory.");
        }else{
            System.out.println("Inventory:");
            for (int i = 0; i < inventory.size(); i++) {
                System.out.println((i+1)+"."+inventory.get(i));
            }
        }
    }

    publicvoidrentVideo(Stringtitle){ for
        (Video video : inventory) {
            if(video.getTitle().equalsIgnoreCase(title)){ if
                (video.isAvailable()) {
                    video.rent();
                    System.out.println("Yourented:"+title);
                }else {
                    System.out.println("Videoiscurrentlyunavailable.");
                }
                return;
            }
        }
        System.out.println("Error:Videonotfoundininventory.");
    }

    publicvoidreturnVideo(Stringtitle){
        for (Video video : inventory) {
            if(video.getTitle().equalsIgnoreCase(title)){ if
                (!video.isAvailable()) {
```

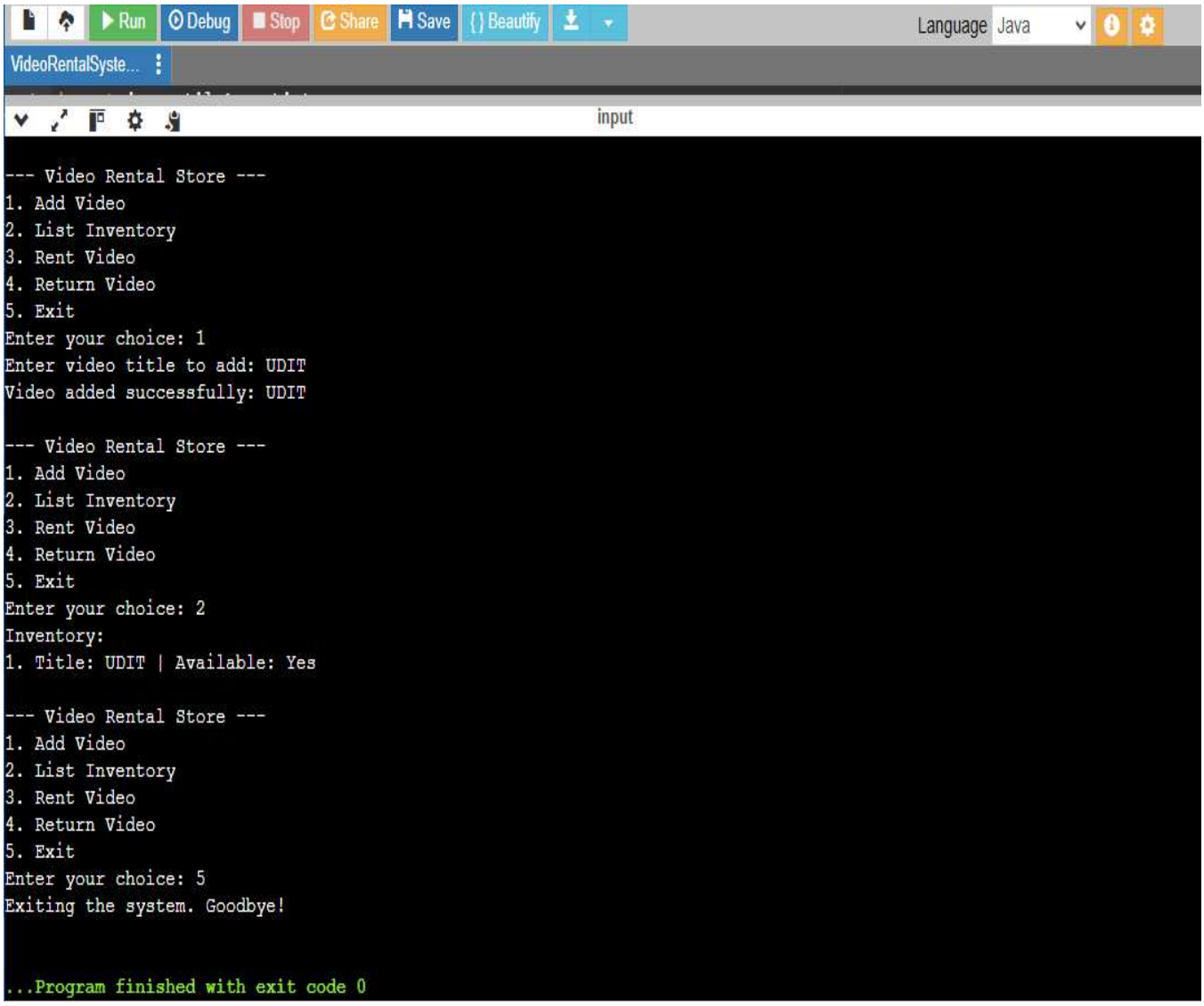
```
                video.returnVideo();
                System.out.println("Youreturned:"+title);
            }else {
                System.out.println("Error:Videowasnotrented.");
            }
            return;
        }
    }
    System.out.println("Error:Videonotfoundininventory.");
  }
}

publicclassVideoRentalSystem{
  public static void main(String[] args) {
    VideoStore store = new VideoStore();
    Scannerscanner=newScanner(System.in);
    while (true) {
      System.out.println("\n---VideoRentalStore---");
      System.out.println("1. Add Video");
      System.out.println("2. List Inventory");
      System.out.println("3. Rent Video");
      System.out.println("4. Return Video");
      System.out.println("5. Exit");
      System.out.print("Enter your choice: ");
      intchoice=-1;
      if (scanner.hasNextInt()) {
        choice=scanner.nextInt();
      }else {
        System.out.println("Invalidchoice.Pleaseenteranumber.");
        scanner.next();
        continue;
      }
      scanner.nextLine();
```

```
            switch(choice){ case
                1:
                    System.out.print("Enter video title to add: ");
                    StringtitleToAdd=scanner.nextLine().trim();
                    store.addVideo(titleToAdd);
                    break;
                case 2:
                    store.listInventory();
                    break;
                case3:
                    System.out.print("Enter video title to rent: ");
                    StringtitleToRent=scanner.nextLine().trim();
                    store.rentVideo(titleToRent);
                    break;
                case 4:
                    System.out.print("Enter video title to return: ");
                    StringtitleToReturn=scanner.nextLine().trim();
                    store.returnVideo(titleToReturn);
                    break;
                case 5:
                    System.out.println("Exitingthesystem.Goodbye!"); scanner.close();
                    return;

                default:
                    System.out.println("Invalidchoice.Pleasetryagain.");
            }
        }
    }
}
```

4. Output



5. Learning Outcomes

- **Object-Oriented Design:** Learn to create and use classes for real-world entities.
- **Core Programming Skills:** Practice loops, conditionals, and methods for inventory operations.
- **Data Structure Usage:** Use `ArrayList` to manage dynamic data effectively.
- **User-Friendly Systems:** Design intuitive interfaces and handle errors smoothly.