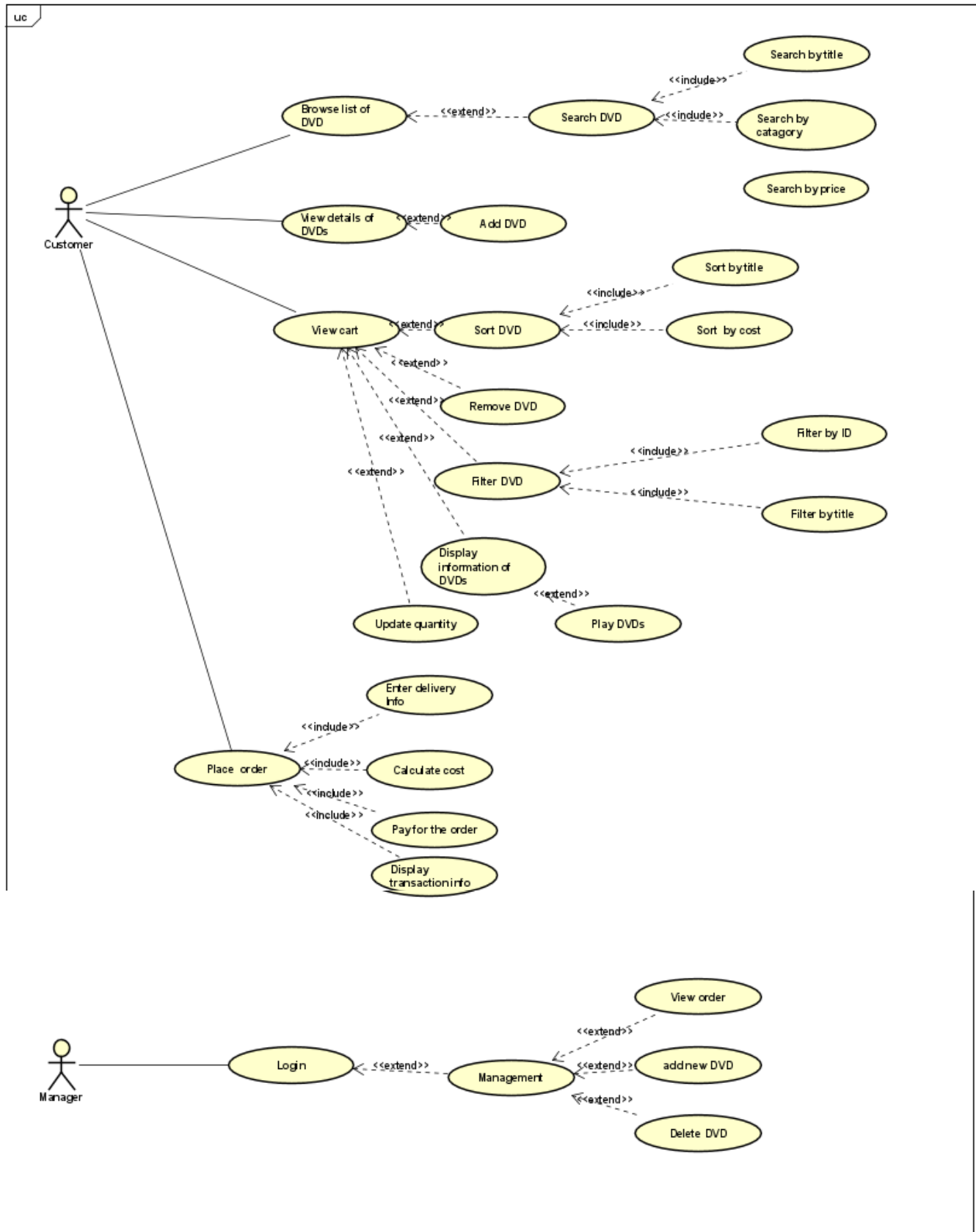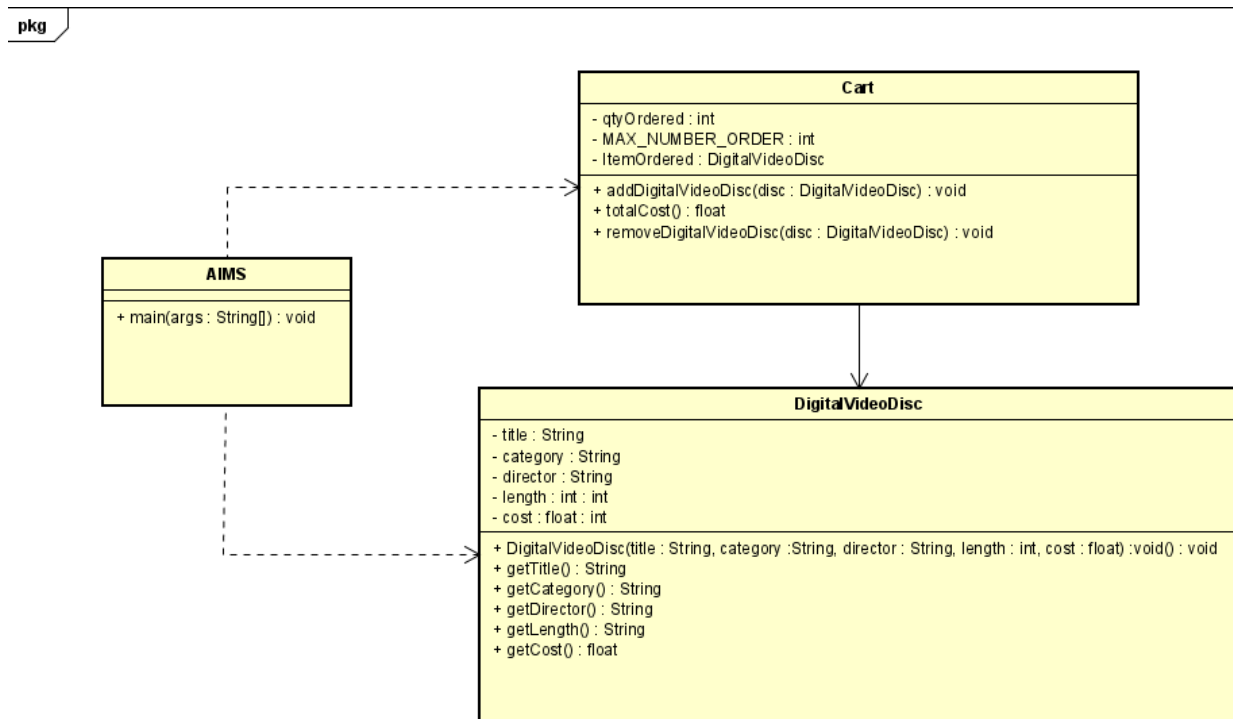# Báo cáo thực hành Lập trình hướng đội tượng Lab 2
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1. Use case diagram:

2. Class Diagram:

3. Source code chương trình:

a) AIMS.java:

```java
public class AIMS {
    public static void main(String[] args) {

        Cart anOrder = new Cart();

        //Thêm đĩa vào giỏ hàng
        DigitalVideoDisc dvd1 = new DigitalVideoDisc(title:"Tam Quoc Dien Nghia", category:"Tieu Thuyet",
            director:"Vuong Phu Lam", length:87, cost:19.95f);
        anOrder.addDigitalVideoDisc(dvd1);

        DigitalVideoDisc dvd2 = new DigitalVideoDisc(title:"Di giua troi ruc ro", category:"Tinh cam",
            director:"Do Thanh Son", length:87, cost:24.95f);
        anOrder.addDigitalVideoDisc(dvd2);

        DigitalVideoDisc dvd3 = new DigitalVideoDisc(title:"Bo gia", category:"Phim hai", cost:18.99f);
        anOrder.addDigitalVideoDisc(dvd3);

        //Kiểm tra khi chưa thực hiện hàm xóa
        System.out.println("Total cost is " + '\n' + anOrder.totalCost());

        //Kiểm tra đã thực hiện hàm xóa
        anOrder.removeDigitalVideoDisc(dvd2);
        System.out.printf(format:"Total cost is: %.2f", anOrder.totalCost());
    }
}
```

b) Cart.java:

```java
//Class "Cart" source code
package org.example;

public class Cart {
    public static final int MAX_NUMBERS_ORDERED = 20;
    private DigitalVideoDisc itemsOrdered[] = new DigitalVideoDisc[MAX_NUMBERS_ORDERED];
    private int qtyOrdered;

    public int addDigitalVideoDisc(DigitalVideoDisc disc) {
        if (qtyOrdered == MAX_NUMBERS_ORDERED) {
            System.out.println(x:"The cart is almost full. Can't add more disc");
            return 0;
        } else {
            itemsOrdered[qtyOrdered] = disc;
            qtyOrdered++;
            System.out.println("The DVD " + '\"' + disc.getTitle() + '\"' + " have been added!");
            return 1;
        }
    }

    public int removeDigitalVideoDisc(DigitalVideoDisc disc) {
        if (itemsOrdered[0] == null) {
            System.out.println(x:"Your cart is empty!");
            return 0;
        }
        for (int i = 0; i < qtyOrdered; i++) {
            if (itemsOrdered[i].equals(disc)) {
                for (int j = i; j < qtyOrdered - 1; j++) {
                    itemsOrdered[i] = itemsOrdered[i + 1];
                }
                itemsOrdered[qtyOrdered - 1] = null;
                qtyOrdered--;
                System.out.println("Remove DVD " + '\"' + disc.getTitle() + '\"' + " successfully!");
                return 1;
            }
        }
        System.out.println(x:"No DVD match!");
        return 0;
    }

    public float totalCost() {
        float sum = 0.0f;
        for (int i = 0; i < qtyOrdered; i++) {
            sum += itemsOrdered[i].getCost();
        }
        return sum;
    }
}
```

c) DigitalVideoDisc.java:

```java
//Class "DigitalVideoDisc" source code
package org.example;
public class DigitalVideoDisc {
    private String title;
    private String category;
    private String director;
    private int length;
    private float cost;

    public DigitalVideoDisc(String title) {
        super();
        this.title = title;
    }

    public DigitalVideoDisc(String title, String category, float cost) {
        this.title = title;
        this.category = category;
        this.cost = cost;
    }

    public DigitalVideoD  String director
        this.title = tit
        this.category =   String director - org.example.DigitalVideoDisc.DigitalVideoDisc(String, String, String, float)
        this.director = director;
        this.cost = cost;
    }

    public DigitalVideoDisc(String title, String category, String director, int length, float cost) {
        this.title = title;
        this.category = category;
        this.director = director;
        this.length = length;
        this.cost = cost;
    }


    public String getTitle() { return title; }

    public String getCategory() { return category; }

    public String getDirector() { return director; }

    public int getLength() { return length; }

    public float getCost() { return cost; }
}
```

4. Kết quả chương trình:

 a) Chạy chương trình khi chưa thêm/bớt gì:

```
PS C:\JAVA PRJ\MusicDiscStore>
PS C:\JAVA PRJ\MusicDiscStore>  c:; cd 'c:\JAVA F
iscStore\bin' 'org.example.AIMS'
The DVD "Tam Quoc Dien Nghia" have been added!
The DVD "Di giua troi ruc ro" have been added!
The DVD "Bo gia" have been added!
Total cost is
63.89
Remove DVD "Di giua troi ruc ro" successfully!
Total cost is: 38.94
PS C:\JAVA PRJ\MusicDiscStore>
```

b) Khi xóa đĩa dvd3:

```
anOrder.removeDigitalVideoDisc(dvd3);
System.out.printf(format:"Total cost is: %.2f", anOrder.totalCost());
```

```
The DVD "Tam Quoc Dien Nghia" have been added!
The DVD "Di giua troi ruc ro" have been added!
The DVD "Bo gia" have been added!
Total cost is
63.89
Remove DVD "Bo gia" successfully!
Total cost is: 44.90
PS C:\JAVA PRJ\MusicDiscStore>
```

c) Khi xóa dvd1 và dvd2:

```
anOrder.removeDigitalVideoDisc(dvd1);
anOrder.removeDigitalVideoDisc(dvd2);
System.out.printf(format:"Total cost is: %.2f", anOrder.totalCost());
```

```
The DVD "Tam Quoc Dien Nghia" have been added!
The DVD "Di giua troi ruc ro" have been added!
The DVD "Bo gia" have been added!
Total cost is
63.89
Remove DVD "Tam Quoc Dien Nghia" successfully!
Remove DVD "Di giua troi ruc ro" successfully!
Total cost is: 24.95
PS C:\JAVA PRJ\MusicDiscStore>
```

d) Khi xóa nhiều hơn 3 đĩa:

```
anOrder.removeDigitalVideoDisc(dvd3);
anOrder.removeDigitalVideoDisc(dvd2);
anOrder.removeDigitalVideoDisc(dvd1);
anOrder.removeDigitalVideoDisc(dvd3);


System.out.printf(format:"Total cost is: %.2f", anOrder.totalCost());
```

```
Remove DVD "Bo gia" successfully!
Remove DVD "Di giua troi ruc ro" successfully!
Remove DVD "Tam Quoc Dien Nghia" successfully!
Your cart is empty!
Total cost is: 0.00
PS C:\JAVA PRJ\MusicDiscStore>
```