

ĐẠI HỌC BÁCH KHOA HÀ NỘI
TRƯỜNG CÔNG NGHỆ THÔNG TIN VÀ TRUYỀN THÔNG

----- * -----



BÁO CÁO THỰC HÀNH LAP4
MÔN HỌC: LẬP TRÌNH HƯỚNG ĐỐI TƯỢNG

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Contents

1. Additional requirements of AIMS	3
2. Creating the Book class.....	3
3. Creating the abstract Media class	5
4. Creating the CompactDisc class.....	8
4.1. Create the Disc class extending the Media class.....	9
4.2. Create the Track class which models a track on a compact disc and will store information including the title and length of the track.....	10
4.3. Open the CompactDisc class.....	11
5. Create the Playable interface.....	12
6. Update the Cart class to work with Media	14
7. Update the Store class to work with Media	16
8. Constructors of whole classes and parent classes.....	16
9. Unique item in a list	16
10. Polymorphism with toString() method	17
11. Sort media in the cart.....	19
12. Create a complete console application in the Aims class	21
12.1 Create showMenu.....	21
12.1.1 Option “1. View store”	22
12.1.2 Option “2. Update store”	28
12.1.3 Option “3. See current cart”	31
12.2 Demo.....	32
12.2.1 Add new media	32
12.2.2 Remove a media from store	33
12.2.3 Play a media by “See a media’s details”	33
12.2.4 Add a media and see current the cart	34
12.2.5 Play a media	35

1. Additional requirements of AIMS

Starting from this lab, you extend the AIMS system that you created in the previous exercises to allow customer to order 2 new types of media: books and CD.

A book's information includes: id, title, category, cost and list of authors.

A CD's information includes: id, title, category, artist, director, track list and price. Additionally, each track is unique in a CD with its own title and length. The length of a CD is sum of the lengths of its tracks.

When a user sees the details of a media in the store, the information displayed depends on the type of media.

- For books, the system shows their title, category, author list, the content length (i.e., the number of tokens).
- For CDs, the system displays the CD's information (i.e. CD title, category, artist, director, CD length, and the cost for the CD) and then displays the information of all the tracks in that CD.
- For DVDs, the system displays the DVD's information (i.e. DVD title, category, director, DVD length, and the cost for the DVD).

Additionally, the user can choose to play some media when browsing the list of media in the store or seeing the current cart. For simplicity, we establish the way the system plays a media is as follows: When a CD is played, the system displays the CD information (i.e., CD title and CD length) and plays all the tracks of the CD. To play a track, the system displays the track's name and its length. Similarly, a DVD can also be played, i.e., the system displays the title and length of the DVD. If a DVD or track has the length 0 or less, the system must notify the user that the track, the DVD or the CD of that track cannot be played.

2. Creating the **Book** class

Add fields to the Book class

- To store the information about a **Book**, the class requires five fields: an **int** field **id**, **String** fields **title** and **category**, a **float** field **cost** and an **ArrayList** of **authors**. You will want to make these fields private, with public accessor methods for all but the **authors** field.

```
1  /*
2   * Họ và tên: Phan Thế Anh
3   * MSSV: 20204941
4   * Mã lớp: 721428
5   */
6
7  package hust.soict.dsai.aims.media;
8  import java.util.ArrayList;
9
10 public class Book {
11     // Create attribute
12     private String title;
13     private String category;
14     private float cost;
15     private int id;
16     private List<String> authors = new ArrayList<String>(); // ArrayList contain author
17
18     // Create constructors
19     public Book() {
20     }
21 }
```

- Create Getter and Setter

```
* Họ và tên: Phan Thế Anh
* MSSV: 20204941
* Mã lớp: 721428
*/
// Tạo getter và setter
public String getTitle() {
    return title;
}

public void setTitle(String title) {
    this.title = title;
}

public String getCategory() {
    return category;
}

public void setCategory(String category) {
    this.category = category;
}

public float getCost() {
    return cost;
}

public void setCost(float cost) {
    this.cost = cost;
}

public int getId() {
    return id;
}

public void setId(int id) {
    this.id = id;
}
```

- Create **addAuthor(String authorName)** and **removeAuthor(String authorName)** for the **Book** class

```

/*
 * Họ và tên: Phan Thế Anh
 * MSSV: 20204941
 * Mã lớp: 721428
 */
// Create method
// Create addAuthor method
public void addAuthor(String authorName) {
    if (authors.contains(authorName)) // Check author is not already in the ArrayList
        System.out.println("Author was existed!!"); // Notificate fail
    else {
        authors.add(authorName); // Add author to ArrayList
        System.out.println("Add author was succeeded!!"); // Notificate success
    }
}

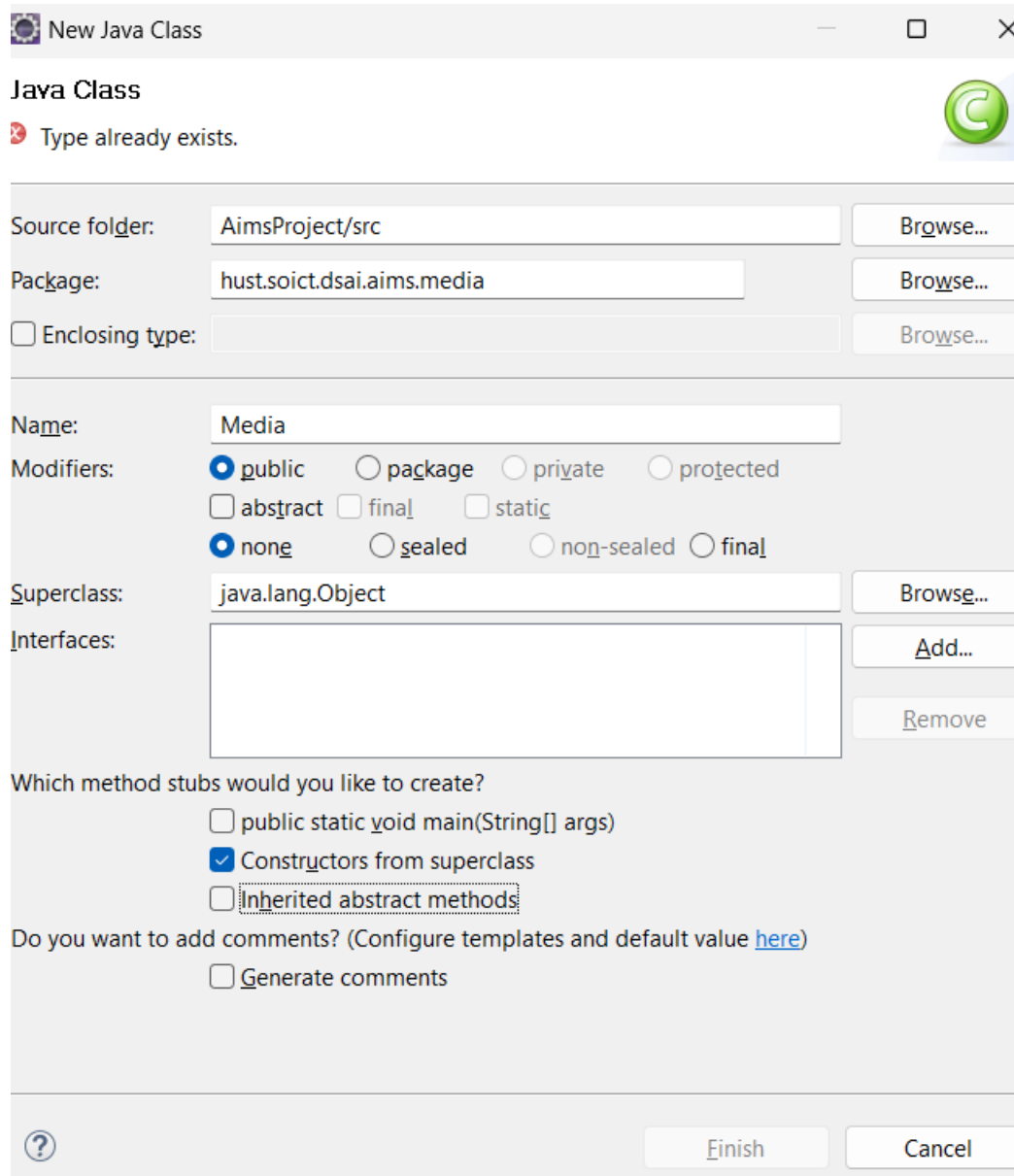
// Create removeAuthor method
public void removeAuthor(String authorName) {
    if (authors.contains(authorName)) { // Check author is already in the ArrayList
        boolean str = authors.remove(authorName); // Status of remove method
        System.out.println("Remove Author: " + str); // Notificate
    }
    else {
        System.out.println("Author does not exist!!!"); // Notificate
    }
}


```


3. Creating the abstract **Media** class

The **DigitalVideoDisc** and the **Book** classes have some fields in common namely id, title, category and cost. Here is a good opportunity to create a common superclass between the two, to eliminate the duplication of code.

- **Create the Media class**
 - Create class from Package Explorer

 New Java Class

Java Class 

 Type already exists.

Source folder:

Package:

☐ Enclosing type:

Name:

Modifiers: ☒ public ☐ package ☐ private ☐ protected
☐ abstract ☐ final ☐ static
☒ none ☐ sealed ☐ non-sealed ☐ final

Superclass:


Interfaces:

Which method stubs would you like to create?

☐ public static void main(String[] args)
☒ Constructors from superclass
☐ Inherited abstract methods

Do you want to add comments? (Configure templates and default value [here](#))

☐ Generate comments



- Add fields to the **Media** class

```

1  /*
2   * Họ và tên: Phan Thế Anh
3   * MSSV: 20204941
4   * Mã lớp: 721428
5   */
6  package hust.soict.dsai.aims.media;
7  import java.util.Comparator;
8
9
10
11 public abstract class Media {
12     // Create attribute
13     protected String title;
14     protected String category;
15     protected float cost;
16     protected int id;
17 }

```

Create getter and setter

```
* Họ và tên: Phan Thế Anh
* MSSV: 20204941
* Mã lớp: 721428
*/
// Tạo getter và setter
public String getTitle() {
    return title;
}

public void setTitle(String title) {
    this.title = title;
}

public String getCategory() {
    return category;
}

public void setCategory(String category) {
    this.category = category;
}

public float getCost() {
    return cost;
}

public void setCost(float cost) {
    this.cost = cost;
}

public int getId() {
    return id;
}

public void setId(int id) {
    this.id = id;
}
```

- Remove fields and methods from **Book** and **DigitalVideoDisc** classes

```

1  /*
2  *  Họ và tên: Phan Thế Anh
3  *  MSSV: 20204941
4  *  Mã lớp: 721428
5  */
6
7  package hust.soict.dsai.aims.media;
8  import java.util.ArrayList;
9
10
11  public class Book extends Media {
12      // Create attribute
13      private List<String> authors = new ArrayList<String>(); // Arraylist contain author
14
15      // Create constructors
16      public Book() {
17          // TODO Auto-generated constructor stub
18      }
19
20

```

- Do similarly for the **DigitalVideoDisc** class

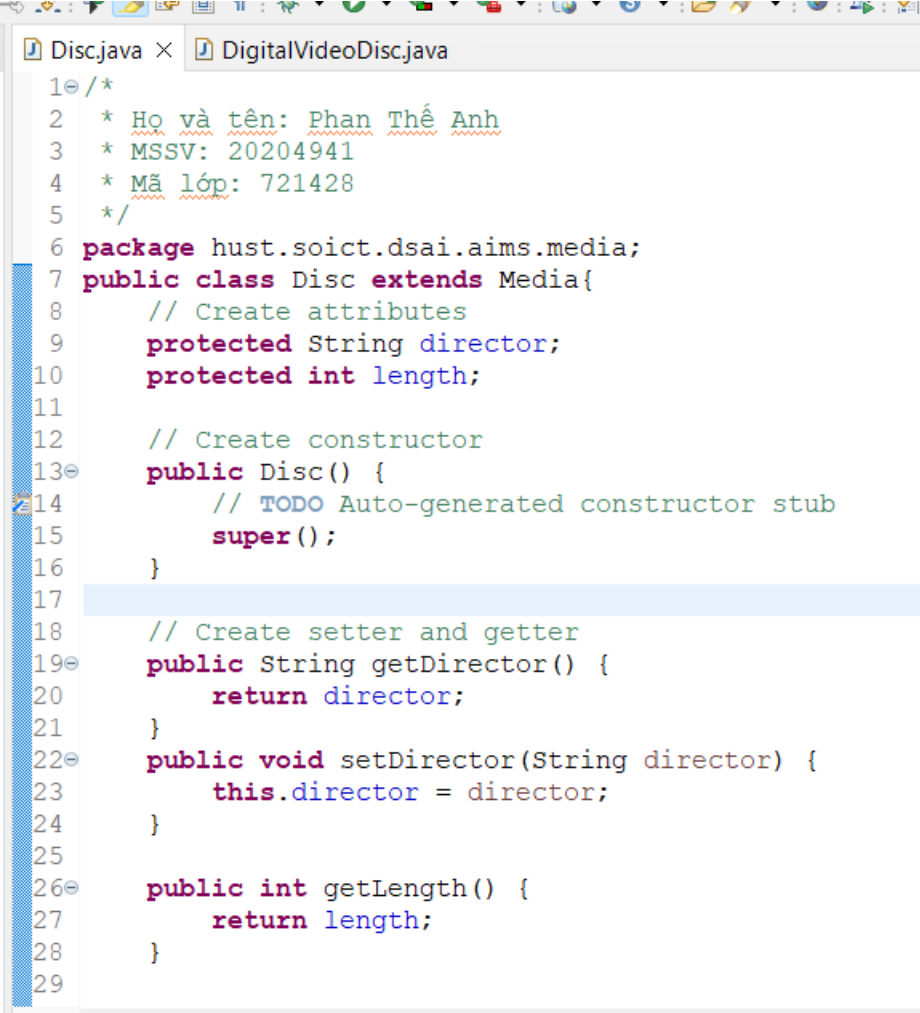
```

1  /*
2  *  Họ và tên: Phan Thế Anh
3  *  MSSV: 20204941
4  *  Mã lớp: 721428
5  *  Class: DigitalVideoDisc
6  */
7
8  package hust.soict.dsai.aims.media;
9
10  public class DigitalVideoDisc extends Disc implements Playable{
11      // Create attributes
12      private String director;
13      private int length;
14
15      // Create class attribute
16      private static int nbDigitalVideoDiscs = 0;
17
18      // Create method to update id & nbDigitalVideoDiscs
19      private void newObject() {
20          nbDigitalVideoDiscs++; // increase nbDigitalVideoDiscs
21          this.id = nbDigitalVideoDiscs; // id = nbDigitalVideoDiscs
22      }
23      // Create Constructor methods
24      // Default
25      public DigitalVideoDisc() {
26          super();
27          newObject();
28      }
29      // By title
30      public DigitalVideoDisc(String title) {

```

4. Creating the **CompactDisc** class

As with **DigitalVideoDisc** and **Book**, the **CompactDisc** class will extend **Media**, inheriting the **id**, **title**, **category** and **cost** fields and the associated methods.

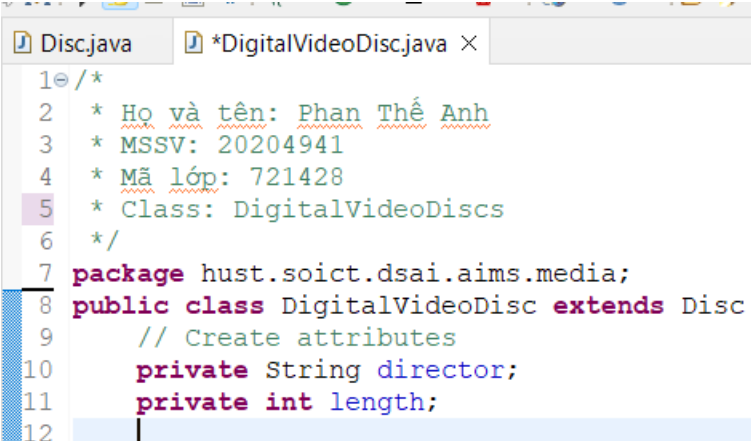
4.1. Create the **Disc** class extending the **Media** class


```

1  /*
2   * Họ và tên: Phan Thế Anh
3   * MSSV: 20204941
4   * Mã lớp: 721428
5   */
6  package hust.soict.dsai.aims.media;
7  public class Disc extends Media{
8      // Create attributes
9      protected String director;
10     protected int length;
11
12     // Create constructor
13     public Disc() {
14         // TODO Auto-generated constructor stub
15         super();
16     }
17
18     // Create setter and getter
19     public String getDirector() {
20         return director;
21     }
22     public void setDirector(String director) {
23         this.director = director;
24     }
25
26     public int getLength() {
27         return length;
28     }
29

```

- Make the **DigitalVideoDisc** extending the **Disc** class.

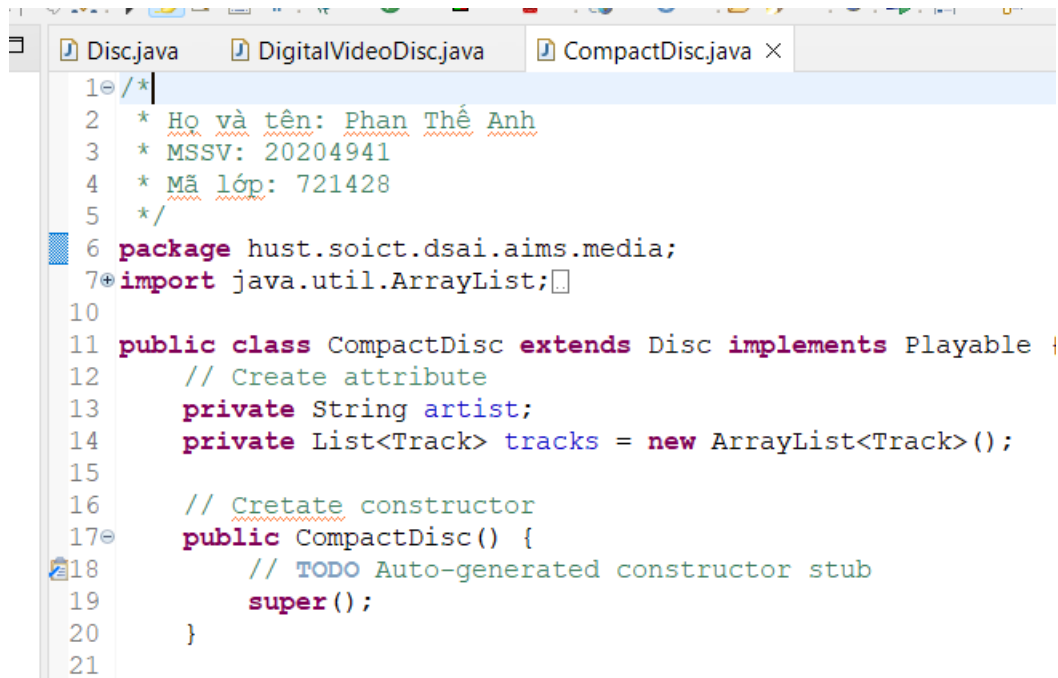


```

1  /*
2   * Họ và tên: Phan Thế Anh
3   * MSSV: 20204941
4   * Mã lớp: 721428
5   * Class: DigitalVideoDiscs
6   */
7  package hust.soict.dsai.aims.media;
8  public class DigitalVideoDisc extends Disc
9      // Create attributes
10     private String director;
11     private int length;
12

```

- Create the **CompactDisc** extending the **Disc** class. Save your changes.

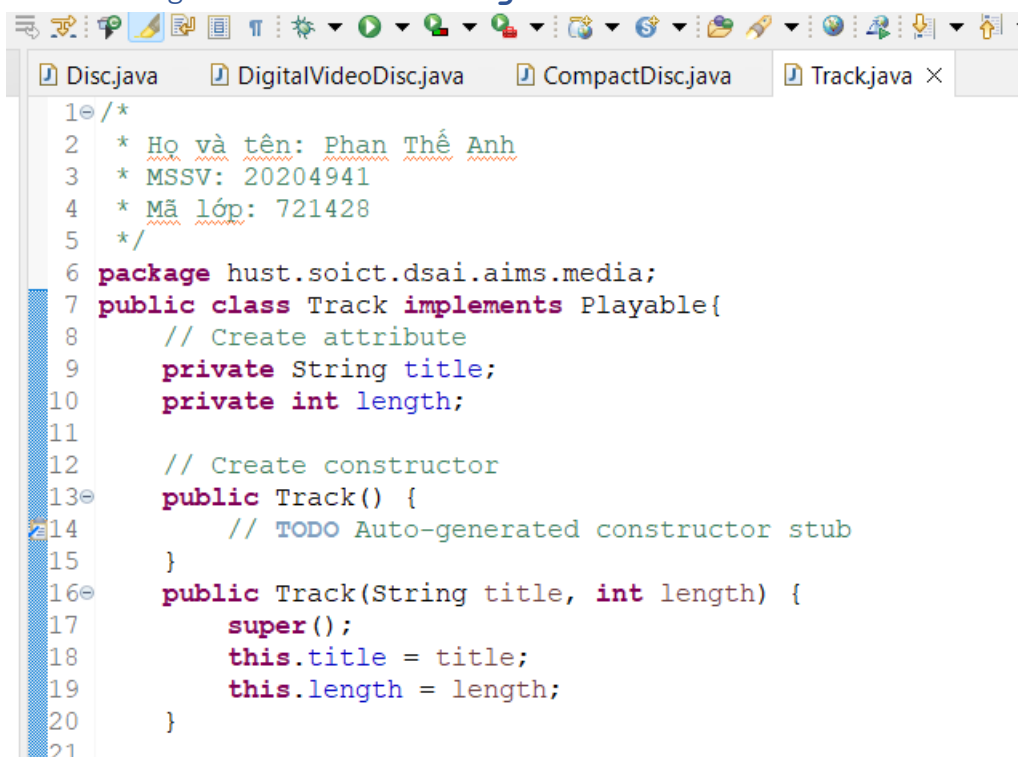


```

1  /*
2   * Họ và tên: Phan Thế Anh
3   * MSSV: 20204941
4   * Mã lớp: 721428
5   */
6  package hust.soict.dsai.aims.media;
7  import java.util.ArrayList;
8
9
10
11 public class CompactDisc extends Disc implements Playable {
12     // Create attribute
13     private String artist;
14     private List<Track> tracks = new ArrayList<Track>();
15
16     // Create constructor
17     public CompactDisc() {
18         // TODO Auto-generated constructor stub
19         super();
20     }
21 }

```

4.2. Create the **Track** class which models a track on a compact disc and will store information including the **title** and **length** of the track.



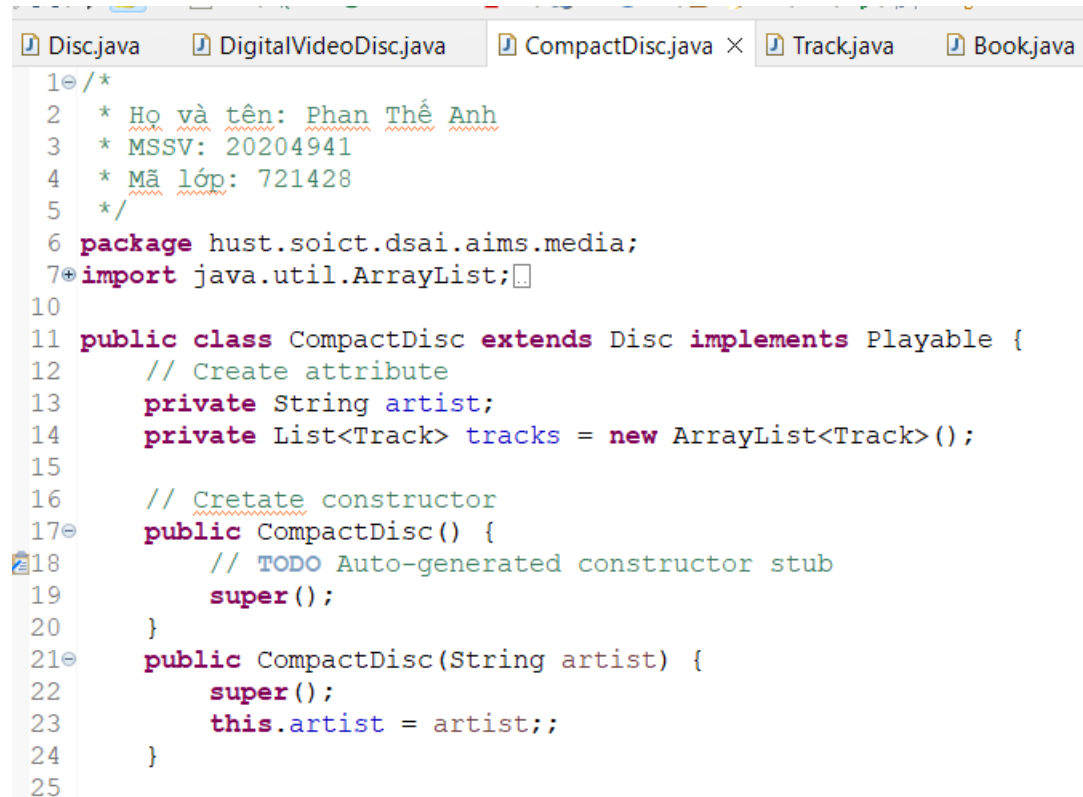
```

1  /*
2   * Họ và tên: Phan Thế Anh
3   * MSSV: 20204941
4   * Mã lớp: 721428
5   */
6  package hust.soict.dsai.aims.media;
7  public class Track implements Playable{
8     // Create attribute
9     private String title;
10    private int length;
11
12    // Create constructor
13    public Track() {
14        // TODO Auto-generated constructor stub
15    }
16    public Track(String title, int length) {
17        super();
18        this.title = title;
19        this.length = length;
20    }
21 }

```

```
32 // Create getter
33 public String getTitle() {
34     return title;
35 }
36
37 public int getLength() {
38     return length;
39 }
40
```

4.3. Open the **CompactDisc** class



```
Disc.java DigitalVideoDisc.java CompactDisc.java × Track.java Book.java
1 /*
2  * Họ và tên: Phan Thế Anh
3  * MSSV: 20204941
4  * Mã lớp: 721428
5  */
6 package hust.soict.dsai.aims.media;
7 import java.util.ArrayList;
10
11 public class CompactDisc extends Disc implements Playable {
12     // Create attribute
13     private String artist;
14     private List<Track> tracks = new ArrayList<Track>();
15
16     // Create constructor
17 public CompactDisc() {
18     // TODO Auto-generated constructor stub
19     super();
20 }
21 public CompactDisc(String artist) {
22     super();
23     this.artist = artist;;
24 }
25
```

```

25  /*
26   * Họ và tên: Phan Thế Anh
27   * MSSV: 20204941
28   * Mã lớp: 721428
29   */
30  // Create addTrack method
31  public void addTrack(Track track) {
32      if (tracks.contains(track)) // Check track is already in the ArrayList
33          System.out.println("Track was existed!!"); // Notificate
34      else {
35          tracks.add(track); // Add track to ArrayList
36          System.out.println("Add track was succeeded!!"); // Notificate success
37      }
38  }
39
40  // Create removeTrack method
41  public void removeTrack(Track track) {
42      if (tracks.contains(track)) { // Check track is already in the ArrayList
43          boolean str = tracks.remove(track); // Static of remove method
44          System.out.println("Remove track: " + str); // Notificate
45      }
46      else {
47          System.out.println("Track does not exist!!!"); // Notificate
48      }
49  }
50
51  // Create getLength method
52  public int getLength() {
53      int sum = 0; // Sum length
54      // The loop calculate sum
55      for (Iterator<Track> iterator = tracks.iterator(); iterator.hasNext();) {
56          Track track = (Track) iterator.next();
57          sum+=track.getLength(); // sum += length track
58      }
59      return sum;
60  }
61

```

5. Create the Playable interface

- Create **Playable** interface

```

1  /*
2   * Họ và tên: Phan Thế Anh
3   * MSSV: 20204941
4   * Mã lớp: 721428
5   */
6
7  package hust.soict.dsai.aims.media;
8  interface Playable {
9      public void play();
10 }
11

```

- Implement the **Playable** with **CompactDisc**, **DigitalVideoDisc** and **Track**

```

1  /*
2   * Họ và tên: Phan Thế Anh
3   * MSSV: 20204941
4   * Mã lớp: 721428
5   */
6  package hust.soict.dsai.aims.media;
7  import java.util.ArrayList;
10
11  public class CompactDisc extends Disc implements Playable {
12      // Create attribute
13      private String artist;
14      private List<Track> tracks = new ArrayList<Track>();
15
16  }
17
18  /*
19   * Họ và tên: Phan Thế Anh
20   * MSSV: 20204941
21   * Mã lớp: 721428
22   * Class: DigitalVideoDiscs
23   */
24  package hust.soict.dsai.aims.media;
25  public class DigitalVideoDisc extends Disc implements Playable{
26      // Create attributes
27      private String director;
28      private int length;
29
30      ..
31      ..
32  }
33
34  /*
35   * Họ và tên: Phan Thế Anh
36   * MSSV: 20204941
37   * Mã lớp: 721428
38   */
39  package hust.soict.dsai.aims.media;
40  public class Track implements Playable{
41      // Create attribute
42      private String title;
43      private int length;
44
45  }

```

- Implement **play()** for **DigitalVideoDisc**

```

/*
 * Họ và tên: Phan Thế Anh
 * MSSV: 20204941
 * Mã lớp: 721428
 */
@Override
public void play() {
    // TODO Auto-generated method stub
    // Inform title and length of DVD
    System.out.println("Playing DVD: " + this.getTitle());
    System.out.println("DVD length: " + this.getLength());
}

```

- Implement **play()** for **Track**

```

/*
 * Họ và tên: Phan Thế Anh
 * MSSV: 20204941
 * Mã lớp: 721428
 */
@Override
public void play() {
    // TODO Auto-generated method stub
    // Inform title and length Track
    System.out.println("Playing DVD: " + this.getTitle());
    System.out.println("DVD length: " + this.getLength());
}

```

- Implement **play()** for **CompactDisc**

```

/*
 * Họ và tên: Phan Thế Anh
 * MSSV: 20204941
 * Mã lớp: 721428
 */
@Override
public void play() {
    // TODO Auto-generated method stub
    // Loop through each track of the arraylist and call Track's play() method
    for (Iterator<Track> iterator = tracks.iterator(); iterator.hasNext();) {
        Track track = (Track) iterator.next();
        track.play(); // Call Track's play() method
    }
}

```

6. Update the **Cart** class to work with **Media**

- Recreate the **itemsOrdered** field, this time as an object **ArrayList** instead of an array.

```

/*
 * Họ và tên: Phan Thế Anh
 * MSSV: 20204941
 * Mã lớp: 721428
 */
package hust.soict.dsai.aims.cart;
import java.util.ArrayList;

public class Cart {
    // Create size of array
    public static final int MAX_NUMBERS_ORDERED = 20;
    // Create the array itemsOrdered
    private List<Media> itemsOrdered = new ArrayList<Media>();
}

```

- Create **addMedia()** and **removeMedia()** to replace **addDigitalVideoDisc()** and **removeDigitalVideoDisc()**

```

/*
 * Họ và tên: Phan Thế Anh
 * MSSV: 20204941
 * Mã lớp: 721428
 */
// Creatr method and & remove
// Create addMedia()
public void addMedia(Media media) {
    if (itemsOrdered.size() == MAX_NUMBERS_ORDERED) { // Check cart is full?
        System.out.println("Your cart is full!!"); // Notificate
    }
    else {
        itemsOrdered.add(media); // Add media to cart
        System.out.println("Add media was succeeded!!"); // Notificate
    }
}
// Create removeMedia()
public void removeMedia(Media media) {
    if (itemsOrdered.contains(media)) { // // Check media is not already in cart
        boolean str = itemsOrdered.remove(media); // Static of remove method
        System.out.println("Remove media: " + str); // Notificate
    }
    else {
        System.out.println("Media does not exist!!!"); // Notificate
    }
}
}

```

- Update the **totalCost()** method

```

/*
 * Họ và tên: Phan Thế Anh
 * MSSV: 20204941
 * Mã lớp: 721428
 */
// Create the method totalCost
public float totalCost() {
    //System.out.println("Total cost:");
    float sum = 0; // Total cost
    for (Iterator iterator = itemsOrdered.iterator(); iterator.hasNext();) {
        Media media = (Media) iterator.next();
        sum += media.getCost(); // sum + = cost of each media
    }
    return sum;
}
}

```

7. Update the **Store** class to work with **Media**

```

1  /*
2   * Họ và tên: Phan Thế Anh
3   * MSSV: 20204941
4   * Mã lớp: 721428
5   * Class: Store
6   */
7  package hust.soict.dsai.aims.store;
8  import java.util.ArrayList;
9
10
11
12  public class Store {
13      // Create an array of DVDs available in the store.
14      public static List<Media> itemsInStore = new ArrayList<Media>();
15
16      // Create method addDVD
17      public void addMedia(Media media) {
18          if (!itemsInStore.contains(media)) { // Check media is not already in store
19              itemsInStore.add(media); // Add media to store
20              System.out.println("Add media was succeeded!!"); // Notificate
21          }
22          else {
23              System.out.println("Media existed!!!"); // Notificate
24          }
25      }
26      // Create removeMedia method
27      public void removeMedia(Media media) {
28          if (itemsInStore.contains(media)) { // Check media is not already in store
29              boolean str = itemsInStore.remove(media); // Status of remove
30              System.out.println("Remove media: " + str); // Notificate
31          }
32          else {
33              System.out.println("Media does not exist!!!"); // Notificate
34          }
35      }
36  }

```

8. Constructors of whole classes and parent classes

9. Unique item in a list

- Override the boolean equals(Object o) of the Media

```

/*
 * Họ và tên: Phan Thế Anh
 * MSSV: 20204941
 * Mã lớp: 721428
 */
// override equals method
@Override
public boolean equals(Object o) {
    if (o instanceof Media) { // Check If the passing object is not an instance of Media
        return ((Media) o).getTitle() == this.getTitle(); // compare two object
    }
    return false;
}

```

Question: If the passing object is not an instance of Media, what happens?

Answer: it's Runtime error if Downcasting

- Override the boolean equals(Object o) of the Track

```

/*
 * Họ và tên: Phan Thế Anh
 * MSSV: 20204941
 * Mã lớp: 721428
 */
// override equals method
@Override
public boolean equals(Object o) {
    if (o instanceof Track) { // // Check If the passing object is not an instance of Track
        return ((Track) o).getTitle() == this.getTitle() &&
            ((Track) o).getLength() == this.getLength(); // Compare two object
    }
    return false;
}

```

10. Polymorphism with toString() method

- Iterate through the list and print out the information of the media by using toString() method.

```

63  /*
64  * Họ và tên: Phan Thế Anh
65  * MSSV: 20204941
66  * Mã lớp: 721428
67  * Class: Aims
68  */
69  public static void main(String[] args) {
70      List<Media> medias = new ArrayList<Media>();
71
72      // Create new DVD objects and add them to the cart
73      DigitalVideoDisc dvd = new DigitalVideoDisc(
74          "The Lion King", "Animation", "Roger Allers", 87, 24.95f);
75      // Create new book
76      Book book = new Book();
77      book.addAuthor("Anh");
78      // Create new CD
79      CompactDisc cd = new CompactDisc("Mot ngay dep troi");
80
81      // Add to the cart
82      medias.add(cd);
83      medias.add(book);
84      medias.add(dvd);
85      // Printf cart
86      for (Media media : medias) {
87          System.out.println(media.toString()); // printf
88      }
89  }
90  }
91

```

Console ×

<terminated> Aims [Java Application] C:\Program Files\Java\jdk-19\bin\javaw.exe (Dec 8, 2022, 8:11:03 PM – 8:11:07 PM) [pid: 11008]

Add author was succeeded!!

hust.soict.dsai.aims.media.CompactDisc@506e1b77

hust.soict.dsai.aims.media.Book@4fca772d

The Lion King - Animation - Roger Allers - 87 - 24.95

Explain: CD and Book is errored because toString is'n rewrite. So it printed address of CD and Book.

Solution: Rewrite toString method

```

    * Họ và tên: Phan Thế Anh
    * MSSV: 20204941
    * Mã lớp: 721428
    */
    @Override
    // Rewrite method toString of CD
    public String toString() {
        return artist + " " + title + " - " + category + " - " + director + " - " + length + " - " + cost;
    }

    @Override
    // Rewrite method toString of Book
    public String toString() {
        return authors + " " + title + " - " + category + " - " + " - " + cost;
    }

```

Result

```

62     }
63     /*
64     * Họ và tên: Phan Thế Anh
65     * MSSV: 20204941
66     * Mã lớp: 721428
67     * Class: Aims
68     */
69     public static void main(String[] args) {
70         List<Media> medias = new ArrayList<Media>();
71
72         // Creat new DVD objects and add them to the cart
73         DigitalVideoDisc dvd = new DigitalVideoDisc(
74             "The Lion King", "Animation", "Roger Allers", 87, 24.95f);
75         // Create new book
76         Book book = new Book();
77         book.addAuthor("Anh");
78         // Create new CD
79         CompactDisc cd = new CompactDisc("Mot ngay dep troi");
80
81         // Add to the cart
82         medias.add(cd);
83         medias.add(book);
84         medias.add(dvd);
85         // Printf cart
86         for (Media media : medias) {
87             System.out.println(media.toString()); // printf
88         }
89     }
90 }
91

```

```

Console x
<terminated> Aims [Java Application] C:\Program Files\Java\jdk-19\bin\javaw.exe (Dec 8, 2022, 8:22:09 PM – 8:22:11 PM) [pid: 4376]
Add author was succeeded!!
Mot ngay dep troi null - null - 0 - 0.0
[Anh] null - null - - 0.0
The Lion King - Animation - Roger Allers - 87 - 24.95

```

11. Sort media in the cart

Create `MediaComparatorByCostTitle` class

```
Disc.java DigitalVideo... CompactDisc... MediaCompara... MediaCompara... × Track.java Book.java
1 /*
2  * Ho và tên: Phan Thế Anh
3  * MSSV: 20204941
4  * Mã lớp: 721428
5  */
6 package hust.soict.dsai.aims.sort;
7
8 import java.util.Comparator;
9 import hust.soict.dsai.aims.media.Media;
10
11 public class MediaComparatorByCostTitle implements Comparator<Media>{
12
13     @Override
14     // Rewrite method sort to compare by cost then title
15     public int compare(Media o1, Media o2) {
16         // TODO Auto-generated method stub
17         if (Float.compare(o1.getCost(), o2.getCost()) == 0) { // Compare cost
18             return o1.getTitle().compareTo(o2.getTitle()); // Then compare title
19         }
20         else return Float.compare(o1.getCost(), o2.getCost());
21     }
22 }
23
24
```

Create `MediaComparatorByTitleCost` class

```
1 /*
2  * Ho và tên: Phan Thế Anh
3  * MSSV: 20204941
4  * Mã lớp: 721428
5  */
6 package hust.soict.dsai.aims.sort;
7
8 import java.util.Comparator;
9
10 public class MediaComparatorByTitleCost implements Comparator<Media> {
11
12     @Override
13     // Rewrite sort by title then cost
14     public int compare(Media o1, Media o2) {
15         // TODO Auto-generated method stub
16         if (o1.getTitle().compareTo(o2.getTitle()) == 0) { // Compare title
17             return Float.compare(o1.getCost(), o2.getCost()); // Then compare cost
18         }
19         return o1.getTitle().compareTo(o2.getTitle());
20     }
21 }
22
23
24
25
```

- Add the comparators as attributes of the `Media` class:

```

1  /*
2   * Họ và tên: Phan Thế Anh
3   * MSSV: 20204941
4   * Mã lớp: 721428
5   */
6   package hust.soict.dsai.aims.media;
7   import java.util.Comparator;
8   import Comparator.MediaComparatorByTitleCost;
9   import hust.soict.dsai.aims.sort.MediaComparatorByCostTitle;
10
11  public abstract class Media {
12      // Create attribute
13      protected String title;
14      protected String category;
15      protected float cost;
16      protected int id;
17
18      // Add the comparators as attributes of the Media class:
19      public static final Comparator<Media> COMPARE_BY_TITLE_COST =
20          new MediaComparatorByTitleCost();
21      public static final Comparator<Media> COMPARE_BY_COST_TITLE =
22          new MediaComparatorByCostTitle();
23

```

Result COMPARE_BY_COST_TITLE

```

70      * Họ và tên: Phan Thế Anh
71      * MSSV: 20204941
72      * Mã lớp: 721428
73      * Class: Aims
74      */
75      public static void main(String[] args) {
76          // Create medias l
77          List<Media> medias = new ArrayList<Media>();
78
79          // Creat new DVD objects and add them to the cart
80          DigitalVideoDisc dvd = new DigitalVideoDisc(
81              "B Lion King", "Animation", "Roger Allers", 87, 24.95f);
82          medias.add(dvd);
83          DigitalVideoDisc dvd1 = new DigitalVideoDisc(
84              "A Lion King", "Animation", "Roger Allers", 87, 24.95f);
85          medias.add(dvd1);
86          DigitalVideoDisc dvd2 = new DigitalVideoDisc(
87              "C Lion King", "Bnimation", "Roger Allers", 87, 10.95f);
88          medias.add(dvd2);
89          Collections.sort(medias, COMPARE_BY_COST_TITLE);
90          for (Media media : medias) {
91              System.out.println(media.toString()); // printf
92          }

```

Console ×

<terminated> Aims [Java Application] C:\Program Files\Java\jdk-19\bin\javaw.exe (Dec 8, 2022, 10:42:14 PM – 10:42:15 PM) [pid: 6224]

```

C Lion King - Bnimation - Roger Allers - 87 - 10.95
A Lion King - Animation - Roger Allers - 87 - 24.95
B Lion King - Animation - Roger Allers - 87 - 24.95

```

Result COMPARE_BY_TITLE_COST

```

70      * Họ và tên: Phan Thế Anh
71      * MSSV: 20204941
72      * Mã lớp: 721428
73      * Class: Aims
74      */
75      public static void main(String[] args) {
76          // Create medias l
77          List<Media> medias = new ArrayList<Media>();
78
79          // Creat new DVD objects and add them to the cart
80          DigitalVideoDisc dvd = new DigitalVideoDisc(
81              "B Lion King", "Animation", "Roger Allers", 87, 24.95f);
82          medias.add(dvd);
83          DigitalVideoDisc dvd1 = new DigitalVideoDisc(
84              "A Lion King", "Animation", "Roger Allers", 87, 24.95f);
85          medias.add(dvd1);
86          DigitalVideoDisc dvd2 = new DigitalVideoDisc(
87              "A Lion King", "Bnimation", "Roger Allers", 87, 10.95f);
88          medias.add(dvd2);
89          // Collections.sort(medias, COMPARE_BY_COST_TITLE);
90          Collections.sort(medias, COMPARE_BY_TITLE_COST);
91          for (Media media : medias) {
92              System.out.println(media.toString()); // printf
93          }
94      }

```

```

<terminated> Aims [Java Application] C:\Program Files\Java\jdk-19\bin\javaw.exe (Dec 8, 2022, 10:44:14 PM - 10:44:14 PM) [f
A Lion King - Bnimation - Roger Allers - 87 - 10.95
A Lion King - Animation - Roger Allers - 87 - 24.95
B Lion King - Animation - Roger Allers - 87 - 24.95

```

12. Create a complete console application in the Aims class

12.1 Create showMenu

```

54      /*
55      * Họ và tên: Phan Thế Anh
56      * MSSV: 20204941
57      * Mã lớp: 721428
58      */
59      public static void showMenu() {
60          System.out.println("AIMS: ");
61          System.out.println("-----");
62          System.out.println("1. View store");
63          System.out.println("2. Update store");
64          System.out.println("3. See current cart");
65          System.out.println("0. Exit");
66          System.out.println("-----");
67          System.out.println("Please choose a number 0-1-2-3");
68      }

```

```

2
3 public class Aims {
4     public static Cart myCart = new Cart(); // My cart
5     public static Store myStore = new Store(); // My store
6     public static void main(String[] args) {
7         while (true) {
8             showMenu(); // Menu
9             Scanner InputUser = new Scanner(System.in); // Input
10            int choose = InputUser.nextInt();
11            switch (choose) { // Check the choose of user
12                case 1: {
13                    storeMenu.StoreMenu();
14                    break;
15                }
16                case 2: {
17                    updateStore.UpdateStore();
18                    break;
19                }
20                case 3: {
21                    myCart.listCart();
22                    break;
23                }
24                case 0: {
25                    System.out.println("Thank for use my program!!");
26                    return;
27                }
28                default:
29                    throw new IllegalArgumentException("Unexpected value: " + choose);
30            }
31        }
32    }
33 }

```

12.1.1 Option “1. View store”

Create View Store

```

/*
 * Họ và tên: Phan Thế Anh
 * MSSV: 20204941
 * Mã lớp: 721428
 */
// Menu of storeMenu
public static void menu() {
    System.out.println("Options: ");
    System.out.println("-----");
    System.out.println("1. See a media's details");
    System.out.println("2. Add a media to cart");
    System.out.println("3. Play a media");
    System.out.println("4. See current cart");
    System.out.println("0. Back");
    System.out.println("-----");
    System.out.println("Please choose a number 0-1-2-3-4");
}

```

```

1 /*
2  * Họ và tên: Phan Thế Anh
3  * MSSV: 20204941
4  * Mã lớp: 721428
5  */
6 package hust.soict.dsai.aims.menu;
7
8 import java.util.Iterator;
9
10 // Store menu
11 public class storeMenu {
12     public static void StoreMenu() {
13         while (true) {
14             menu();
15             Scanner InputUser = new Scanner(System.in); // The choose of user
16             int choose = InputUser.nextInt();
17             switch (choose) { // Check user's choose
18                 case 1: {
19                     mediaDetailsMenu.MediaDetailsMenu(); // The choose first
20                     break;
21                 }
22                 case 2: {
23                     Aims.myStore.listStore(); // List store
24                     addToCart(getMediaByTitle()); // Add media to Store if true
25                     break;
26                 }
27                 case 3: {
28                     Aims.myStore.listStore(); // List Store
29                     playAMedia(getMediaByTitle()); // Play a media
30                     break;
31                 }
32                 case 4: {
33                     Aims.myCart.listCart(); // list the cart
34                     break;
35                 }
36                 case 0: {
37                     return; // Back
38                 }
39                 default:
40                     throw new IllegalArgumentException("Unexpected value: " + choose);
41             }
42         }
43     }
44 }

```

12.1.1.1" Option "1. See a media's details"

```

/*
 * Họ và tên: Phan Thế Anh
 * MSSV: 20204941
 * Mã lớp: 721428
 */
case 1: {
    mediaDetailsMenu.MediaDetailsMenu(); // Show media detail
    break;
}

```

```

/*
 * Họ và tên: Phan Thế Anh
 * MSSV: 20204941
 * Mã lớp: 721428
 */
// Menu
private static void menu() {
    System.out.println("Options: ");
    System.out.println("-----");
    System.out.println("1. Add to cart");
    System.out.println("2. Play");
    System.out.println("0. Exit");
    System.out.println("-----");
    System.out.println("Please choose a number 0-1-2");
}
}

```

Aimsjava storeMenu.java updateStore... mediaDetailsMenu.java CartMenu.java Cart.java Item.java Store.java

```

1 /*
2  * Họ và tên: Phan Thế Anh
3  * MSSV: 20204941
4  * Mã lớp: 721428
5  */
6 package hust.soict.dsai.aims.menu;
7
8 import java.util.Scanner;
9 import hust.soict.dsai.aims.media.Media;
10 public class mediaDetailsMenu {
11     public static void mediaDetailsMenu() {
12         while (true) {
13             Media media = storeMenu.getMediaByTitle(); // Get a media from the store by title
14             if (media == null) { // Check is null
15                 return ;
16             }
17             menu();
18             Scanner InputUser = new Scanner(System.in);
19             int choose = InputUser.nextInt(); // Get the choose of user
20             switch (choose) { // Check user's choose
21                 case 1: {
22                     storeMenu.addToCart(media); // Add a media to the Cart
23                     break;
24                 }
25                 case 2: {
26                     storeMenu.playAMedia(media); // Play a media
27                     break;
28                 }
29                 case 0: {
30                     return;
31                 }
32                 default:
33                     throw new IllegalArgumentException("Unexpected value: " + choose);
34             }
35         }
36     }
37 }

```

- The function get a media from store by title


```

/*
 * Họ và tên: Phan Thế Anh
 * MSSV: 20204941
 * Mã lớp: 721428
 */
// The function to get a media by title
public static Media getMediaByTitle() {
    Scanner InputUser = new Scanner(System.in);
    System.out.println("Please enter title: "); // Input media by title
    String mediaString = InputUser.nextLine();
    for (Media iterable_element : Aims.myStore.itemsInStore) {
        if (iterable_element.getTitle().contains(mediaString)) {
            return iterable_element;
        }
    }
    System.out.println("Not find media!!"); // Notification
    return null;
}

```

- Option “Add to cart”

```

/*
 * Họ và tên: Phan Thế Anh
 * MSSV: 20204941
 * Mã lớp: 721428
 */
// The function to add a media to the cart
public static void addToCart(Media media) {
    if (media != null) { // Check media
        Aims.myCart.addMedia(media); // Add media to the cart
        System.out.println("Done!!"); // Notification
    }
}

```

- Option “Play”

```

/*
 * Họ và tên: Phan Thế Anh
 * MSSV: 20204941
 * Mã lớp: 721428
 */
// The function to play a media
public static void playAMedia(Media media) {
    if (media instanceof DigitalVideoDisc) { // Check is DVD
        DigitalVideoDisc DVD = (DigitalVideoDisc) media; // Downcasting
        DVD.play(); // play DVD
    }
    else if (media instanceof CompactDisc) { // Check CD
        CompactDisc CD = (CompactDisc) media; // Downcasting
        CD.play(); // Play CD
    }
    else {
        System.out.println("Can't play this media!!"); // else notification
    }
}
}

```

12.1.1.2: Option "2. Add a media to cart

```

/*
 * Họ và tên: Phan Thế Anh
 * MSSV: 20204941
 * Mã lớp: 721428
 */
case 2: {
    Aims.myStore.listStore(); // List store
    addToCart(getMediaByTitle()); // Add media to Store if true
    break;
}

/*
 * Họ và tên: Phan Thế Anh
 * MSSV: 20204941
 * Mã lớp: 721428
 */
// The function to add a media to the cart
public static void addToCart(Media media) {
    if (media != null) { // Check media
        Aims.myCart.addMedia(media); // Add media to the cart
        System.out.println("Done!!"); // Notification
    }
}
}

```

```

/*
 * Họ và tên: Phan Thế Anh
 * MSSV: 20204941
 * Mã lớp: 721428
 */
// The function to get a media by title
public static Media getMediaByTitle() {
    Scanner InputUser = new Scanner(System.in);
    System.out.println("Please enter title: "); // Input media by title
    String mediaString = InputUser.nextLine();
    for (Media iterable_element : Aims.myStore.itemsInStore) {
        if (iterable_element.getTitle().contains(mediaString)) {
            return iterable_element;
        }
    }
    System.out.println("Not find media!!"); // Notification
    return null;
}

```

12.1.1.3: Option "3. Play a media"

```

}
/*
 * Họ và tên: Phan Thế Anh
 * MSSV: 20204941
 * Mã lớp: 721428
 */
case 3: {
    Aims.myStore.listStore(); // List Store
    playAMedia(getMediaByTitle()); // Play a media
    break;
}

/*
 * Họ và tên: Phan Thế Anh
 * MSSV: 20204941
 * Mã lớp: 721428
 */
// The method to list store
public void listStore() {
    // The loop to printf each element
    for (Iterator iterator = itemsInStore.iterator(); iterator.hasNext();) {
        Media media = (Media) iterator.next();
        System.out.println(media);
    }
}

```

```

/*
 * Họ và tên: Phan Thế Anh
 * MSSV: 20204941
 * Mã lớp: 721428
 */
// The function to play a media
public static void playAMedia(Media media) {
    if (media instanceof DigitalVideoDisc) { // Check is DVD
        DigitalVideoDisc DVD = (DigitalVideoDisc) media; // Downcasting
        DVD.play(); // play DVD
    }
    else if (media instanceof CompactDisc) { // Check CD
        CompactDisc CD = (CompactDisc) media; // Downcasting
        CD.play(); // Play CD
    }
    else {
        System.out.println("Can't play this media!!"); // else notification
    }
}
}

```

12.1.1.4: Option “4. See current cart”

```

/*
 * Họ và tên: Phan Thế Anh
 * MSSV: 20204941
 * Mã lớp: 721428
 */
case 4: {
    Aims.myCart.listCart(); // list the cart
    break;
}

/*
 * Họ và tên: Phan Thế Anh
 * MSSV: 20204941
 * Mã lớp: 721428
 */
// The method to list store
public void listStore() {
    // The loop to printf each element
    for (Iterator iterator = itemsInStore.iterator(); iterator.hasNext();) {
        Media media = (Media) iterator.next();
        System.out.println(media);
    }
}
}

```

12.1.2 Option “2. Update store”

```

/*
 * Họ và tên: Phan Thế Anh
 * MSSV: 20204941
 * Mã lớp: 721428
 */
// Menu
public static void menu() {
    System.out.println("1. Add a media");
    System.out.println("2. Remove a media");
    System.out.println("0. Back");
}

```

```

Aims.java  storeMenu.java  updateStore... ×  mediaDetail...  cartMenu.java  Cart.java  Media.java  Stor
1 /*
2  * Họ và tên: Phan Thế Anh
3  * MSSV: 20204941
4  * Mã lớp: 721428
5  */
6 package hust.soict.dsai.aims.menu;
7 import java.util.Scanner;
8
9
10
11 public class updateStore {
12     // Main table
13     public static void UpdateStore() {
14         while (true) {
15             menu(); // Print menu
16             Scanner InputUser = new Scanner(System.in);
17             int choose = InputUser.nextInt(); // The choose of user
18             switch (choose) { // Check user's choose
19                 case 1: {
20                     addToStore(); // add a media
21                     break;
22                 }
23                 case 2: {
24                     Aims.myStore.removeMedia(storeMenu.getMediaByTitle()); // remove a media
25                     break;
26                 }
27                 case 0: {
28                     return;
29                 }
30                 default:
31                     throw new IllegalArgumentException("Unexpected value: " + choose);
32             }
33         }
34     }
35 }

```

12.1.2.1: Option "1. Add a media"

```

/*
 * Họ và tên: Phan Thế Anh
 * MSSV: 20204941
 * Mã lớp: 721428
 */
case 1: {
    addToStore(); // add a media
    break;
}

```

```

/*
 * Họ và tên: Phan Thế Anh
 * MSSV: 20204941
 * Mã lớp: 721428
 */
// The function to add a new media to store
public static void addToStore() {
    // Check type of media
    System.out.println("Type of media: ");
    System.out.println("1. CD");
    System.out.println("2. DVD");
    System.out.println("3. Book");
    Scanner InputUser = new Scanner(System.in);
    int choose = InputUser.nextInt();
    // Add a DVD
    if (choose == 2) {
        Aims.myStore.addMedia(DigitalVideoDisc.createNewDVD()); // Add to the store
    }
}

/*
 * Họ và tên: Phan Thế Anh
 * MSSV: 20204941
 * Mã lớp: 721428
 */
// The function to create a new DVD
public static DigitalVideoDisc createNewDVD() {
    DigitalVideoDisc dvd = new DigitalVideoDisc();
    Scanner inScanner = new Scanner(System.in);
    System.out.println("Please enter title: "); // Input title
    dvd.setTitle(inScanner.nextLine());
    System.out.println("Please enter catelogy: "); // Input catelogy
    dvd.setCategory(inScanner.nextLine());
    System.out.println("Please enter cost: "); // Input cost
    dvd.setCost(inScanner.nextFloat());
    System.out.println("Please enter ID: "); // Input ID
    dvd.setId(inScanner.nextInt());
    System.out.println("Please enter director: "); // Input director
    dvd.setDirector(inScanner.next());
    System.out.println("Please enter length: "); // Input length
    dvd.setLength(inScanner.nextInt());
    return dvd;
}

```

```

/*
 * Họ và tên: Phan Thế Anh
 * MSSV: 20204941
 * Mã lớp: 721428
 */
// Create method addDVD
public void addMedia(Media media) {
    if (!itemsInStore.contains(media)) { // Check media is not already in store
        itemsInStore.add(media); // Add media to store
        System.out.println("Add media was succeeded!!"); // Notificate
    }
    else {
        System.out.println("Media existed!!!"); // Notificate
    }
}
}

```

12.1.2.2: "Option "2. Remove a media"

```

}
/*
 * Họ và tên: Phan Thế Anh
 * MSSV: 20204941
 * Mã lớp: 721428
 */
case 2: {
    Aims.myStore.removeMedia(storeMenu.getMediaByTitle()); // remove a media
    break;
}

/*
 * Họ và tên: Phan Thế Anh
 * MSSV: 20204941
 * Mã lớp: 721428
 */
// Create removeMedia method
public void removeMedia(Media media) {
    if (itemsInStore.contains(media)) { // Check media is not already in store
        boolean str = itemsInStore.remove(media); // Status of remove
        System.out.println("Remove media: " + str); // Notificate
    }
    else {
        System.out.println("Media does not exist!!!"); // Notificate
    }
}
}

```

12.1.3 Option "3. See current cart"

```
,  
  
/*  
 * Họ và tên: Phan Thế Anh  
 * MSSV: 20204941  
 * Mã lớp: 721428  
 */  
case 3: {  
    myCart.listCart();  
    break;  
}  
  
/*  
 * Họ và tên: Phan Thế Anh  
 * MSSV: 20204941  
 * Mã lớp: 721428  
 */  
// List cart  
public void listCart() {  
    for (Iterator iterator = itemsOrdered.iterator(); iterator.hasNext();) {  
        Media media = (Media) iterator.next();  
        System.out.println(media);  
    }  
}
```

12.2 Demo

12.2.1 Add new media

The screenshot shows an IDE with two panes. The left pane displays the source code for `storeMenu.java`, and the right pane shows the console output.

Source Code (storeMenu.java):

```

1  /*
2   * Họ và tên: Phan Thế Anh
3   * MSSV: 20204941
4   * Mã lớp: 721428
5   */
6  package hust.soict.dsai.aims.menu;
7
8  import java.util.Iterator;
9  import java.util.Scanner;
10 import hust.soict.dsai.aims.*;
11 import hust.soict.dsai.aims.Aims;
12 import hust.soict.dsai.aims.media.Computer;
13 import hust.soict.dsai.aims.media.DVD;
14 import hust.soict.dsai.aims.media.Media;
15 import hust.soict.dsai.aims.store.Store;
16
17 // Store menu
18 public class storeMenu {
19     public static void StoreMenu() {
20         while (true) {
21             menu();
22             Scanner InputUser = new Scanner(System.in);
23             int choose = InputUser.nextInt();
24             switch (choose) {
25                 case 1: {
26                     mediaDetailsMenu.MediaDetailsMenu();
27                     break;
28                 }
29                 case 2: {
30                     Aims.myStore.listStore();
31                     addToCart(getMediaById(choose));
32                     break;
33                 }
34             }
35         }
36     }
37 }

```

Console Output:

```

Aims [Java Application] C:\Program Files\Java\jdk-19\bin
AIMS:
-----
1. View store
2. Update store
3. See current cart
0. Exit
-----
Please choose a number 0-1-2-3
2
Option:
1. Add a media
2. Remove a media
0. Back
1
Type of media:
1. CD
2. DVD
3. Book
2
Please enter title:
The
Please enter catalog:
Anh
Please enter cost:
2002
Please enter ID:
1
Please enter director:
test
Please enter length:
1
Add media was succeeded!!

```

12.2.2 Remove a media from store

The screenshot shows an IDE with two panes. The left pane displays the source code for `storeMenu.java`, and the right pane shows the console output.

Source Code (storeMenu.java):

```

1  /*
2   * Họ và tên: Phan Thế Anh
3   * MSSV: 20204941
4   * Mã lớp: 721428
5   */
6  package hust.soict.dsai.aims.menu;
7
8  import java.util.Iterator;
9  import java.util.Scanner;
10 import hust.soict.dsai.aims.*;
11 import hust.soict.dsai.aims.Aims;
12 import hust.soict.dsai.aims.media.Computer;
13 import hust.soict.dsai.aims.media.DVD;
14 import hust.soict.dsai.aims.media.Media;
15 import hust.soict.dsai.aims.store.Store;
16
17 // Store menu
18 public class storeMenu {
19     public static void StoreMenu() {
20         while (true) {
21             menu();
22             Scanner InputUser = new Scanner(System.in);
23             int choose = InputUser.nextInt();
24             switch (choose) {
25                 case 1: {
26                     mediaDetailsMenu.MediaDetailsMenu();
27                     break;
28                 }
29                 case 2: {
30                     Aims.myStore.listStore();
31                     addToCart(getMediaById(choose));
32                     break;
33                 }
34             }
35         }
36     }
37 }

```

Console Output:

```

Aims [Java Application] C:\Program Files\Java\jdk-19\bin
1
Add media was succeeded!!
Option:
1. Add a media
2. Remove a media
0. Back
2
Please enter title:
The
Remove media: true

```

12.2.3 Play a media by “See a media’s details”

The screenshot shows an IDE with two tabs: `storeMenu.java` and `updateStore...`. The `storeMenu.java` tab is active, displaying the following code:

```

1  /*
2   * Họ và tên: Phan Thế Anh
3   * MSSV: 20204941
4   * Mã lớp: 721428
5   */
6  package hust.soict.dsai.aims.menu;
7
8  import java.util.Iterator;
9  import java.util.Scanner;
10 import hust.soict.dsai.aims.*;
11 import hust.soict.dsai.aims.Aims;
12 import hust.soict.dsai.aims.media.Con
13 import hust.soict.dsai.aims.media.Dig
14 import hust.soict.dsai.aims.media.Mec
15 import hust.soict.dsai.aims.store.Sto
16
17 // Store menu
18 public class storeMenu {
19     public static void StoreMenu() {
20         while (true) {
21             menu();
22             Scanner InputUser = new S
23             int choose = InputUser.ne
24             switch (choose) { // Chec
25                 case 1: {
26                     mediaDetailsMenu.Med
27                     break;
28                 }
29
30                 case 2: {
31                     Aims.myStore.listStor
32                     addToCart(getMediaBy
33                     break;
34             }
35         }
36     }
37 }

```

The console window on the right shows the execution of the application:

```

Aims [Java Application] C:\Program Files\Java\jdk-19\bin\javaw.e
0
AIMS:
-----
1. View store
2. Update store
3. See current cart
0. Exit
-----
Please choose a number 0-1-2-3
1
Options:
-----
1. See a media's details
2. Add a media to cart
3. Play a media
4. See current cart
0. Back
-----
Please choose a number 0-1-2-3-4
1
Please enter title:
The
Options:
-----
1. Add to cart
2. Play
0. Exit
-----
Please choose a number 0-1-2
2
Playing DVD: The
DVD length: 1

```

12.2.4 Add a media and see current the cart

The screenshot shows an IDE with two tabs: `storeMenu.java` and `updateStore...`. The `storeMenu.java` tab is active, displaying the following code:

```

1  /*
2   * Họ và tên: Phan Thế Anh
3   * MSSV: 20204941
4   * Mã lớp: 721428
5   */
6  package hust.soict.dsai.aims.menu;
7
8  import java.util.Iterator;
9  import java.util.Scanner;
10 import hust.soict.dsai.aims.*;
11 import hust.soict.dsai.aims.Aims;
12 import hust.soict.dsai.aims.media.Com
13 import hust.soict.dsai.aims.media.Dig
14 import hust.soict.dsai.aims.media.Mec
15 import hust.soict.dsai.aims.store.Sto
16
17 // Store menu
18 public class storeMenu {
19     public static void StoreMenu() {
20         while (true) {
21             menu();
22             Scanner InputUser = new Scanner(System.in);
23             int choose = InputUser.nextInt();
24             switch (choose) { // Check user's choice
25                 case 1: {
26                     mediaDetailsMenu.MediaDetailsMenu();
27                     break;
28                 }
29                 case 2: {
30                     Aims.myStore.listStore(); // List all media in store
31                     addToCart(getMediaById()); // Add media to cart
32                     break;
33                 }
34             }
35         }
36     }
37 }

```

The console output shows the execution of the program:

```

Aims [Java Application] C:\Program Files\Java\jdk-19\bin\java
-----
Please choose a number 0-1-2-3-4
4
The - Anh - test - 1 - 2002.0
Options:
-----
1. See a media's details
2. Add a media to cart
3. Play a media
4. See current cart
0. Back
-----
Please choose a number 0-1-2-3-4
2
The - Anh - test - 1 - 2002.0
Abc - test - test - 2 - 2022.0
Please enter title:
Abc
Add media was succeeded!!
Done!!
Options:
-----
1. See a media's details
2. Add a media to cart
3. Play a media
4. See current cart
0. Back
-----
Please choose a number 0-1-2-3-4
4
The - Anh - test - 1 - 2002.0
Abc - test - test - 2 - 2022.0

```

12.2.5 Play a media

The screenshot shows the `updateStore...` tab in the IDE, displaying the following code:

```

20 while (true) {
21     menu();
22     Scanner InputUser = new Scanner(System.in);
23     int choose = InputUser.nextInt();
24     switch (choose) { // Check user's choice
25         case 1: {
26             mediaDetailsMenu.MediaDetailsMenu();
27             break;
28         }
29         case 2: {
30             Aims.myStore.listStore(); // List all media in store
31             addToCart(getMediaById()); // Add media to cart
32             break;
33         }
34     }
35 }
36
37 // Play a media
38 public static void PlayMedia() {
39     while (true) {
40         menu();
41         Scanner InputUser = new Scanner(System.in);
42         int choose = InputUser.nextInt();
43         switch (choose) { // Check user's choice
44             case 1: {
45                 mediaDetailsMenu.MediaDetailsMenu();
46                 break;
47             }
48             case 2: {
49                 Aims.myStore.listStore(); // List all media in store
50                 addToCart(getMediaById()); // Add media to cart
51                 break;
52             }
53             case 3: {
54                 Aims.myStore.playMedia(getMediaById()); // Play media
55                 break;
56             }
57             case 4: {
58                 Aims.myStore.showCurrentCart(); // Show current cart
59                 break;
60             }
61             case 0: {
62                 break;
63             }
64         }
65     }
66 }

```

The console output shows the execution of the program:

```

Abc - test - test - 2 - 2022.0
Options:
-----
1. See a media's details
2. Add a media to cart
3. Play a media
4. See current cart
0. Back
-----
Please choose a number 0-1-2-3-4
3
The - Anh - test - 1 - 2002.0
Abc - test - test - 2 - 2022.0
Please enter title:
Abc
Playing DVD: Abc
DVD length: 2

```