



Holy Angel University  
School of Computing  
Department



Subscription Management System  
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## **CASE STUDY: Sub-Scribe**

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Group 2

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CYB-201

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# **Manuscript**

Our system starts with the Main class prompting the user to select a choice between 1-8 then when the user selects the choice which he or she wants it would then call the Controller class's Methods, those being the main features of our program which are the Create Method, The Update Method, The Remove Method and the Cancel Method. Additionally, we implemented two additional features that our program has, those being the filter method which uses the Status of the current subscription as its filter, it would output all Active or all the Cancelled subscriptions in your system and the Search method which uses the Subscription's name attribute as basis to search the database to find if it is inside the database or not. The controller class is responsible for getting all the user input then it would then send it over to the database class to store them in Lists so that when the user selects show history or wants to search or filter, the controller would then ask the database to search or filter and even show history and pass it back to the controller and the controller would then pass it back to the main class so it would be outputted in the terminal. The Displayer class works by supplying all the redundant print statements to the controller class so it would be easier to edit whenever the developer wants to edit the print statements. For the Object-Oriented Programming we have implemented in our code, first we implemented Encapsulation since we have used private attributes in our Parent Class which is the Subscription and the 3 Child classes which are the Freemium Class, the Magazine and the Streaming class. As we already said, there are Child and Parent classes already so it means that we also have implemented Inheritance so that the Parent class base attributes would be passed on to the 3 child classes. More than that we made 4 Interface classes, those being ICREATE, IUPDATE, ICANCEL and IREMOVE that served as the Blueprints for the main features that we have implemented inside the Controller class.

We applied Polymorphism by overriding all said features as well so we could use the Interface classes. Next, we implemented a Database that served also as Aggregation since the Database class is fully dependent on the inputs from the Controller Class as well as the Parent and Child Classes.

Afterwards we implemented Cohesion with having some of our Classes do just one specific task such as the Error Handling class is only there to check errors, the displayer class's sole responsibility is to print the redundant print statements, and the Controller Class sole responsibility is to house the logistics of the different features that our program has. Then for the coupling design, our program both features Tight coupling is used in my Controller Class as it is directly dependent on specific objects as well as it handles multiple responsibilities. Loose coupling is implemented on our Main class, this also could be classified as Association since it interacts with the Parent and Child Classes. Lastly for the Composition, it was used since both the Database class and the Displayer class is being managed by the Controller because they would need the Input that the Controller provides as it is the bridge between the Main class and those classes.

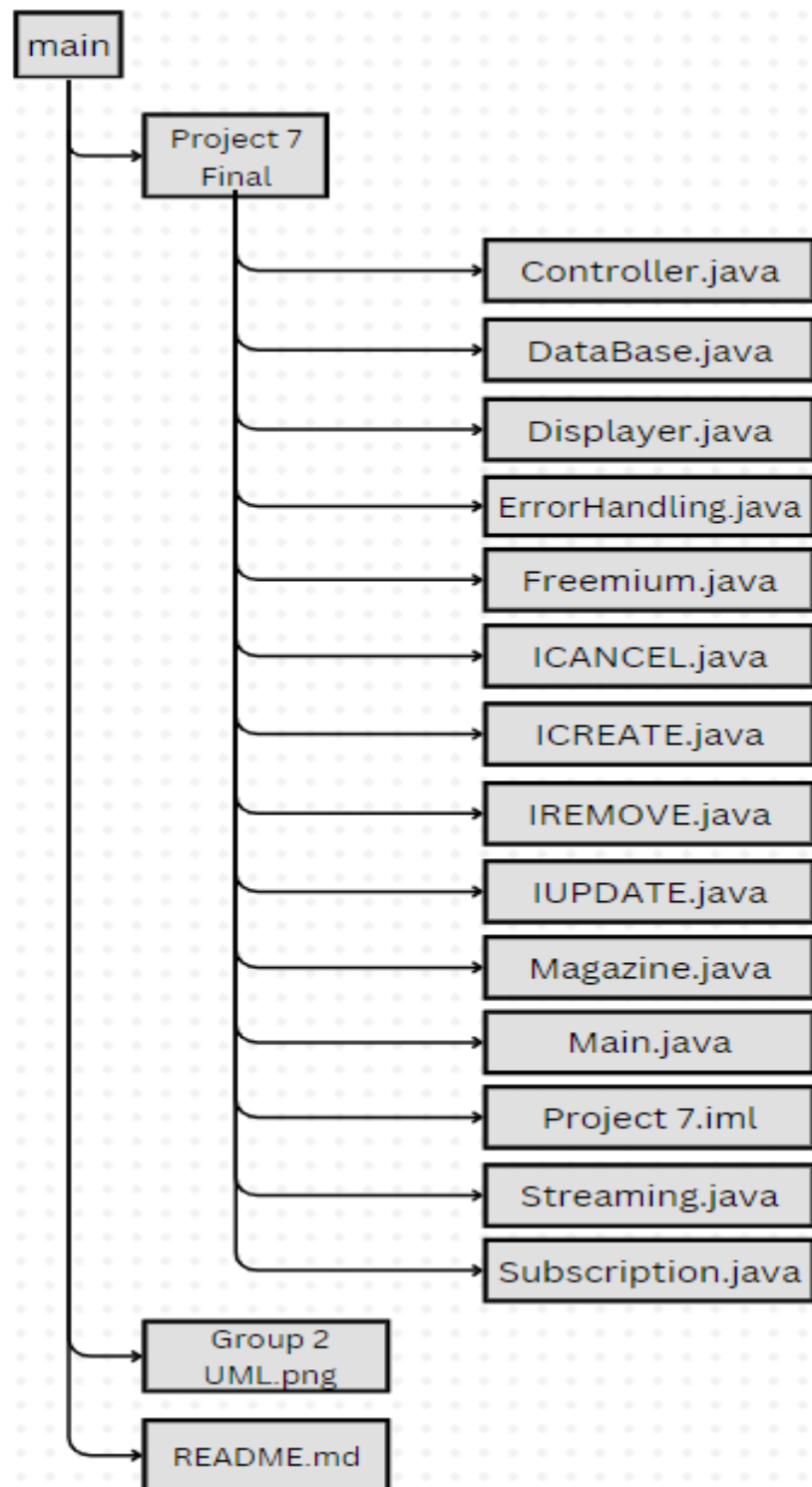
## **Project Description**

This project is a simple console-based application that allows users to create and ability to create, update, and cancel subscriptions, as well as view the subscription history and status. There are many different subscriptions such as Magazine, Streaming, Services, and Freemium. There should be different attributes for each of the subscription types. The application should use object-oriented principles to design and implement the classes and methods for the system. The application should also handle exceptions and errors appropriately and provide user friendly messages.

## **Scope and Limitations**

This program is only a Terminal Based program meaning the execution would only be done via a Terminal specifically using IntelliJ and not Visual studio code as we have tested that Visual studio code is inconsistent when trying to run our program, so we have decided to only be strictly testing and developing it on IntelliJ. Furthermore, the program would only have the features of creating, cancelling, updating and removing subscriptions as the main features then some additional features of searching and filtering subscriptions, more than those mentioned are not incorporated in our program. More than that this program would only cater to 3 specific subscription types, those being Magazine Subscriptions, Streaming Subscriptions and lastly is the Freemium Subscriptions. These are the only 3 subscription types that our program offers. Since this would only be Terminal based, the Gui of our program would only be designed via print statements with equal symbols making the border and spacing.

## Code-base Structure



# Appendices

## Error Handling and Input Validation

```
=====
Select the type of subscription:
[1] Magazine
[2] Streaming
[3] Freemium
Enter your choice (1-3): 1
Enter Subscription name: Mart
Enter start date (yyyy-MM-dd): 01-02-2024
Invalid date. Please enter the date in 'yyyy-MM-dd' format.
Enter start date (yyyy-MM-dd): 2023-01-02
Invalid year. Please enter a year of 2024 or later.
```

```
=====
Select the Number corresponding to the option you wish to do today:
[1] Create a new subscription
[2] Update an existing subscription
[3] Cancel a subscription
[4] View History and All Subscriptions Details
[5] Filter and check Status of a Subscriptions
[6] Search for a subscription
[7] Remove a subscription
[8] Exit the program
=====
Enter your choice: 0
Invalid option. Please try again.
=====
```

Sub-Scribe\_M

```
=====
Select the Number corresponding to the option you wish to do today:
```

- [1] Create a new subscription
- [2] Update an existing subscription
- [3] Cancel a subscription
- [4] View History and All Subscriptions Details
- [5] Filter and check Status of a Subscriptions
- [6] Search for a subscription
- [7] Remove a subscription
- [8] Exit the program

```
=====
Enter your choice: a
```

```
Invalid Choice, Please Input one option from the Prompt
=====
```

```
=====
Select the type of subscription:
```

- [1] Magazine
- [2] Streaming
- [3] Freemium

```
Enter your choice (1-3): 5
```

```
Invalid subscription type provided.
=====
```

## Create Feature

```
=====
Select the type of subscription:
```

- [1] Magazine
- [2] Streaming
- [3] Freemium

```
Enter your choice (1-3): 1
```

```
Enter Subscription name: Navarro
```

```
Enter start date (yyyy-MM-dd): 2025-01-02
```

```
Enter end date (yyyy-MM-dd): 2026-01-02
```

```
Enter the Delivery Type [Physical or Online]: Online
```

```
Magazine subscription added successfully!
```

```
Select the type of subscription:
[1] Magazine
[2] Streaming
[3] Freemium
Enter your choice (1-3): 2
Enter Subscription name: Irvin
Enter Device Limit: 2
Enter start date (yyyy-MM-dd): 2025-01-02
Enter end date (yyyy-MM-dd): 2026-01-02
Streaming subscription added successfully!
```

```
=====
Select the type of subscription:
[1] Magazine
[2] Streaming
[3] Freemium
Enter your choice (1-3): 3
Enter Subscription name: David
Enter start date (yyyy-MM-dd): 2025-01-02
Enter end date (yyyy-MM-dd): 2026-01-02
Enter Trial Period (in days): 60
Freemium subscription added successfully!
```



## History Feature

```
=====
Select the Number corresponding to the option you wish to do today:
```

- [1] Create a new subscription
- [2] Update an existing subscription
- [3] Cancel a subscription
- [4] View History and All Subscriptions Details
- [5] Filter and check Status of a Subscriptions
- [6] Search for a subscription
- [7] Remove a subscription
- [8] Exit the program

```
=====
Enter your choice: 4
=====
```

```
=====
Viewing ALL Subscriptions
=====
```

```
Viewing all subscriptions...
```

```
Magazines that you have :
```

```
Name: Mart
```

```
Starting Date: 2025-01-02
```

```
End Date: 2026-01-02
```

```
Status Active
```

```
Delivery Type Physical
=====
```

```
Streamings that you have :
```

```
Freemiums that you have :
```

```
Name: David
```

```
Starting Date: 2025-01-02
```

```
End Date: 2026-01-02
```

```
Status Active
```

```
Trial Period: 60 days
=====
```

## Update Feature

```
=====
Updating a Subscriptions
=====
```

```
Select the type of subscription:
```

- [1] Magazine
- [2] Streaming
- [3] Freemium

```
Enter your choice (1-3): 3
```

```
Updating the subscription
```

```
Enter Subscription name: David
```

```
Enter new start date (yyyy-MM-dd): 2025-01-02
```

```
Enter new end date (yyyy-MM-dd): 2026-01-02
```

```
Enter New Trial Period: 30
```

```
Updated the Freemium Subscription!!
```

```
Freemiums that you have :
```

```
Name: David
```

```
Starting Date: 2030-01-02
```

```
End Date: 2031-02-01
```

```
Status Active
```

```
Trial Period: 2 days
```

## Cancel Feature

```
=====
                          Sub-Scribe Management System
=====
Select the Number corresponding to the option you wish to do today:
[1] Create a new subscription
[2] Update an existing subscription
[3] Cancel a subscription
[4] View History and All Subscriptions Details
[5] Filter and check Status of a Subscriptions
[6] Search for a subscription
[7] Remove a subscription
[8] Exit the program
=====
Enter your choice: 3
=====
                          Cancelling a Subscriptions
=====
Select the type of subscription:
[1] Magazine
[2] Streaming
[3] Freemium
Enter your choice (1-3):
```

```
=====
                          Cancelling a Subscriptions
=====
Select the type of subscription:
[1] Magazine
[2] Streaming
[3] Freemium
Enter your choice (1-3): 1
Canceling the subscription
Enter Subscription name: Mart
Magazine subscription cancelled.
```

```
Magazines that you have :
Name: Mart
Starting Date: Cancelled
End Date: Cancelled
Status Cancelled
Delivery Type Cancelled
```

## Filter Feature

```
[1] Create a new subscription
[2] Update an existing subscription
[3] Cancel a subscription
[4] View History and All Subscriptions Details
[5] Filter and check Status of a Subscriptions
[6] Search for a subscription
[7] Remove a subscription
[8] Exit the program
```

```
=====
Enter your choice: 5
=====
```

```
Filtering ALL Subscriptions
=====
```

```
Select the type of subscription:
```

```
[1] Magazine
[2] Streaming
[3] Freemium
```

```
Enter your choice (1-3): 1
```

```
Enter the status to filter by [Active or Cancelled]:
```

```
Cancelled
```

```
Results
```

```
Filtered Magazines:
```

```
Name: Mart - Status: Cancelled
```

```
=====
Enter your choice: 5
=====
```

```
Filtering ALL Subscriptions
=====
```

```
Select the type of subscription:
```

```
[1] Magazine
[2] Streaming
[3] Freemium
```

```
Enter your choice (1-3): 3
```

```
Enter the status to filter by [Active or Cancelled]:
```

```
Active
```

```
Results
```

```
Filtered Freemium Subscription:
```

```
Name: David - Status: Active
```

## Search Feature

```
Sub-Scribe Management System
=====
```

```
Select the Number corresponding to the option you wish to do today:
```

```
[1] Create a new subscription
[2] Update an existing subscription
[3] Cancel a subscription
[4] View History and All Subscriptions Details
[5] Filter and check Status of a Subscriptions
[6] Search for a subscription
[7] Remove a subscription
[8] Exit the program
```

```
=====
Enter your choice: 6
=====
```

```
Searching for a Existing Subscription
=====
```

```
Select the type of subscription:
```

```
[1] Magazine
[2] Streaming
[3] Freemium
```

```
Enter your choice (1-3): 1
```

```
Enter Subscription name: Mart
```

```
Magazine found: Mart - Status: Cancelled
```

```

=====
Select the Number corresponding to the option you wish to do today:
[1] Create a new subscription
[2] Update an existing subscription
[3] Cancel a subscription
[4] View History and All Subscriptions Details
[5] Filter and check Status of a Subscriptions
[6] Search for a subscription
[7] Remove a subscription
[8] Exit the program
=====
Enter your choice: 6
=====
Searching for a Existing Subscription
=====
Select the type of subscription:
[1] Magazine
[2] Streaming
[3] Freemium
Enter your choice (1-3): 1
Enter Subscription name: Navarro
Magazine subscription not found.
=====

```

## Remove Feature

### Before:

```

=====
Viewing ALL Subscriptions
=====
Viewing all subscriptions...
Magazines that you have :
Name: Mart
Starting Date: Cancelled
End Date: Cancelled
Status Cancelled
Delivery Type Cancelled
=====
Streamings that you have :
Freemiums that you have :
Name: David
Starting Date: 2030-01-02
End Date: 2031-02-01
Status Active
Trial Period: 2 days
=====

```

### During:

```

=====
Removing a Subscriptions
=====
Select the type of subscription:
[1] Magazine
[2] Streaming
[3] Freemium
Enter your choice (1-3): 1
Enter Subscription name: Mart
Magazine subscription removed successfully.
=====

```

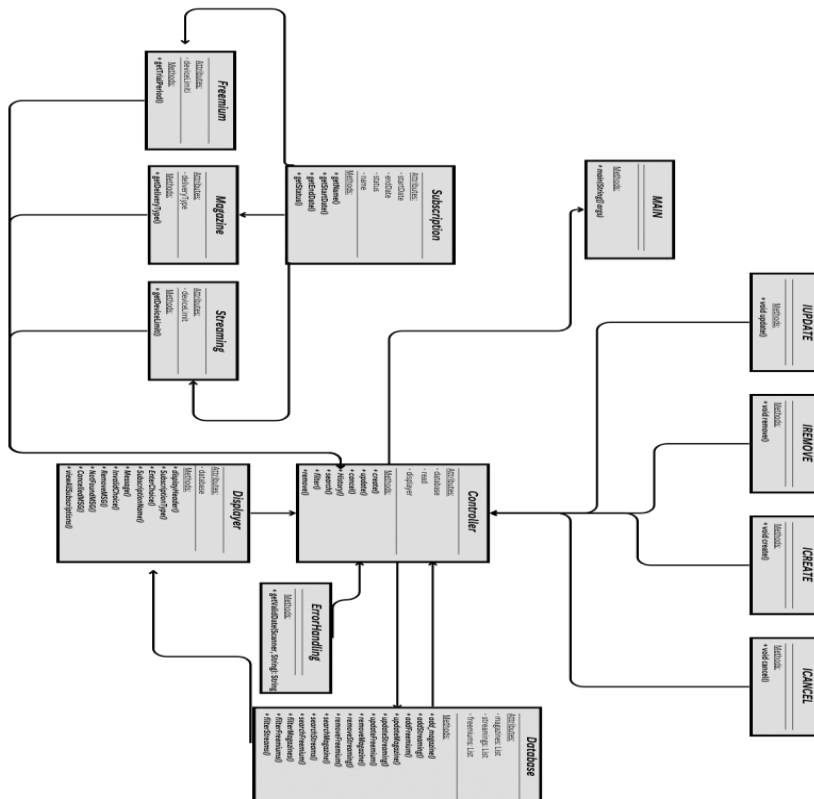
### After:

```

=====
Enter your choice: 4
=====
Viewing ALL Subscriptions
=====
Viewing all subscriptions...
Magazines that you have :
Streamings that you have :
Freemiums that you have :
Name: David
Starting Date: 2030-01-02
End Date: 2031-02-01
Status Active
Trial Period: 2 days
=====

```

# UML Diagram



UML Class Diagram

Group 2:  
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Github Link to our Code : <https://github.com/NytoNight/Finals-Group-2-Project-7---Subscription-Management-System/tree/main>

Link to our Demo:

<https://drive.google.com/file/d/1lqi6gLwxcbiDou7MJocEtPzYjG3YbRAe/view>

