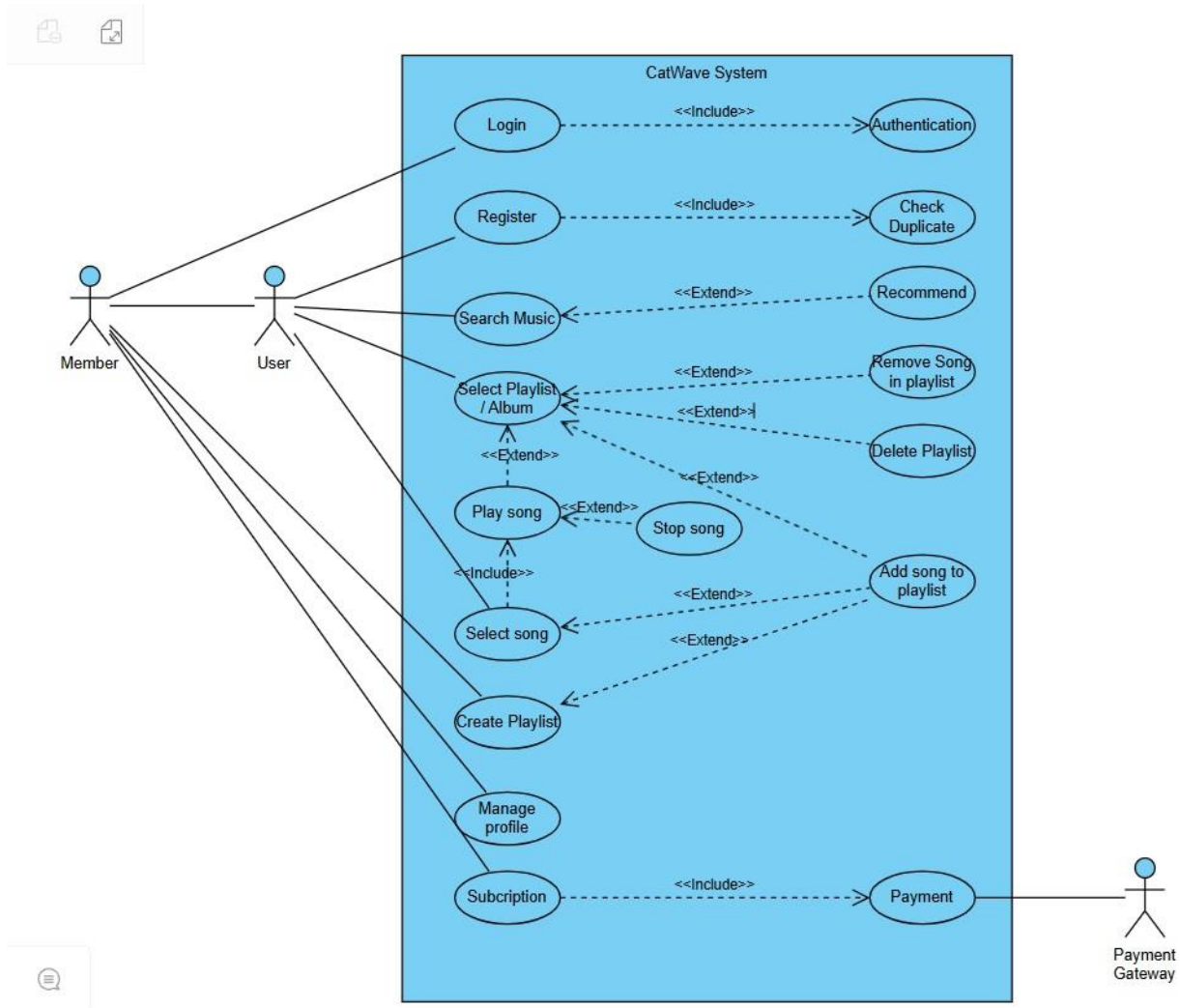


LAB 5&6 – REQUIREMENT SPECIFICATION

I. Use Case Diagram



II. Use Case Description

A use case specification represents the sequence of events along with other information that relates to this use case.

A typical use case specification template includes the following information:

- **Title:** Title: of the use case
- **Identifier:** A unique identifier for this use case
- **User Story:** a documented description of a software feature seen from the end-user perspective.
- **Input/ Output:** Input and possible outputs of this use case

- **Preconditions:** list the state(s) the system can be before this use case starts
- **Basic course:** Describe the normal processing path
- **Alternative course:** Description of the alternative course
- **Postconditions:** list the state(s) the system can be before this use case ends

UC1: Login

- **Title:** Login
- **Identifier:** UC1
- **Input/Output:**
 - Input: Username, Password
 - Output: Homepage [successful] or error message [failed]
- **Preconditions:**
 - User has an account.
- **Basic Course:**

Actor (User)	System
1. Open login page	1.1 Display login page
2. Enter username and password	
3. Submit form	3.1 Validate credentials 3.2 If valid, redirect to homepage 3.3 Else, show error

- **Alternative Course:**
 - Wrong credentials will show an error.
- **Postconditions:**
 - User session started if successful.
- **User Story:** As a user, I want to log in to CatWave so that I can access my music and playlists.

UC2: Register

- **Title:** Register
- **Identifier:** UC2
- **Input/Output:**
 - Input: Username, Password, Email
 - Output: Go to homepage [successful] or request register again [failed]
- **Preconditions:**
User not registered yet.
- **Basic Course:**

Actor (User)	System
1. Open register page	1.1 Display register form
2. Fill username, password, email	
3. Submit	3.1 Validate data 3.2 Create account or show error

- **Alternative Course:**
Username/email already taken shows error.
- **Postconditions:**
New account created.
- **User Story:** As a new user, I want to register an account to access features.

UC3: Search Music

- **Title:** Search Music
- **Identifier:** UC3
- **Input/Output:**
 - Input: Search keywords
 - Output: Matching results [successful] or return “no songs match keywords search” [failed]
- **Preconditions:**
User logged in.
- **Basic Course:**

Actor (User)	System
1. Enter search term	
2. Click search	2.1 Query database 2.2 Display results

- **Alternative Course:**
No matching result shows 'No result found'.
- **Postconditions:**
Results shown.
- **User Story:** As a user, I want to search for songs, albums, or playlists easily.

UC4: Select Playlist/Album

- **Title:** Select Playlist/Album
- **Identifier:** UC4
- **Input/Output:**
 - Input: Selected item
 - Output: List of songs [successful] or return “Album/playlist it not available” [failed]
- **Preconditions:**
Playlists/albums available.
- **Basic Course:**

Actor (User)	System
1. Click playlist or album	1.1 Load and display items

- **Alternative Course:**
If missing, show error.
- **Postconditions:**
Content displayed.
- **User Story:** As a user, I want to select a playlist or album to browse music.

UC5: Play Song

- **Title:** Play Song
- **Identifier:** UC5
- **Input/Output:**
 - Input: Selected song
 - Output: Audio playback [successful] or nothing play [failed]
- **Preconditions:**
Song available.
- **Basic Course:**

Actor (User)	System
1. Select song	1.1 Load song
2. Click play	2.1 Stream and play

- **Alternative Course:**
If missing, error displayed.
- **Postconditions:**
Song is playing.
- **User Story:** As a user, I want to play a selected song.

UC6: Stop Song

- **Title:** Stop Song
- **Identifier:** UC6
- **Input/Output:**
 - Input: Stop button
 - Output: Playback stops [successful] or continue playing [failed]
- **Preconditions:**
A song is playing.
- **Basic Course:**

Actor (User)	System
1. Click stop	1.1 Stop playback

- **Alternative Course:**
None.
- **Postconditions:**
No song playing.
- **User Story:** As a user, I want to stop the current song.

UC7: Select Song

- **Title:** Select Song
- **Identifier:** UC7
- **Input/Output:**
 - Input: Song selection
 - Output: Song details [successful] or nothing happens [failed]
- **Preconditions:**
Songs listed.
- **Basic Course:**

Actor (User)	System
1. Browse and select song	1.1 Show song info

- **Alternative Course:**
If not available, show error.
- **Postconditions:**
Song info displayed.
- **User Story:** As a user, I want to select a song to view its information or play it.

UC8: Create Playlist

- **Title:** Create Playlist
- **Identifier:** UC8
- **Input/Output:**
 - Input: Playlist name
 - Output: New playlist [successful] or return “Can not create playlist now, please try again later” [failed]
- **Preconditions:**
User logged in.
- **Basic Course:**

Actor (User)	System
1. Click 'Create Playlist'	1.1 Show creation form
2. Enter name	
3. Confirm creation	3.1 Save playlist

- **Alternative Course:**
If name taken, show error.
- **Postconditions:**
Playlist created.
- **User Story:** As a user, I want to create my own playlists.

UC9: Manage Profile

- **Title:** Manage Profile
- **Identifier:** UC9
- **Input/Output:**
 - Input: New profile data
 - Output: Updated profile [successful] or return “Update failed, try again later” [failed]
- **Preconditions:**
User logged in.
- **Basic Course:**

Actor (User)	System
1. Open profile settings	1.1 Show current info
2. Edit fields	
3. Save changes	3.1 Validate and update

- **Alternative Course:**
Invalid input causes error.
- **Postconditions:**
Profile updated.
- **User Story:** As a user, I want to update my profile information.

UC10: Subscription

- **Title:** Subscription
- **Identifier:** UC10
- **Input/Output:**
 - Input: Subscription choice
 - Output: Payment page [successful] or return “subscription payment error, try again later” [failed]
- **Preconditions:**
User logged in.
- **Basic Course:**

Actor (User)	System
1. Select a subscription	1.1 Redirect to payment gateway

- **Alternative Course:**
Payment failed leads to no activation.
- **Postconditions:**
Subscription active.
- **User Story:** As a user, I want to subscribe for premium access.

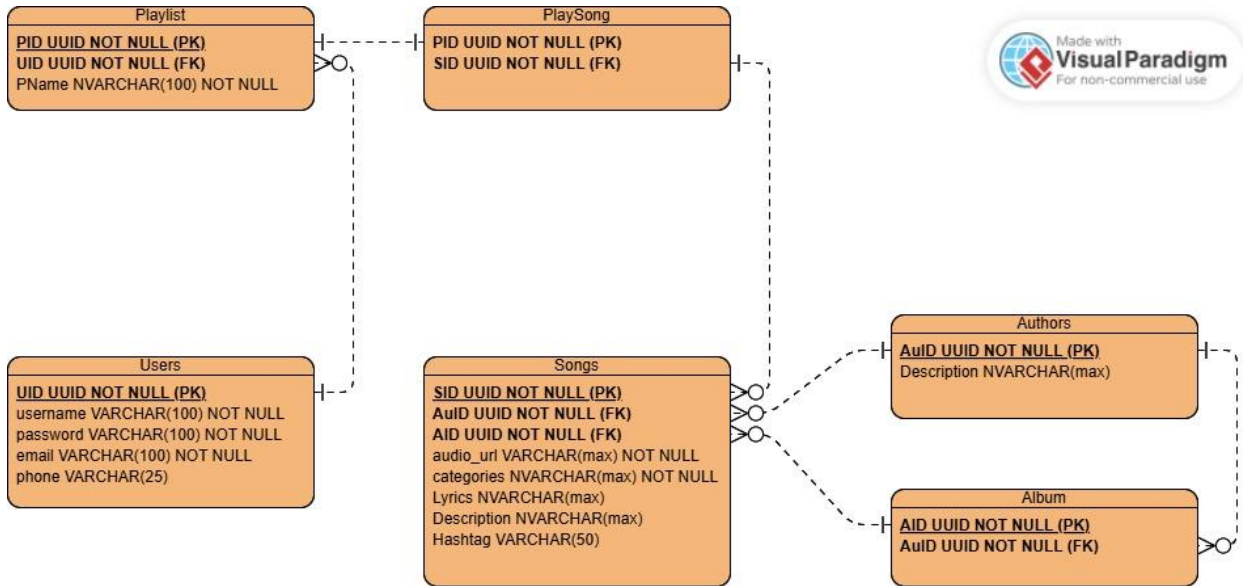
UC11: Payment

- **Title:** Payment
- **Identifier:** UC11
- **Input/Output:**
 - Input: Payment details
 - Output: Confirmation [successful] or return “Payment error, try again later” [failed]
- **Preconditions:**
User in payment process.
- **Basic Course:**

Actor (User)	System
1. Input payment details	1.1 Validate and process
2. Confirm	2.1 Payment success or failure

- **Alternative Course:**
Payment fail shows error.
- **Postconditions:**
Subscription activated on success.
- **User Story:** As a user, I want to complete payment securely.

III. Entity Relationship Diagram



IV. Class Diagram

Class diagrams are used when developing an object-oriented system model to show the classes in a system and the associations between these classes. An association is a link between classes that indicates that there is a relationship between these classes.

