

# StreamWave

Software Engineering for Artificial Intelligence DVA269

Assignment 1

Grupp 2

|                                 |                                      |
|---------------------------------|--------------------------------------|
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# 1 User Stories

| ID | Who                        | What  | Why   |
|----|----------------------------|---|---|
| 1  | As an unauthenticated user | I want to create a user account   | To stream music and save my playlists and listening history           |
| 2  | As an unauthenticated user | I want to be able to login  | To become an authenticated user and get access to my music collection |
| 3  | As a registered user       | I want to search for songs, albums, artists and podcasts                                    | To listen to the things I am interested in                            |
| 4  | As a registered user       | I want to create, edit and delete playlists   | To organize my favourite tracks into personal collections             |
| 5  | As a registered user       | I want to get recommendations on tracks, albums and playlists based on my listening history | To discover new music   |
| 6  | As a registered user       | I want to upgrade to a premium account  | To get benefits like better audio quality on streams                  |
| 7  | As an Artist               | I want to upload my music and manage album collections with cover images                    | To reach my fans  |
| 8  | As an Administrator        | I want to add, edit or delete user accounts   | To keep the system secure   |
| 9  | As an Administrator        | I want to manage content items and handle the audio quality of Free/Premium tiers           | To keep the system up to date   |

Table 1: User Stories for StreamWave

## 2 User Stories Descriptions

### 1: Register Account

**Name:** Register Account

**Precondition:** None

**Initiator:** Unauthenticated User

**Goal:** Create a user account to stream music and save playlists

**Steps to reach the goal:**

1. User enters username, email, and password
2. System checks username is available
3. System creates account
4. System displays confirmation message

**Alternative flows:**

1. Email already exists at step 2
  - a. System shows error message
  - b. Resume at 1

### 2: Login

**Name:** Login

**Precondition:** User has an account

**Initiator:** Unauthenticated User

**Goal:** Access music collection

**Steps to reach the goal:**

1. User enters username and password
2. System checks username and password exists and correct
3. System approves access
4. User sees music collection on front page

**Alternative flows:**

1. Invalid credentials at step 2
  - a. System displays error message
  - b. Resume at 1

### 3: Search and Play Content

**Name:** Search and Play Content

**Precondition:** User is logged in

**Initiator:** Registered User

**Goal:** Listen to songs, albums, artists, or podcasts

**Steps to reach the goal:**

1. User enters what to search for
2. System searches library for that content
3. System displays search results
4. User selects content to play
5. System streams selected content

**Alternative flows:**

1. No results found at step 3
  - a. System shows message that nothing was found.
  - b. Resume at 1
2. Free tier user at step 5
  - a. System plays normal quality audio
  - b. Stop
3. Premium tier user at step 5
  - a. System plays high quality audio
  - b. Stop

### 4: Manage Playlists

**Name:** Manage Playlists

**Precondition:** User is logged in

**Initiator:** Registered User

**Goal:** Organize favourite tracks into personal collections

**Steps to reach the goal:**

1. User selects playlist management option
2. User chooses action (create, edit, or delete)
3. For create: User enters name and adds tracks
4. For edit: User modifies existing playlist
5. For delete: User confirms deletion
6. System saves changes

**Alternative flows:**

1. User cancels action at step 3, 4, or 5
  - a. System cancel changes
  - b. Stop

## 5: Receive Recommendations

**Name:** Receive Recommendations

**Precondition:** User is logged in

**Initiator:** Registered User

**Goal:** Get recommendations based on listening history

**Steps to reach the goal:**

1. User opens front page
2. System analyzes listening history
3. System displays similar content
4. User can stream suggested content

**Alternative flows:**

1. New user with no listening history at step 2
  - a. System shows trending and popular content
  - b. Resume at 4

## 6: Manage Subscription

**Name:** Manage Subscription

**Precondition:** User is logged in

**Initiator:** Registered User

**Goal:** Upgrade to premium account for better audio quality

**Steps to reach the goal:**

1. User clicks upgrade account button
2. User enters payment information
3. System processes payment
4. System upgrades account to premium
5. System confirms upgrade

**Alternative flows:**

1. Payment fails at step 3
  - a. System displays payment error
  - b. Resume at 2
2. User cancels at step 3
  - a. System returns to previous page
  - b. Stop

## 7: Upload and Manage Catalog

**Name:** Upload and Manage Catalog

**Precondition:** Artist is logged in

**Initiator:** Artist

**Goal:** Upload music and manage album collections with cover images

**Steps to reach the goal:**

1. Artist chooses to upload song or create album
2. Artist uploads audio files
3. Artist enters title, genre, album name
4. Artist uploads cover image
5. System processes and publishes content
6. System confirms if upload was successful

**Alternative flows:**

1. Invalid file format at step 2
  - a. System displays error message
  - b. Resume at 2
2. Edit existing content at step 2
  - a. Artist selects existing content
  - b. Artist modifies details or replaces files
  - c. System updates content
  - d. Resume at 6
3. Delete content at step 2
  - a. Artist selects content to delete
  - b. System confirms deletion
  - c. System removes content
  - d. Stop

## 8: Manage Users

**Name:** Manage Users

**Precondition:** Administrator is logged in

**Initiator:** Administrator

**Goal:** Add, edit, or delete user accounts for system security

**Steps to reach the goal:**

1. Administrator opens user management
2. Administrator selects action (add, edit, or delete)
3. For add: Administrator enters new user details
4. For edit: Administrator modifies user information
5. For delete: Administrator confirms deletion
6. System executes action
7. System confirms changes

**Alternative flows:**

1. Username already exists at step 3
  - a. System shows error message
  - b. Resume at 3
2. User not found at step 4 or 5
  - a. System displays "User not found"
  - b. Resume at 2

## 9: Manage Content and Tiers

**Name:** Manage Content and Tiers

**Precondition:** Administrator is logged in

**Initiator:** Administrator

**Goal:** Manage content items and handle audio quality for Free/Premium tiers

**Steps to reach the goal:**

1. Administrator opens content and tier management
2. Administrator selects management option (content or tiers)
3. For content: Administrator adds, edits, or deletes content items
4. For tiers: Administrator sets audio quality levels for Free and Premium
5. System applies changes
6. System confirms update

**Alternative flows:**

1. Content upload fails at step 3
  - a. System displays error message
  - b. Resume at 3
2. Invalid quality settings at step 4
  - a. System shows validation error
  - b. Resume at 4

### 3 Requirements

| Requirements |                           |                                       |                                   |                     |   |
|--------------|---------------------------|---------------------------------------|-----------------------------------|---------------------|---|
| ID           | Description               | Inputs                                | Outputs                           | Precondition        | Postcondition                                   |
| 1            | Register user account     | Username, email, password             | Account confirmation              | None                | User account created                            |
| 2            | Login to system           | Username, password                    | Access to logged in frontpage     | User account exists | User is logged in                               |
| 3            | Search and stream content | Search string                         | List of results, audio stream     | User is logged in   | Content displayed or played                     |
| 4            | Manage playlists          | Playlist name, tracks                 | Playlist confirmation or deletion | User is logged in   | Playlist created, updated, or removed           |
| 5            | Create recommendations    | User history, trends                  | Recommended content list          | User is logged in   | Results displayed                               |
| 6            | Upgrade to Premium        | Payment information                   | Premium confirmation              | User has Free tier  | Account upgraded to Premium                     |
| 7            | Manage artist catalog     | Audio files, Info                     | Action confirmation               | Artist is logged in | Content published, updated, or removed          |
| 8            | Manage users              | User details                          | Action confirmation               | Admin is logged in  | User account created, modified, or removed      |
| 9            | Manage content            | Content files, Info                   | Action confirmation               | Admin is logged in  | Content added, updated, or removed from library |
| 10           | Configure tier settings   | Audio quality levels for Free/Premium | Configuration confirmation        | Admin is logged in  | Settings updated                                |



## 4 Product Backlog

| PRODUCT BACKLOG |                           |     |     |  |  |
|-----------------|---------------------------|-----|-----|--|--|
| ID              | Name                      | Imp | Est | How to demo  | Notes  |
| 1               | User registration         | 10  | 7   | Create account with username and password, and show it in "database-file" on disk                                      | Check input format is correct  |
| 2               | User login                | 10  | 5   | Enter username and password, Show access to logged in frontpage  | Check input format is correct  |
| 3               | Search and stream content | 9   | 10  | Log in as user, search for content and show search results   | Show message if there are no results   |
| 4               | Manage playlist           | 8   | 7   | Log in as user, choose a playlist and re-order tracks. Rename playlist.  | Tracks are added to playlist from search results page (not in here)                      |
| 5               | Receive recommendations   | 7   | 5   | Log in as user, listen to tracks, show that frontpage updates with new tracks based on this                            | Show a default list of songs if no history found   |
| 6               | Manage subscriptions      | 8   | 4   | Log in as user, click "upgrade", enter payment information, shows a "Premium user" badge.                              | Payment must succeed, user allowed to abort/downgrade                                    |
| 7               | Upload and manage catalog | 9   | 7   | Log in as artist, upload and publish song. Show it in search results.  | Only mp3 (or wav?) allowed, otherwise error message                                      |
| 8               | Manage users              | 6   | 5   | Log in as administrator, choose "edit" and modify user information. Choose "delete" and delete a user. Confirm changes | Users are added using "registration". Maybe allow to add custom users during development |
| 9               | Manage content            | 6   | 5   | Log in as administrator, edit and delete content items   | Show updated content   |
| 10              | Configure tier settings   | 5   | 4   | Set audio quality levels for free and premium tiers. Verify by streaming in free and premium account                   | Maybe use wav for premium, and mp3 for free  |

## 5 Points redistribution

**Total points - 100**

Martin Dahlgren - 25 points

Linos Hurmiz Dawod - 25 points

Neo Norman - 25 points

Jonathan Stenvi - 25 points