

Software Requirements Specification for Software Engineering: subtitle describing software

Team 8 – Rhythm Rangers

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Revision History

Date	Version	Notes
Date 1	1.0	Notes
Date 2	1.1	Notes

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1.1 User Business

Insert your content here.

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Insert your content here.

6.4 Specifying a Business Use Case (BUC)

Insert your content here.

7 Business Data Model and Data Dictionary

7.1 Business Data Model

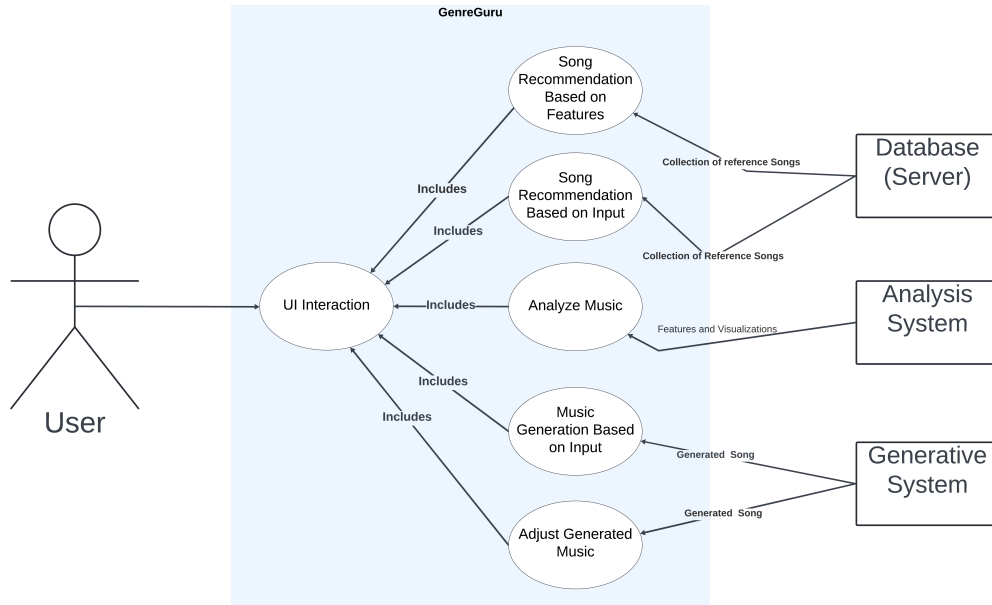
Insert your content here.

7.2 Data Dictionary

Insert your content here.

8 The Scope of the Product

8.1 Product Boundary



8.2 Product Use Case Table

PUC No	PUC Name	Actor/s	Input & Output
1	UI Interaction	User	User Actions (click, swipe, drag) (in) System Response (out)
2	Song Recommendation Based on Features	User	User's desired features (in) Collection of reference songs (out)
3	Music Generation Based on Input	User	Reference song(s) and/or song snippet(s) (in) Generated song or song snippet (out)
4	Analyze Music	User	Reference song or song snippet (in) Collection of features and visualizations (out)
5	Song Recommendation Based on Input	User	Reference song(s) (in) Collection of reference songs (out)
6	Server Interaction for Music Generation	Server	Reference song(s) and/or song snippet(s) (in) Generated song or song snippet (out)
7	Server Interaction for Song Recommendation	Server	User's desired features or reference song(s) and/or snippet(s) (in)Collection of reference songs (out)
8	Server Interaction for Music Analysis	Server	Reference song or song snippet (in) Collection of features and visualizations (out)

Table 1: Product Use Case Table

8.3 Individual Product Use Cases (PUC's)

1. Product Use Case Name: UI Interaction

Trigger: User commits some action (e.g. clicking, swiping, dragging)

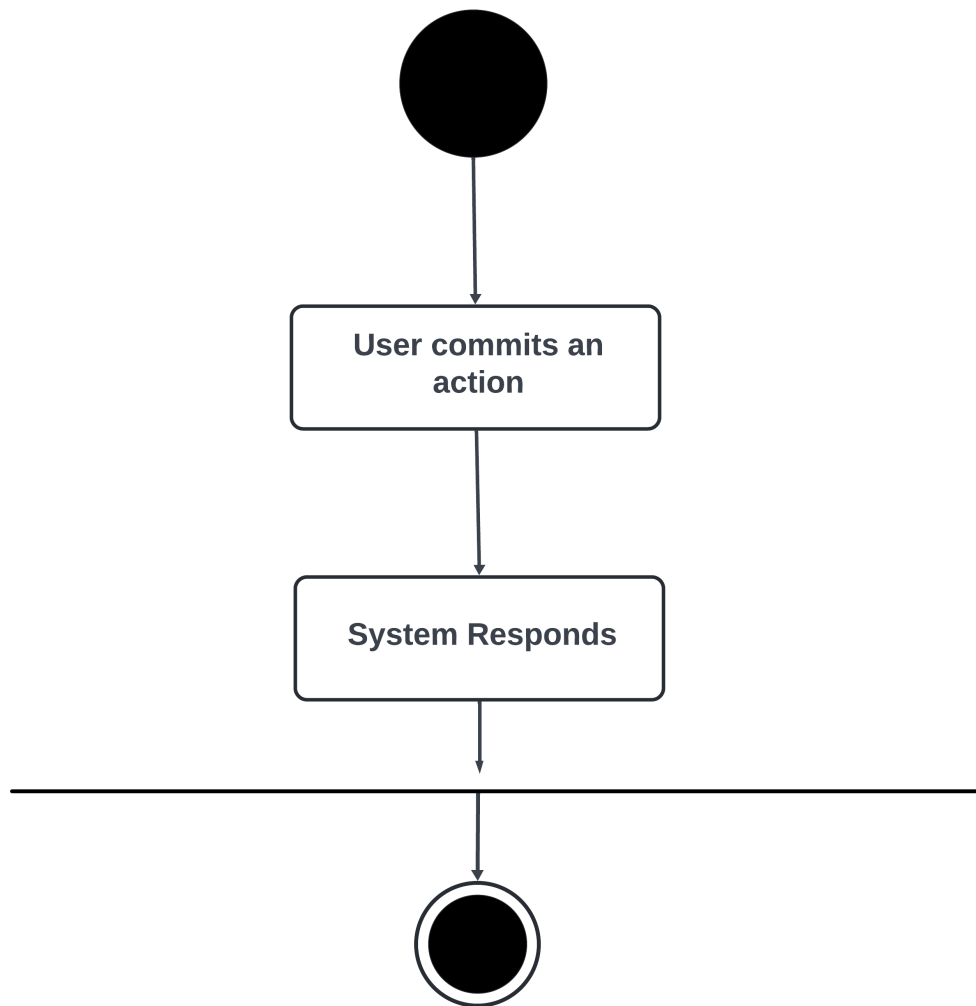
Preconditions: User has successfully accessed GenreGuru, or is already in

GenreGuru

Interested Stakeholders: All

Actor/s: User

Activity Diagram:



Outcome: The user will commit an action like swiping or pressing and the system will react depending on the action.

2. Product Use Case Name: Song Recommendation Based on Features

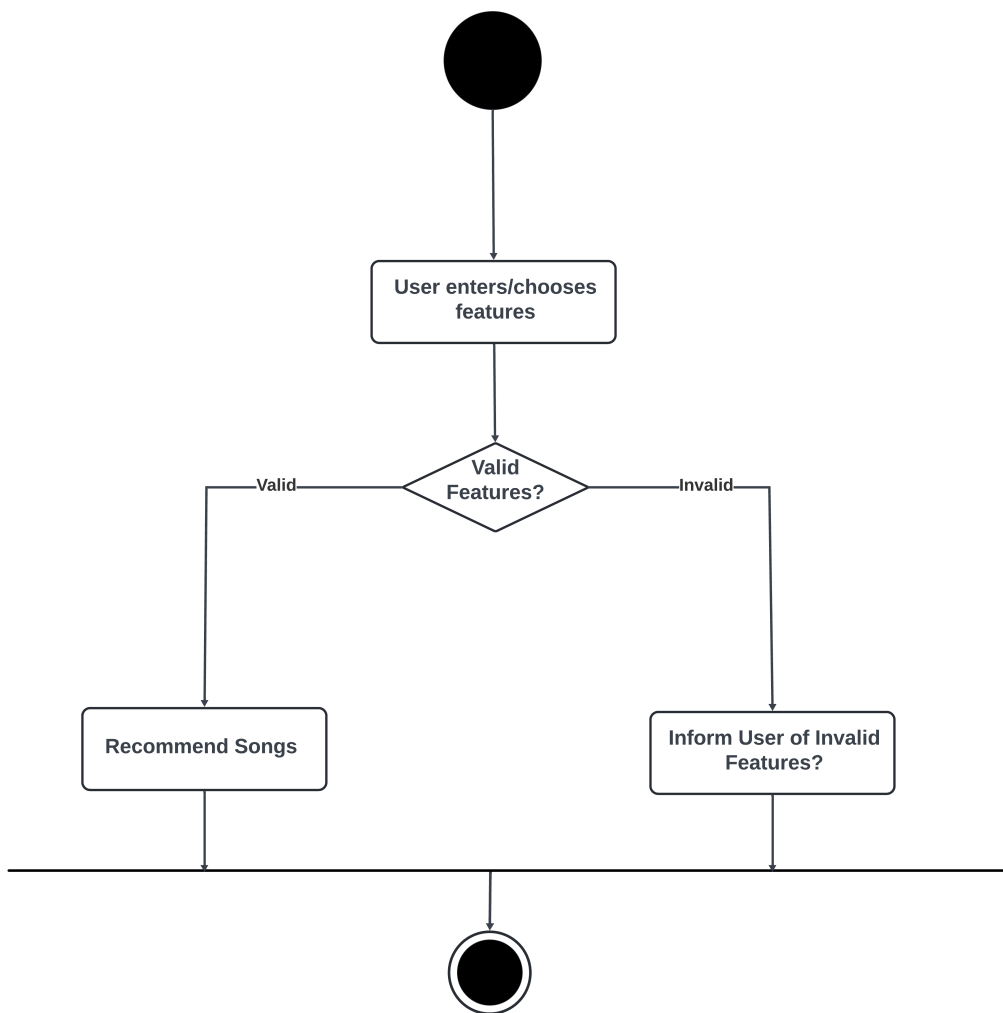
Trigger: User picks features, and indicates they want to search for recommendations

Preconditions: User must have GenreGuru open, the user has selected features to search for

Interested Stakeholders: Casual Music Listeners, Hobbyist Musicians

Actor/s: User

Activity Diagram:



Outcome: The user will select or manually enter features they are looking for in a song, and the system will first check to see if the features they selected/entered are valid, and the system will return a collection of reference songs that match those features.

3. Product Use Case Name: Music Generation Based on Input

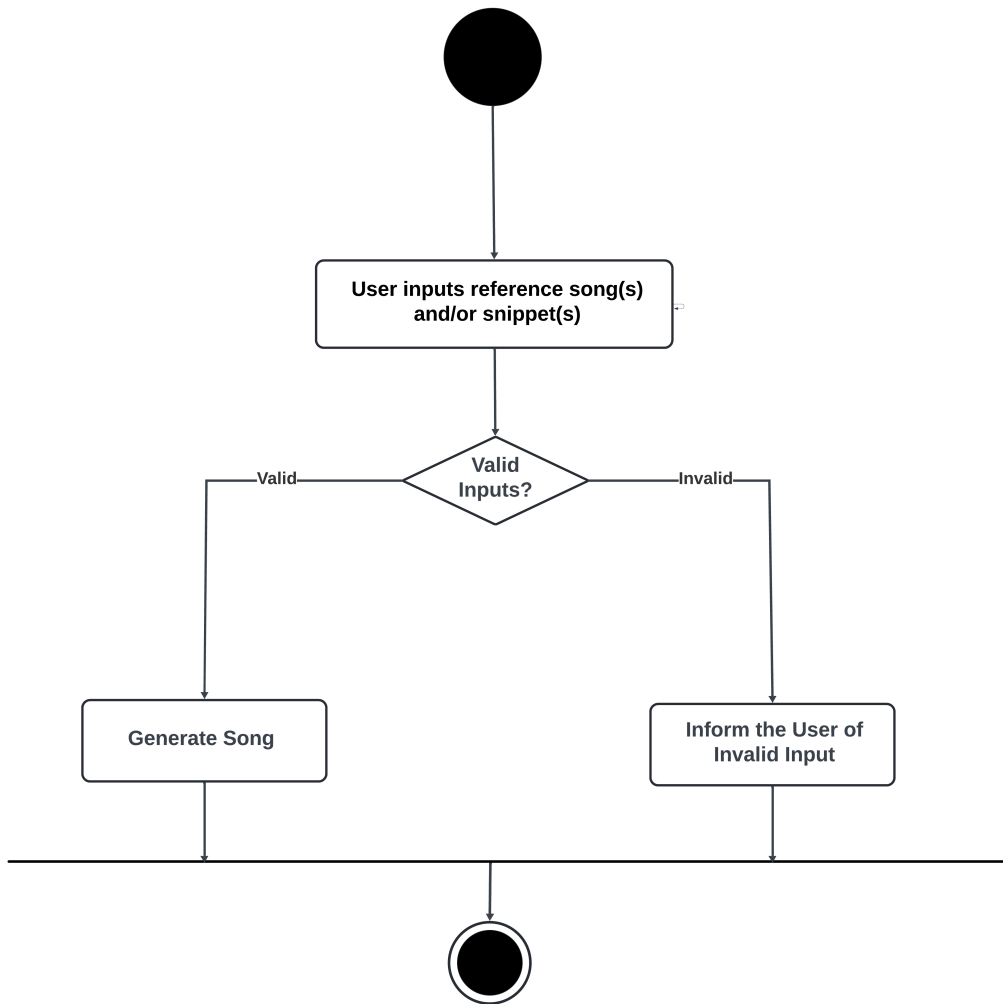
Trigger: User inputs reference song(s) and/or song snippet(s), and indicates they want to generate a song

Preconditions: User must have GenreGuru open, and the user has provided a valid input(s)

Interested Stakeholders: Music producers, Hobbyist Musicians

Actor/s: User

Activity Diagram:



Outcome: The user will enter song(s) and/or song snippet(s) and indicate to the system that they want to generate music, the system will check that these inputs are valid (correct format) and then will generate a song and return it to the user.

4. Product Use Case Name: Analyze Music

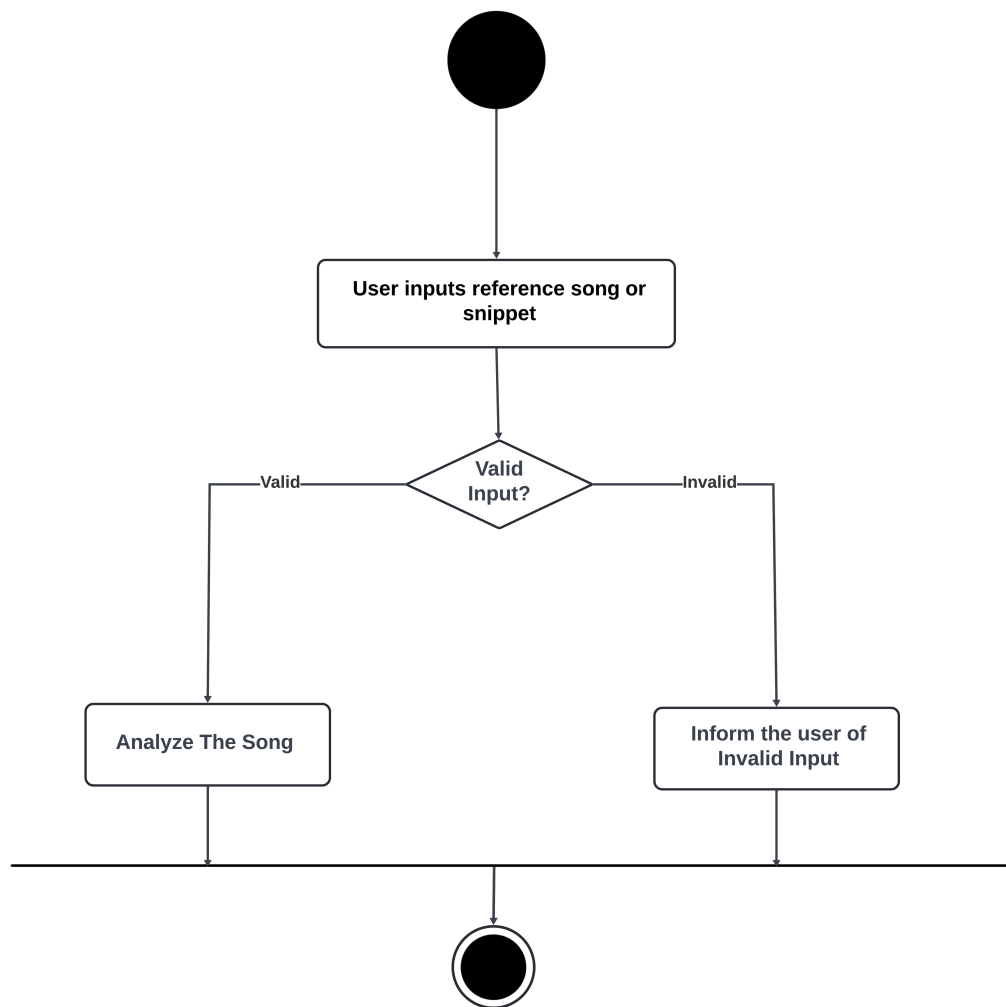
Trigger: User inputs a reference song or song snippet and indicates they want to analyze the music

Preconditions: User must have GenreGuru open, and the user has provided a valid input

Interested Stakeholders: Music Producers, Audio Engineers, Music Educators

Actor/s: User

Activity Diagram:



Outcome: The user will input a reference song or song snippet and indicate they want to analyze the song, the system will validate the input and return

a set of features and visualizations.

5. Product Use Case Name: Song Recommendation Based on Input

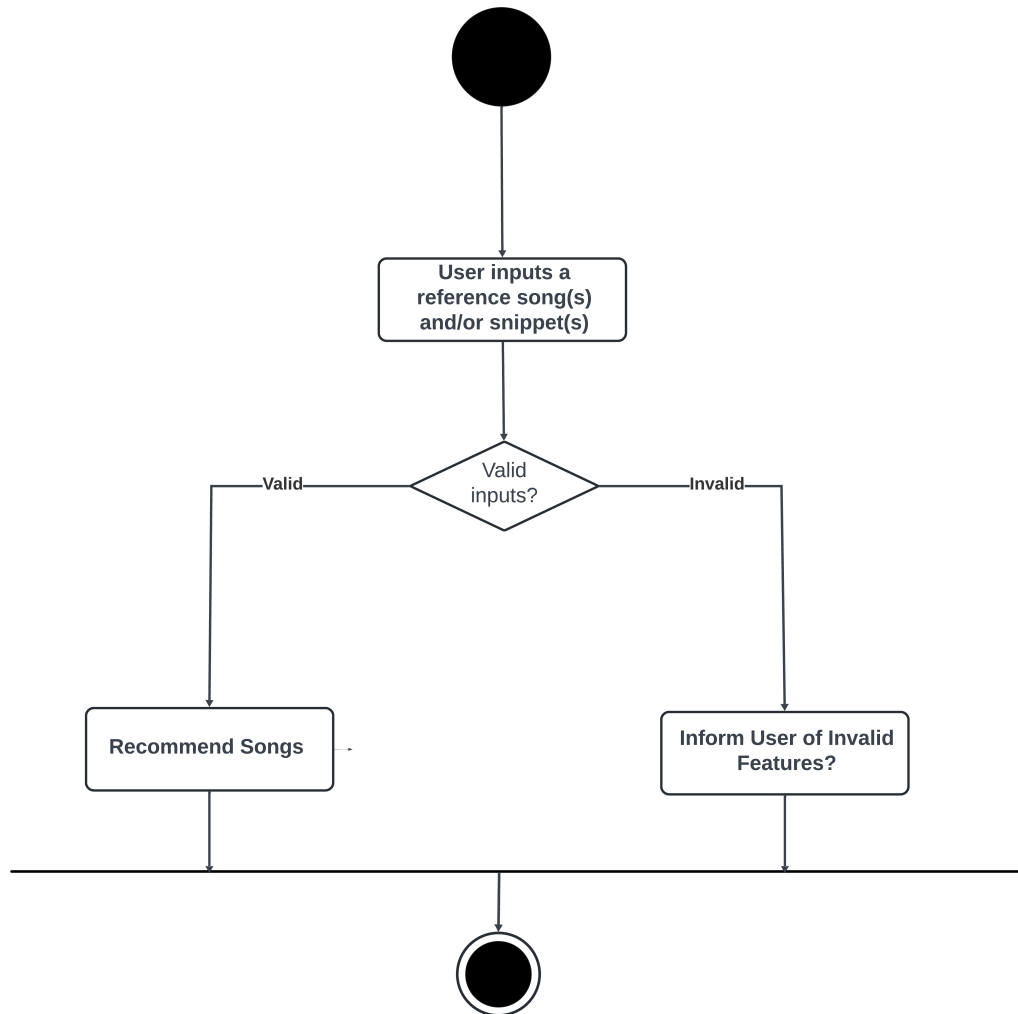
Trigger: User inputs reference song(s) and/or snippet(s), and indicates they want to search for recommendations

Preconditions: User must have GenreGuru open, and the user has provided a valid input(s)

Interested Stakeholders: Casual Music Listeners, Hobbyist Musicians

Actor/s: User

Activity Diagram:



Outcome: The users will input reference song(s) and/or snippet(s), the system will first check to see if the inputs are valid. Then the system will return a collection of reference songs.

6. Product Use Case Name: Server Interaction for Music Generation
Trigger: User submits a reference song and/or snippet and requests music

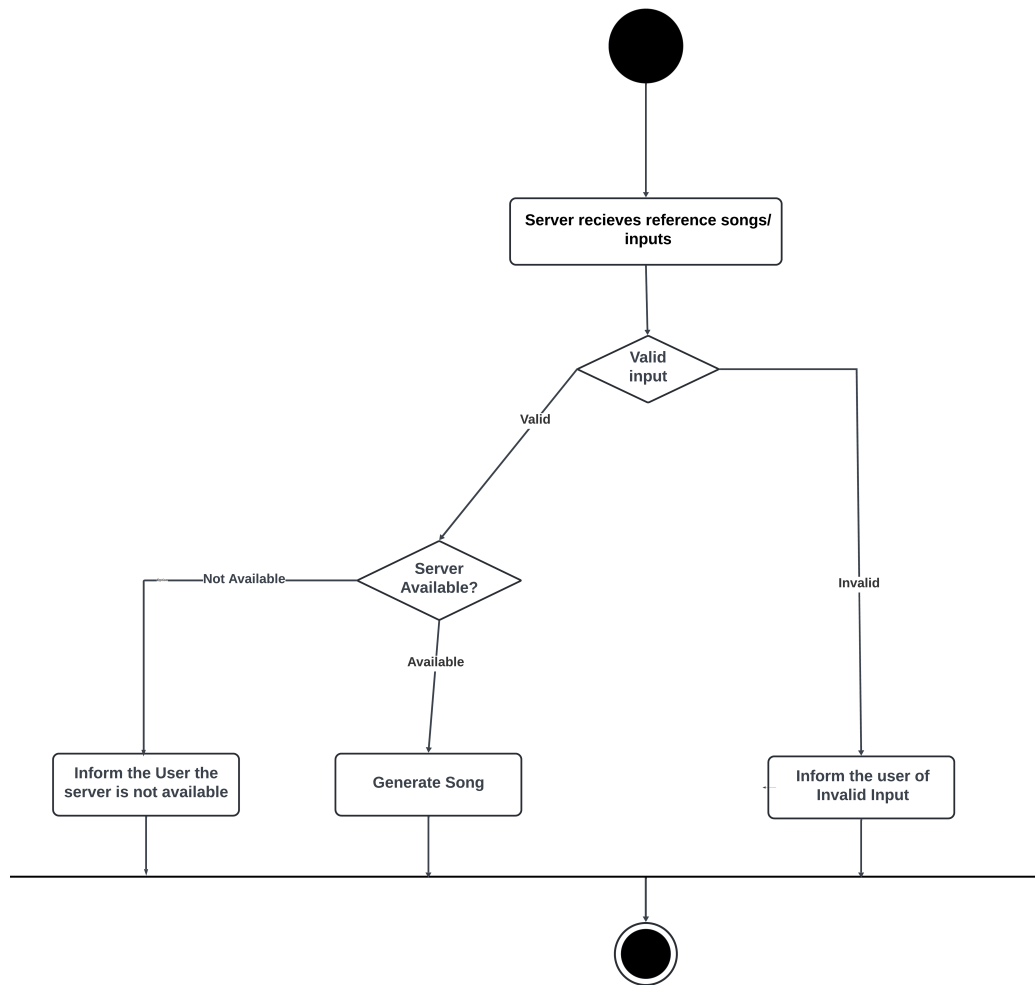
generation

Preconditions: User has provided a valid input through, and the server is operational

Interested Stakeholders: Music Producers, Hobbyist Musicians

Actor/s: Server

Activity Diagram:



Outcome: The server processes the input, generates music, and returns the generated song to the user

7. Product Use Case Name: Server Interaction for Song Recommendation

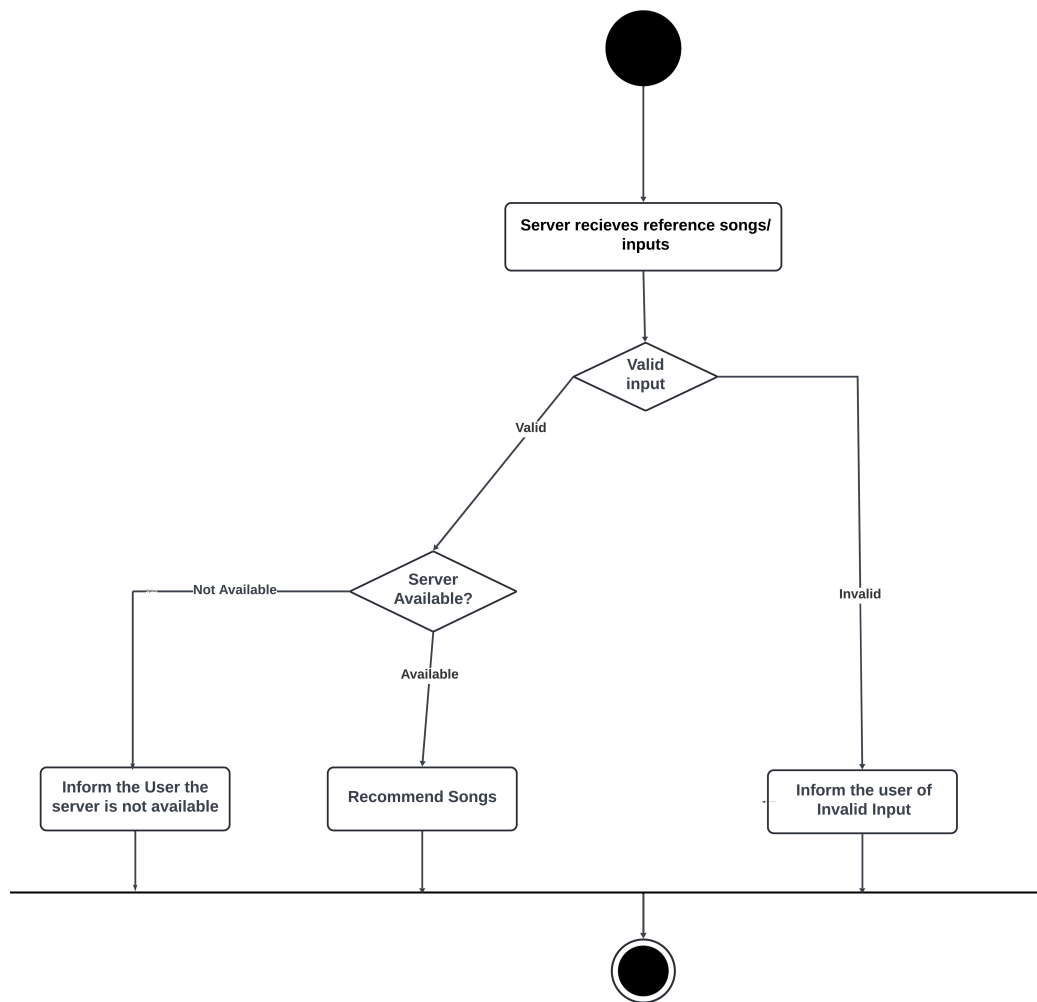
Trigger: User submits desired features or reference songs/snippets and requests song recommendations

Preconditions: User has provided valid input, and the server is available

Interested Stakeholders: Casual Music Listeners, Hobbyist Musicians

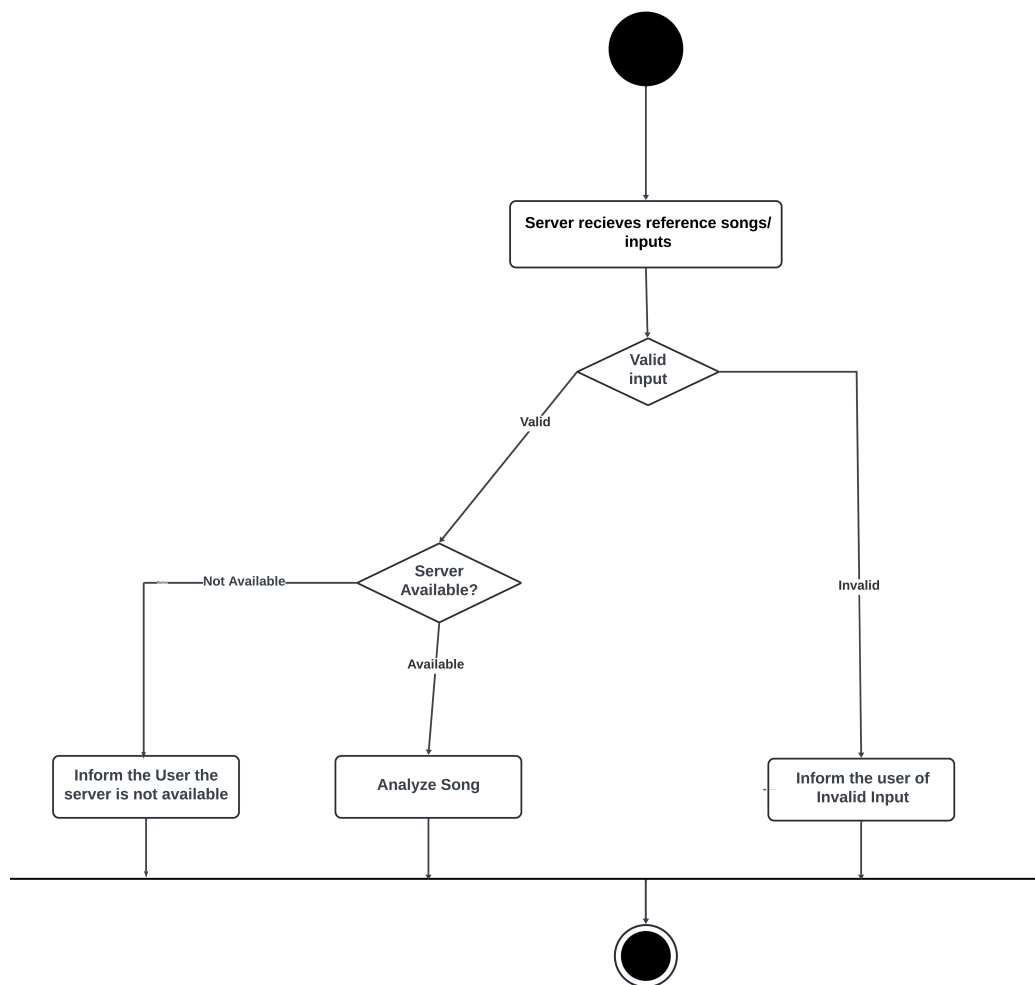
Actor/s: Server

Activity Diagram:



Outcome: The server processes the input and returns a collection of recommended songs based on the input features or reference songs/snippets.

8. Product Use Case Name: Server Interaction for Music Analysis
Trigger: User submits a reference song or snippet and requests music analysis
Preconditions: User has provided a valid input, and the server is ready to analyze
Interested Stakeholders: Music Producers, Audio Engineers, Music Educators
Actor/s: Server **Activity Diagram:**



Outcome: The server analyzes the song or snippet and returns a collection of features and visualizations to the user.

9 Functional Requirements

9.1 Functional Requirements

Insert your content here.

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26 Ideas for Solution

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Appendix — Reflection

The information in this section will be used to evaluate the team members on the graduate attribute of Lifelong Learning. Please answer the following questions:

1. What knowledge and skills will the team collectively need to acquire to successfully complete this capstone project? Examples of possible knowledge to acquire include domain specific knowledge from the domain of your application, or software engineering knowledge, mechatronics knowledge or computer science knowledge. Skills may be related to technology, or writing, or presentation, or team management, etc. You should look to identify at least one item for each team member.
2. For each of the knowledge areas and skills identified in the previous question, what are at least two approaches to acquiring the knowledge or mastering the skill? Of the identified approaches, which will each team member pursue, and why did they make this choice?