

Project: Music Room

Team No.: Team 13

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Module: System Requirements Analysis (SRA)

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Contributors:

Revision History

<i>Version number</i>	<i>Date</i>	<i>Originator</i>	<i>Reason for change</i>	<i>High level description of changes</i>
1.0	04/02/2015	Name(s)	Initial draft	Initial Creation of Document

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1. Introduction and Project Overview

Since the advent of mobile mp3 players revolutionized the way we listen to music, the process of listening to music has become more solitary. Because of this, the act of sitting down and listening to a music file in a group setting seems far more laborious than simply listening to it on your phone. In order to make music sharing a more dynamic experience than a simple file transfer, this product will provide a synchronized music sharing room through which the user can upload and listen to songs at the same time as other members of the room.

Music Room will be an Android application that allows the user to stream music from one device to another via Bluetooth in real time. This interaction will occur on a screen known as the Music Room. Each user may create a music room that contains 1-7 users, a chatroom, a dynamic playlist, and a player. The menu screen, creation screen, settings screen, and music room will be the only four screens in this application.

This product will allow the sharing of music over two or more Blue-Tooth enabled Android devices. Not only will the users be able to share music with each other they will be able to chat with one another without having to leave the application.

2. Objectives

2.1 BUSINESS OBJECTIVES

The following is a list of business objectives:

Objective 1: The application should have access to the device music library

Objective 2: The application should be able to upload music files to other devices

Objective 3: The application should work with the Android platform

Objective 4: The application should be able to receive music files from other devices

Objective 5: The application should be able to play compatible music files

2.2 SYSTEM OBJECTIVES

The following is a list of system objectives:

Objective 1: Music Room must be an Android application.

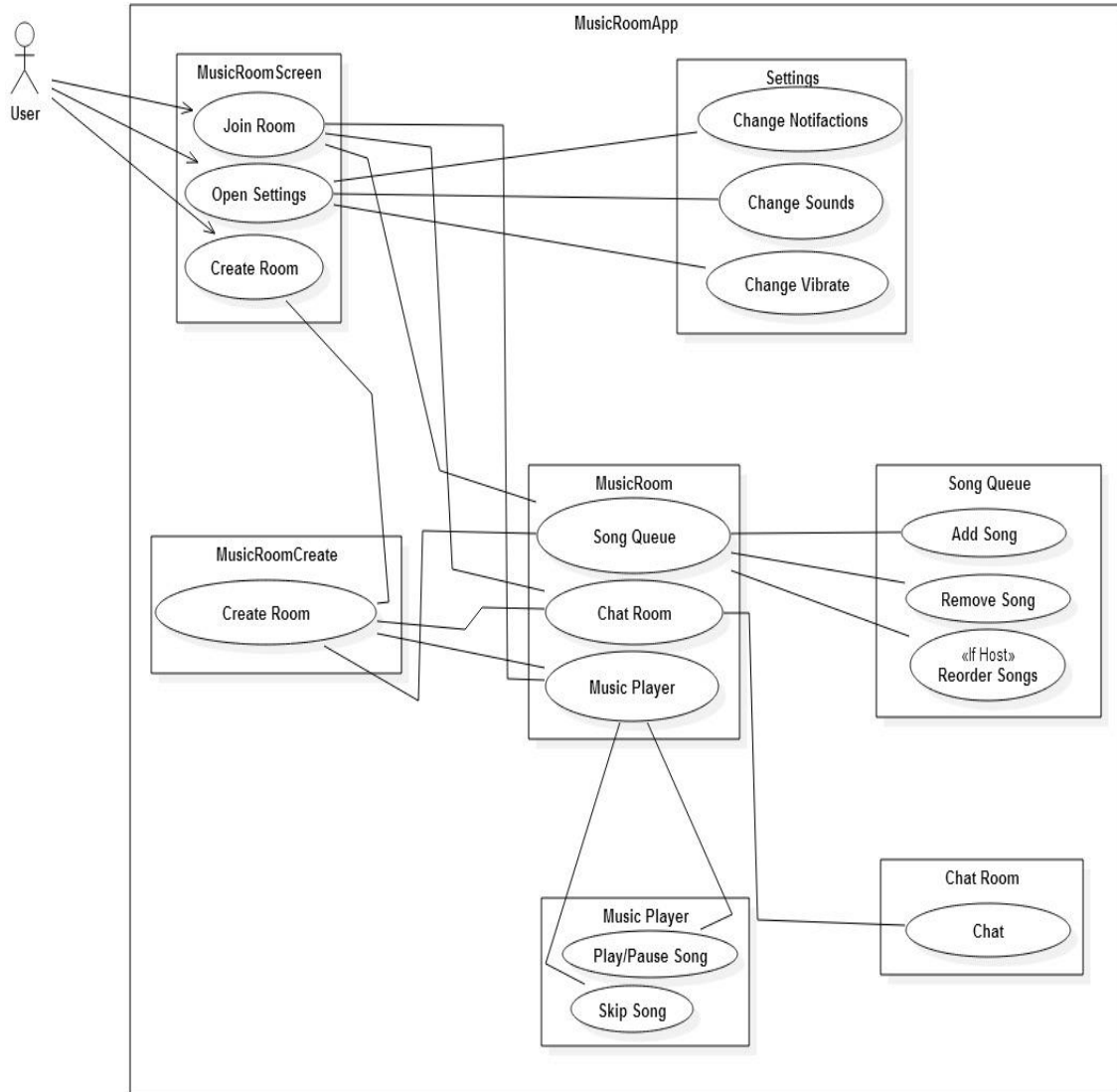
Objective 2: Data storage: system must have enough storage available to “buffer” at most 2 songs as well as store the current playing song.

Objective 3: The application should be compatible with Android versions 2.0 (Ice Cream Sandwich) through 4.4 (KitKat)

Objective 4: The application should utilize BlueTooth, and conversely, the hardware should have BlueTooth capability.

Objective 5: The application should be able to store no more than 3 songs

3. Project Context Diagram



4. Systems Requirements

{Introduce the following requirement sections that correspond with the “user” functionality. Keep hardware, database, test data, and web hosting to section 5. Add a new section for each category of your requirements. This is the heart of the SRA document, and hence the lengthiest, and should list all requirements of the system. **Please use the designated Requirements Form, insert forms below.**}

4.1 “MUSIC ROOM SCREEN” REQUIREMENTS

Requirement Title: (*required)	4.1.1: Music Room List
Sequence No: (*required)	1 (Enter Room)
Short description: (*required)	The Music Room Screen should have a updateable list of Music Rooms
Detailed Description: (*required)	The application will search automatically upon opening for new Music Rooms and they will be listed in the Music Room List.

Requirement Title: (*required)	4.1.2: Join Music Room
Sequence No: (*required)	1 (Enter Room)
Short description: (*required)	The Music Room Screen should allow the user to join a Music Room
Detailed Description: (*required)	By tapping on a music room, a user should be allowed to join any music room that is listed in the Music Room Screen. This will then direct him to the Music Room that he/she selected.

Requirement Title: (*required)	4.1.3: Open Settings
Sequence No: (*required)	3 (Changing Settings)
Short description: (*required)	The Music Room Screen should have a button that allows access to the Settings screen.

Detailed Description: (*required)	A settings screen icon will appear in the corner of the Music Room Screen at the top of the context bar, allowing access to general application settings.
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Requirement Title: (*required)	4.1.4: Rescan button
Sequence No: (*required)	1 (Enter Room)
Short description: (*required)	The Music Room Screen should have a button to rescan for new Music Rooms
Detailed Description: (*required)	The user should be able to tap a rescan button which will rescan the room for any changes in access to the Music Rooms available to them. This will supplement the automatic scanning that will already occur.

4.2 “MUSIC ROOM” REQUIREMENTS

Requirement Title: (*required)	4.2.1: Playlist
Sequence No: (*required)	4 (Interacting with Music Room)
Short description: (*required)	The Music Room should have an interactive playlist
Detailed Description: (*required)	Within the Music Room, the user should be able to interact with a playlist, which will allow them to upload and reorder songs to a shared list. This list will be updated by all members of the Music Room.

Requirement Title: (*required)	4.2.2: Chatroom
Sequence No: (*required)	1 (Enter Room)
Short description: (*required)	The Music Room should have a chatroom
Detailed Description: (*required)	The Music Room should have a joint chatroom that allows all members to comment on the song being played. It should send and receive messages.

Requirement Title: (*required)	4.2.3: Player
Sequence No: (*required)	4 (Interacting with Music Room)
Short description: (*required)	The Music Room should have a music player
Detailed Description: (*required)	The Music Room should have a music player that can load songs from the playlist, as well as pause, scrub, and skip to the next song in the playlist.

4.3 “SETTINGS” REQUIREMENTS

Requirement Title: (*required)	Options
Sequence No: (*required)	3 (Changing Settings)
Short description: (*required)	The Settings page should have an interactive list of options
Detailed Description: (*required)	The settings page should allow the user to change the notifications status, and other relevant settings to the functioning of the application.

4.4 “MUSIC ROOM CREATE” REQUIREMENTS

Requirement Title: (*required)	Create Screen
Sequence No: (*required)	2 (Creating Music Room)
Short description: (*required)	Music Room Create should contain a form allowing a user to create a new music room
Detailed Description: (*required)	The Music Room create form should contain an option to input a nickname, the name of the music room, and the first song to be included in the playlist.

4.4 “TEMPORARY FILE MANAGEMENT” REQUIREMENTS

Requirement Title:	Buffer Songs
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(*required)	
Sequence No: (*required)	4 (Interacting with Music Room)
Short description: (*required)	The Temporary File management module should contain a function to buffer songs
Detailed Description: (*required)	The buffer song function should take the next two upcoming songs and place them in the buffer. In addition, it should update should the playlist be changed.

5. Software Processes and Infrastructure

5.1 HARDWARE AND INFRASTRUCTURE

Target Android Version: 4.4 API 19 (Kit-kat)

Minimum Required Android Version: 4.0.2 API 14 (IceCream Sandwich)

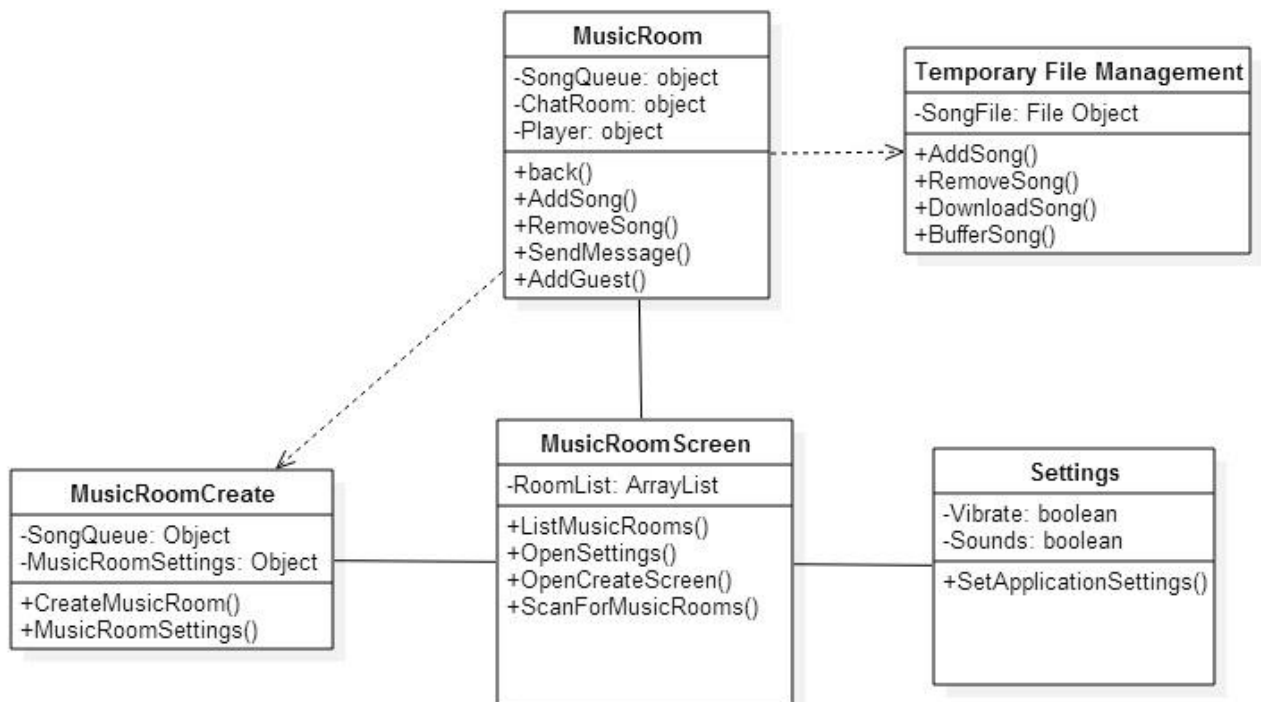
Requires Bluetooth compatible device

Device requires the ability to play Android supported audio files

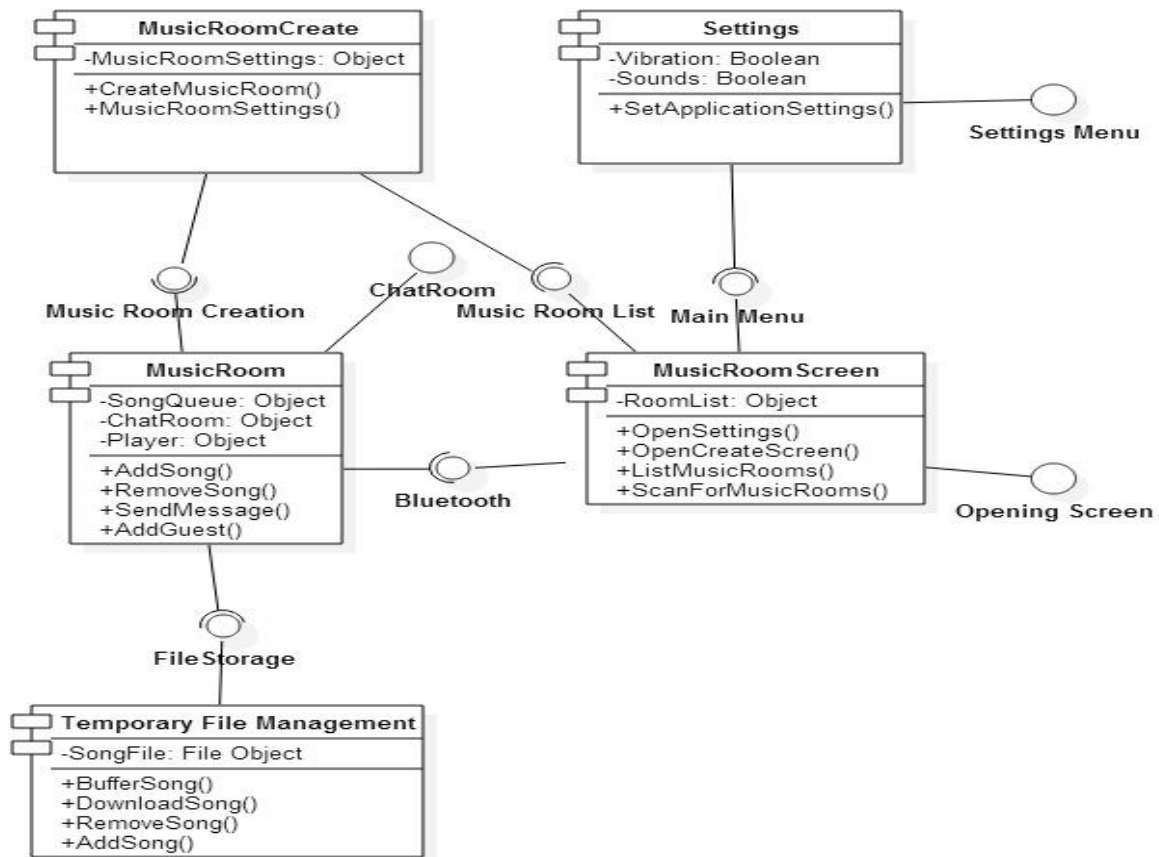
Device requires the ability to both send and receive audio files from any other device running application

5.2 UML DIAGRAMS

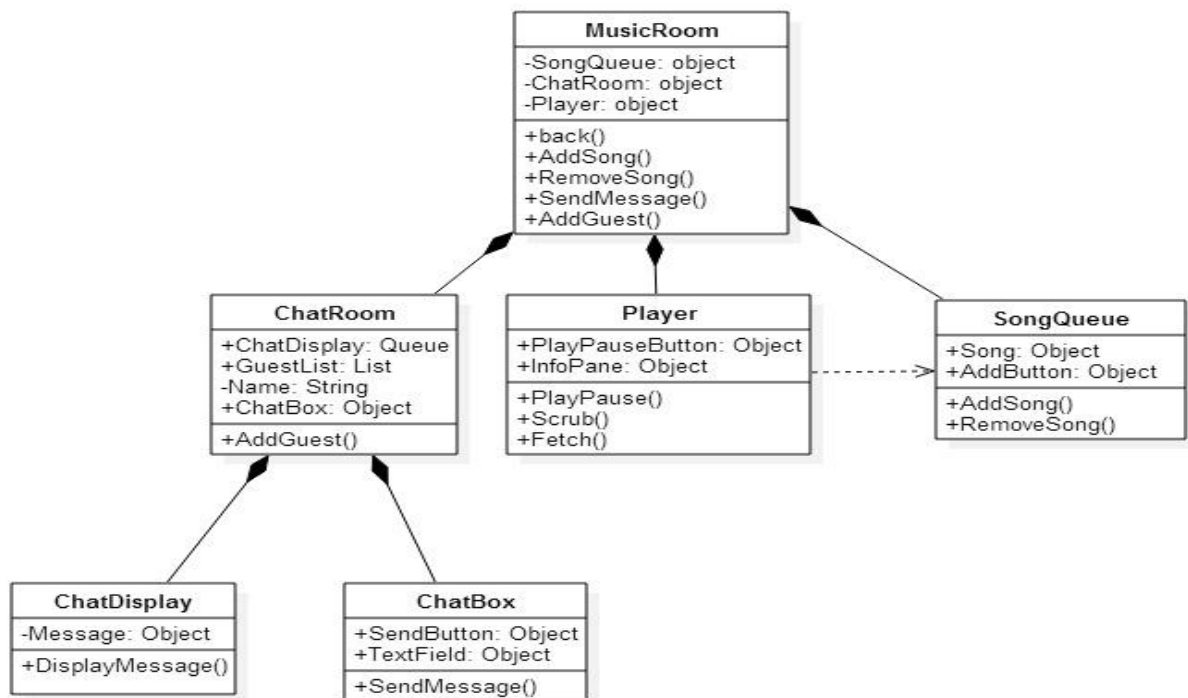
Big Picture UML



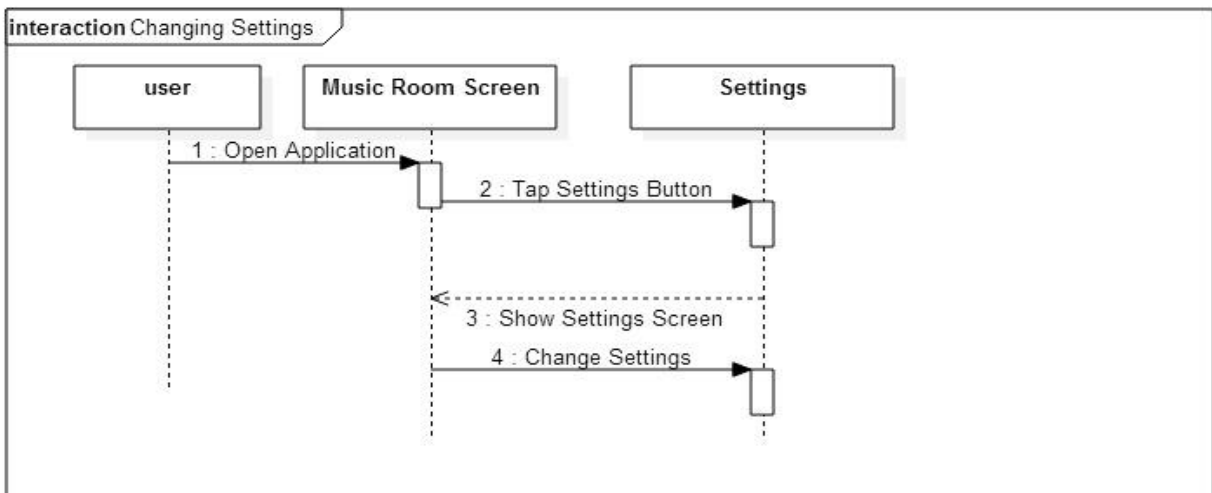
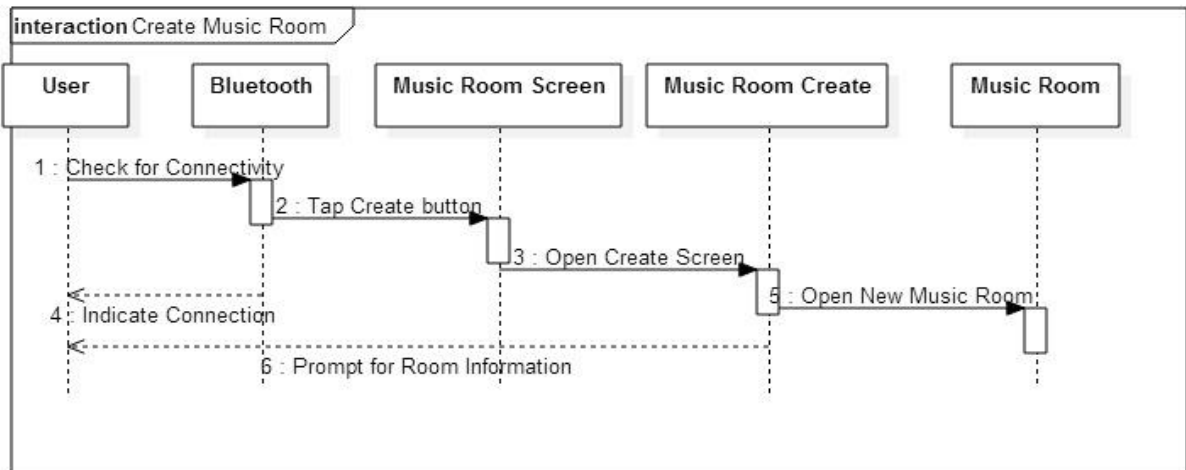
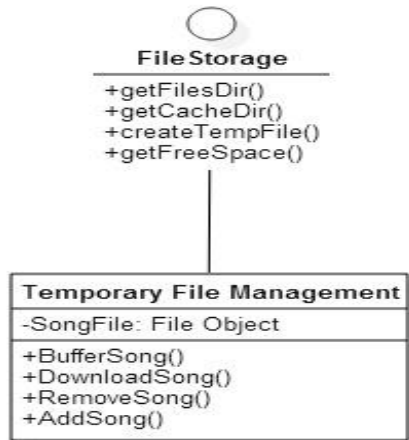
UML - Component Diagram

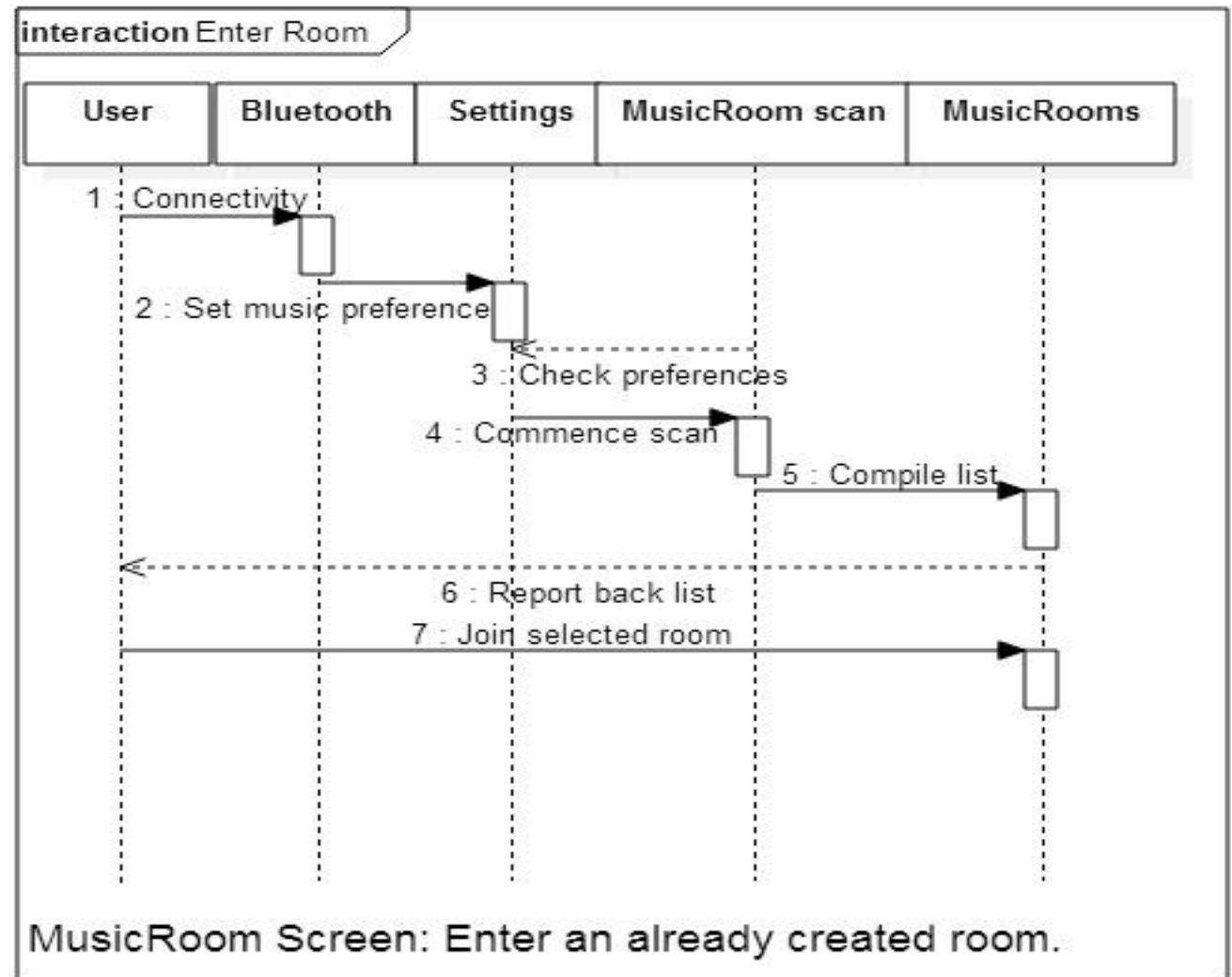
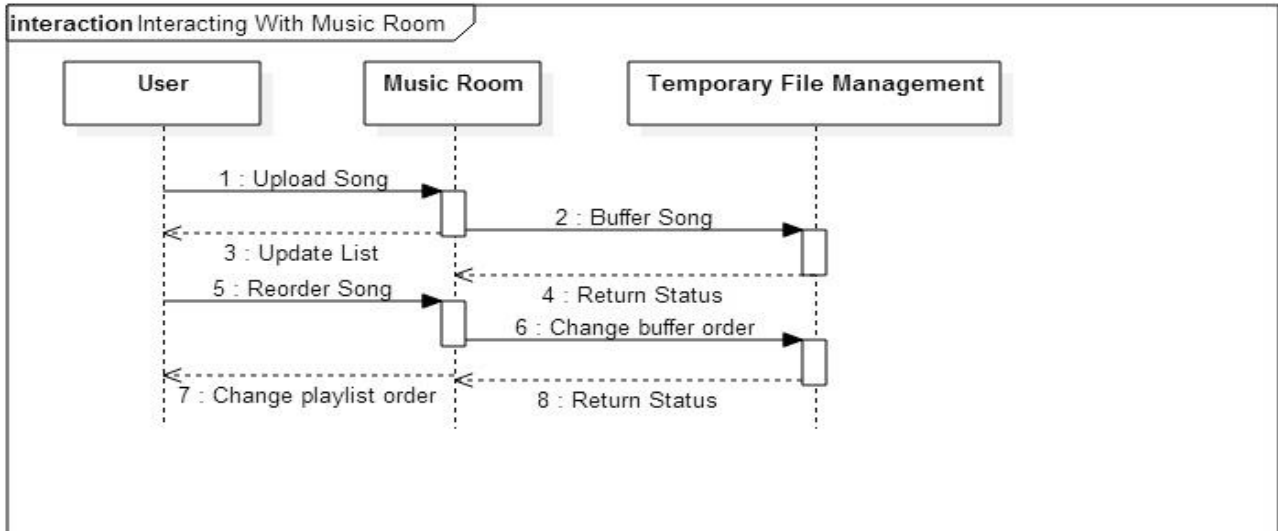


UML - Music Room Class Diagram

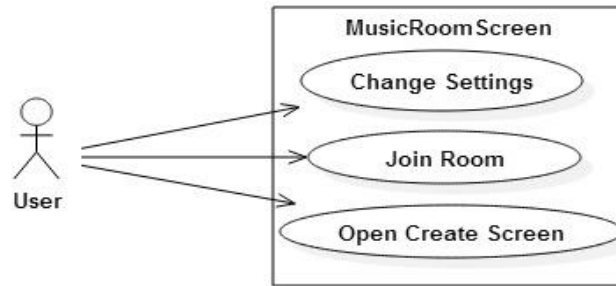


UML - Temporary File Management

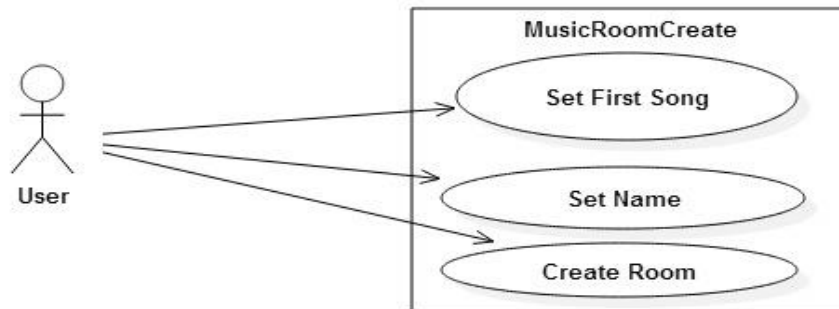




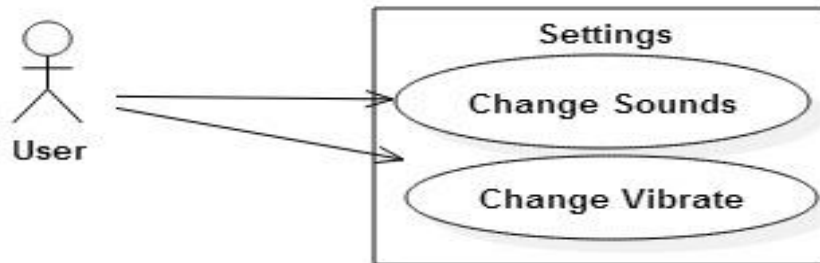
UML Use-Case: Music Room Screen



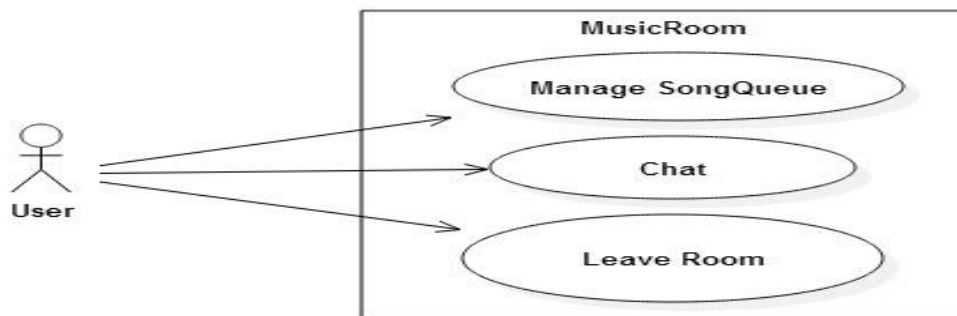
UML Use-Case: Music Room Create



UML Use-Case: Settings



UML Use-Case: Music Room



5.3 CONCEPTUAL DATA MODEL – DATA STORAGE (I.E. DATA ELEMENT AND HOW THEY ARE KEPT, I.E. IN A DATABASE, FILE, ETC.)

The songs the application will have access to will be stored in the devices music directory.

The songs that are being buffer to play next will be stored in the Android's built temporary file storage

The data storage should only hold at most 3 files, 2 "buffered" songs, and the song currently playing

5.4 SCREEN SHOTS

None available at this time.

5.5 TEST PLAN

A test plan will be provided at a later stage in this project

6. Assumptions and Constraints

6.1 ASSUMPTIONS

The following is a list of assumptions:

- Only Android compatible song files will be played
- Only songs that are located in the Android's specific music location will be played
- The Android system on the phone is the correct version and is not corrupted

6.2 CONSTRAINTS

The following is a list of constraints:

- Team lacks android experience
- Schedule very aggressive
- Application requires in depth knowledge of Android Bluetooth interaction

6.3 OUT OF SCOPE MATERIAL

The following is a list of "out of scope" material:

- Post Project maintenance is not covered
- Marketing the project to the correct audience is not covered
- How to put the project on a storefront is not covered

7. Delivery and Schedule

Task/Milestone Description	Anticipated Start Date	Anticipated End Date	Status	Comments
Prepare Requirements and UML diagram	2/3/2015	2/26/2015	Complete	
SRA document (Includes project objectives and Requirements)	3/1/2015	4/2/2015	In Progress	Deliverable will be the SRA document. All stakeholders agree on the content of the SRA by signing in section 8.
Screen design and Navigation	4/2/2015	4/7/2015	In Progress	
Data storage Design	4/7/2015	4/12/2015	Not Started	
Implementation	4/12/2015	4/17/2015	Not Started	
Test Data Entry	4/17/2015	4/23/2015	Not Started	
Test Plan Delivery	4/23/2015	4/23/2015	Not Started	
Client presentations	4/23/2015	4/28/2015	Not Started	
External Documentation (i.e. User Manual)	4/23/2015	4/28/2015	Not Started	
Final Milestone: project delivery	5/7/2015	5/7/2015	Not Started	

8. Stakeholder Approval Form

Stakeholder Name	Stakeholder Role	Stakeholder Comments	Stakeholder Approval Signature and Date
Bahram Khalili	Development Mgr		
Mehrab Shahriar	Project Assistant		
Micah Dumont	Developer		
Jacob Burchard	Developer		
Calvin Hovsepian	Developer		

Appendix:

None