Phase 2 Software Progress Report

Card Czar Android App

CMSC 495

Group 2 Final Project

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# Schedule and Milestones

For convenience, a snapshot of the last 4 weeks of the project schedule has been included. The full schedule can be seen in the Card Czar Project Plan.

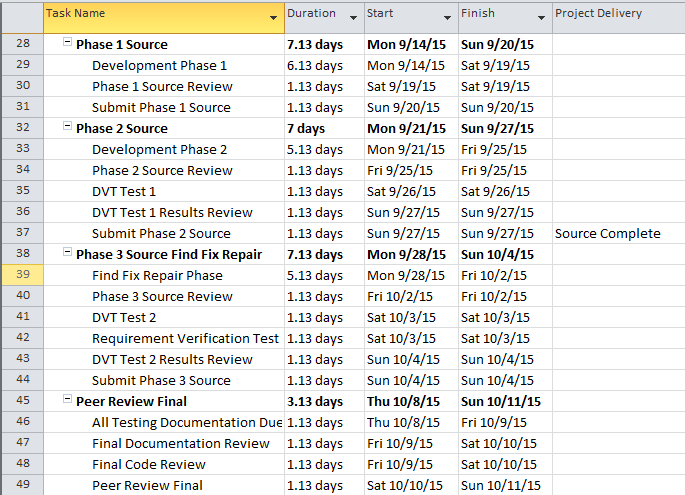


Figure 1.0-1: End of Project Milestones

## 1.1 Milestone Progress

Phase 2 is about a half a day behind schedule. One of the developers on the team has been non-responsive and did not complete his tasks. So, only about 95% percent of game functionality was completed, instead of the anticipated 100%. This missing functionality encapsulates the ability for the app to recognize that someone has won the game, and communicate to all players that the game is over. Other than that, the team has been able to adhere to the schedule documented at the beginning of the project.

As well as development, testing has progressed during this phase of the project. The test team has written test cases against the requirements documented in the System Design Document. These test cases have been run against the Phase 2 software release, and bug or enhancements have been documented in the project’s GitHub instance. See Section 4 for more detailed testing information.

In the next phase the team will complete the game-over functionality that was not completed in this phase. Review any bugs or enhancements found during Phase 1 testing and determine which bugs will be resolved in Phase 3. The test team will also perform final testing of the application and document their results.

## 1.2 References

* Project Plan, Card Czar Android Application
* Test Plan, Card Czar Android Application
* Software Design Document, Card Czar Android Application
* Phase 1 Software Progress Report, Card Czar Android Application

# 2.0 Lessons Learned

Group two worked through a few issues this phase, but was able to successfully navigate most of them.

## 2.1 Barriers and Resolution

### 2.1.1 Emulators

The team originally started out using the Intel® Hardware Accelerated Execution Manager that comes with Android Studio. This emulator turned out to be a memory hog and many of the team members were unable to run multiple emulators to simulate game play. Instead we were making updates to the database (using a web page that made call to our PHP files) to advance the game. When we were able to get multiple players or emulators to run, we were able to find some bugs in the code that were not shown by making the database updates. Due to the memory constraints some of the team is switching to other emulators, such as GENYMOTION, to resolve this issue.

### 2.1.2 Team Communication

As the team has progressed we have found that good communication has become more important than ever. This communication has fallen into two categories for us. First, keep everyone apprised of the current status for the project, such as the developers letting the test team know what is done and ready for test. As well as how development is progressing against the document schedule. Second, as formal testing has started, it has become crucial for multiple team members to act as game players and test out the application on their emulators. To make sure the application is functioning as expected, each teammate must communicate with each other what their last move was, what they see on the screen and whether any errors have occurred. While it is challenging not being in the same location, we have found that we have been able to utilize simple tools, such as Google Hangouts or Gmail, to communicate effectively.

## 2.2 Project Reevaluation

### 2.3.1 General

Despite being a little behind schedule, the team believes that we have made the correct decisions as the project has progressed. Though some of the bugs discovered during testing seem a little daunting, the team is excited to see the app (mostly) working and it’s refreshing to see that our test plan was successful (in finding bugs).

### 2.3.2 Tools

Testrail proved to be impressive as a tool for executing our test plan. It demonstrated that our test plan was apt for the project.

The use of github once again proved successful as the team was able to make good use of the issues section. The priority tags (non-github tags) and assignee tasking proved to be useful tools in prioritizing and delegating the work that needs to be done in week 3, while providing a very clear visual to all team members.

# 3.0 Phase 2 Functionality

## 3.1 Functionality Description

### 3.1.1 Overall Application Description (end goal for the project)

The Card Czar Android application is a spin-off of the popular card game Apples to Apples (drawing some inspiration from the similar card game, Cards Against Humanity).

The Card Czar is an android application multiplayer card game that can deliver hours of fun.  It allows a user to create a new game room and invite friends to play with them. For a game to begin there must be at least 3 players. Once a game is started each player is dealt at random a hand of response responses that will be used to respond to the random bait that is chosen for the round. A bait card (text) is chosen and the Card Baron (this is the dealer—either the winner from the last round, or host if it’s the first round) then waits for players to submit responses to that bait. The Card Baron (dealer) then selects from one of the responses and the player who submitted the winning response gains 1 point and becomes the Card Baron for the next round. The first player to get to 5 points wins and is crowned the Card Czar.

### 3.1.2 Phase 2 Functionality

During Phase 2, all game play functionality, except the indication of game over, was completed. As seen in Phase 1, a player is able to host a game room or join an existing game room. Once a game is started, the dealer will wait for users to submit their responses to the bait question and then will pick a winner for the round. The non-dealer players will see the response cards they hold and be able to pick from those cards to answer the bait quest. The Phase 2 development finishes the game play activity. When the winner is chosen, a point will be added to their total points, and they will become the dealer in the next round of the game. The winning response is shown to all users and each user will be able to see their current point total. Next, a new bait card is drawn and automatically displayed to all users. Each round will function the same way until one player reaches 5 points and wins the game. The application currently does not stop the game when a game winner is determined and notify the users that the game is over.

During this phase we have also incorporated the ability for users to quit the game. This will halt any threads spawned by the game, such as the check to see when the game starts, and take the user to message indicating that have quit the game. The application does not currently notify the other players if another player or the dealer leaves the game.

Additionally, all PHP file needed to support communication between the application and the backend database have been completed. Additionally, security, such as setting up HTTPS communication with the LAMP server, has not yet been implemented in this phase of development. A breakdown of a sample game follows.

## 3.2 Application screenshots of sample runs

The following screen shots will show a 2 player game, host and user, run through an android emulator. The game will normally require a minimum of 3 players but that requirement has been lift to simplify the screenshots. Note that the bait and response data has been updated since the test plan submission.

### 3.2.1 Normal Test Run

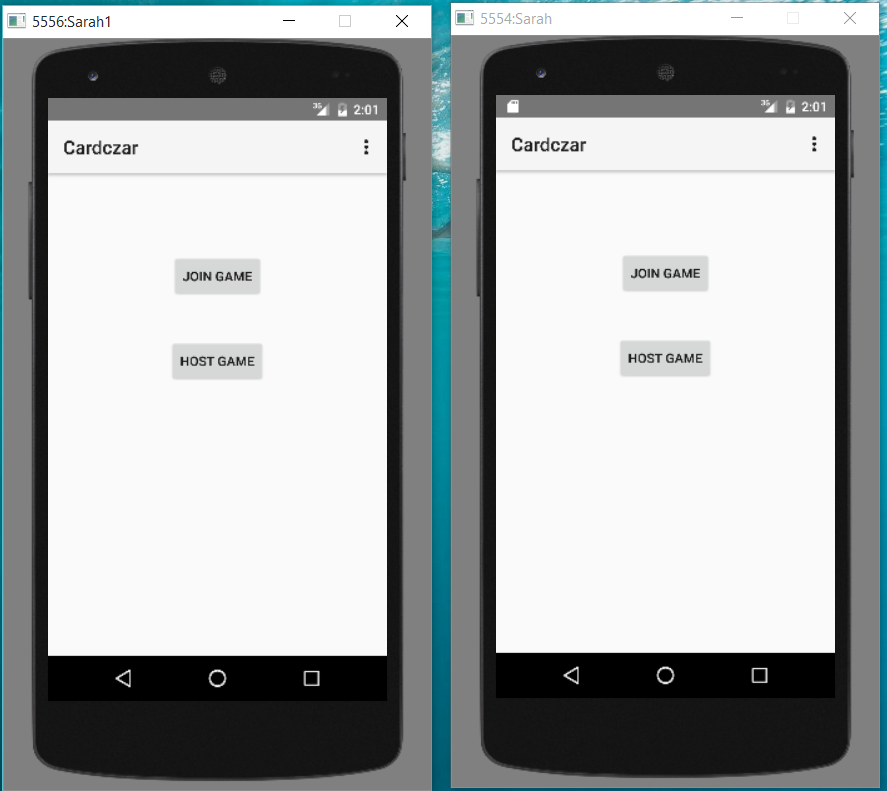
1. **Both player start the application**

Figure 3.2.1-1: Card Czar Startup

1. **Host starts a new game room:** The host has clicked the Host Game button, see Figure 3.2.1-1. The host is then displayed an entry screen, Figure 3.2.1-2, where they can enter the room name and their username. The host then clicks the Start Room button and is taken to the Room Activity, Figure 3.2.1-3, display to wait for other players to join the game.

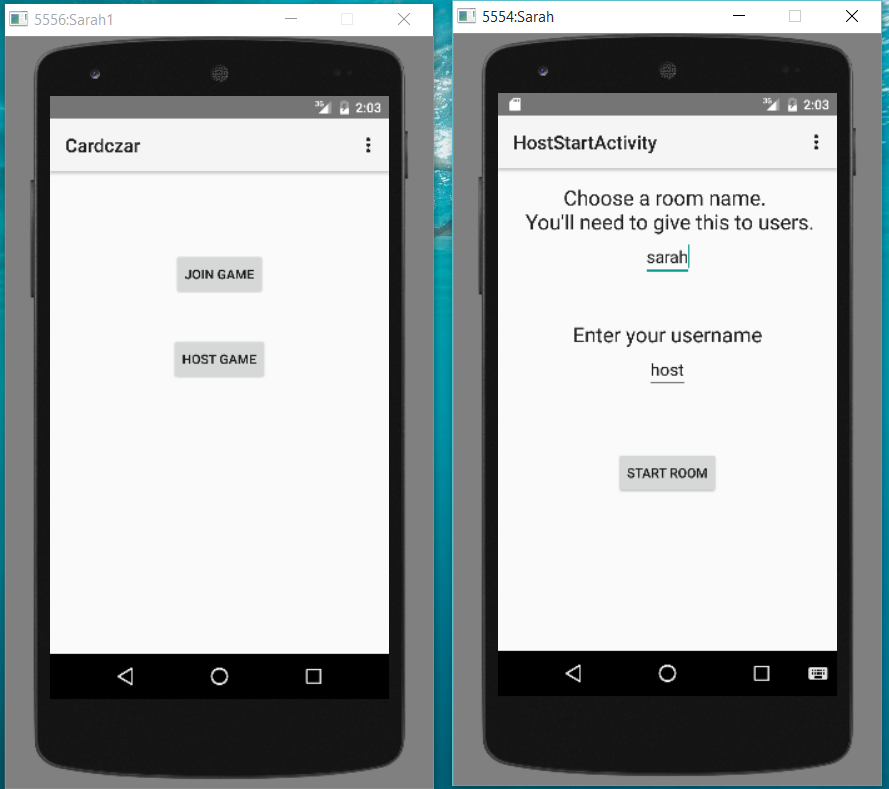


Figure 3.2.1-2: Host Room Entry Screen

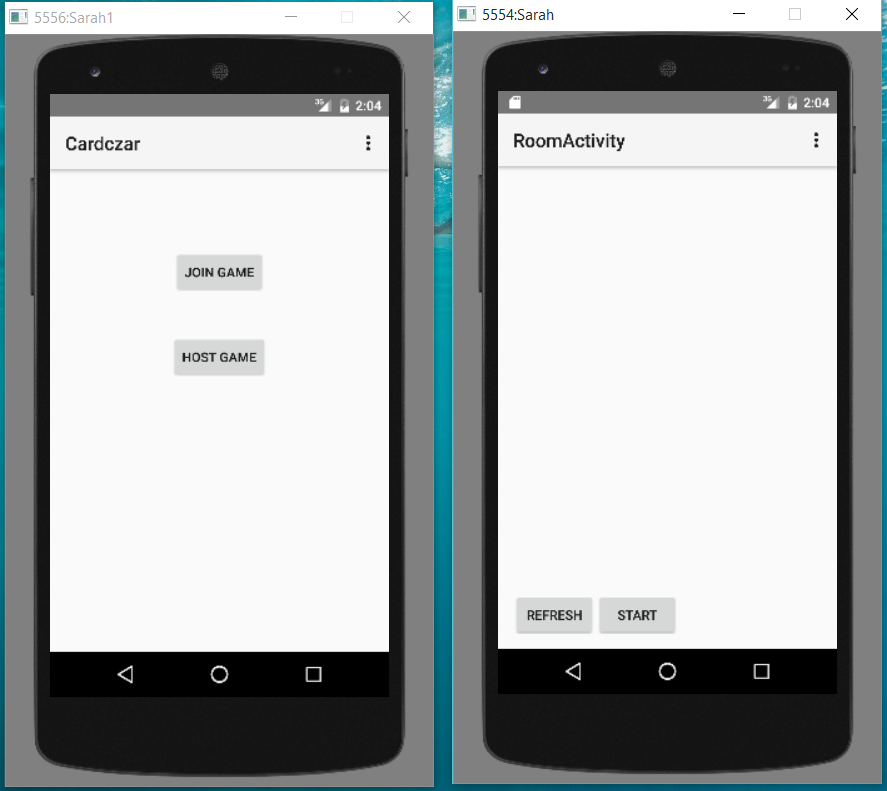


Figure 3.2.1-3: Game Room Created

1. **New player joins game:** A new player has clicked the Join Game button, see Figure 3.2.1-1. The player is then displayed an entry screen, Figure 3.2.1-4, where they can enter the name of the room to join and their username. The player then clicks the Join Room button and is taken to the Waiting Activity, Figure 3.2.1-5, display to wait for the host to start the game.

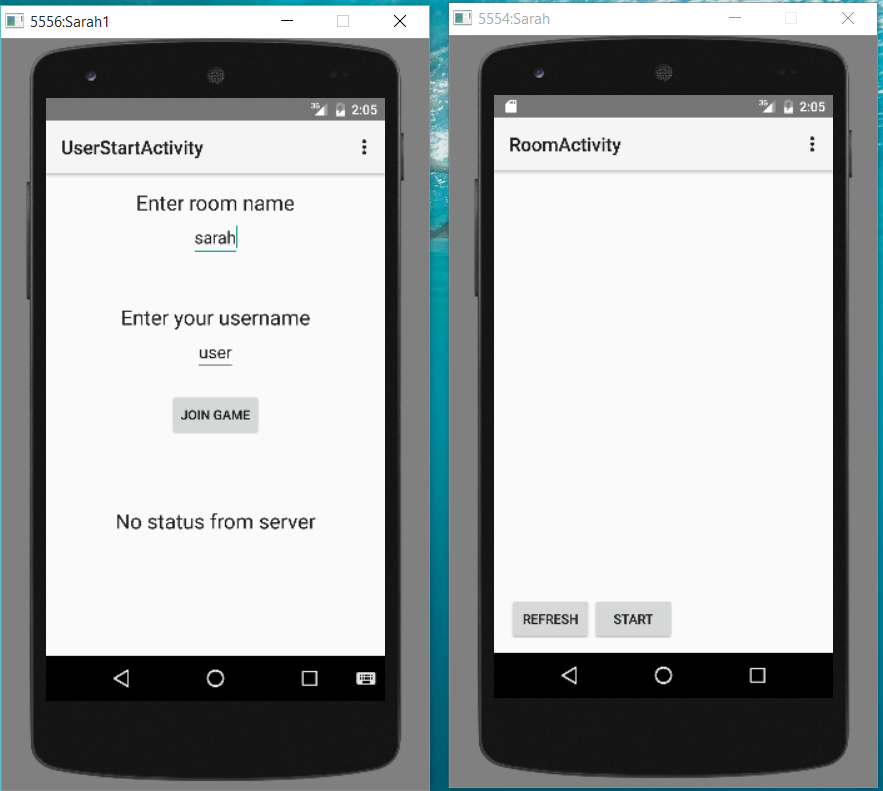


Figure 3.2.1-4: Join Room Entry Screen

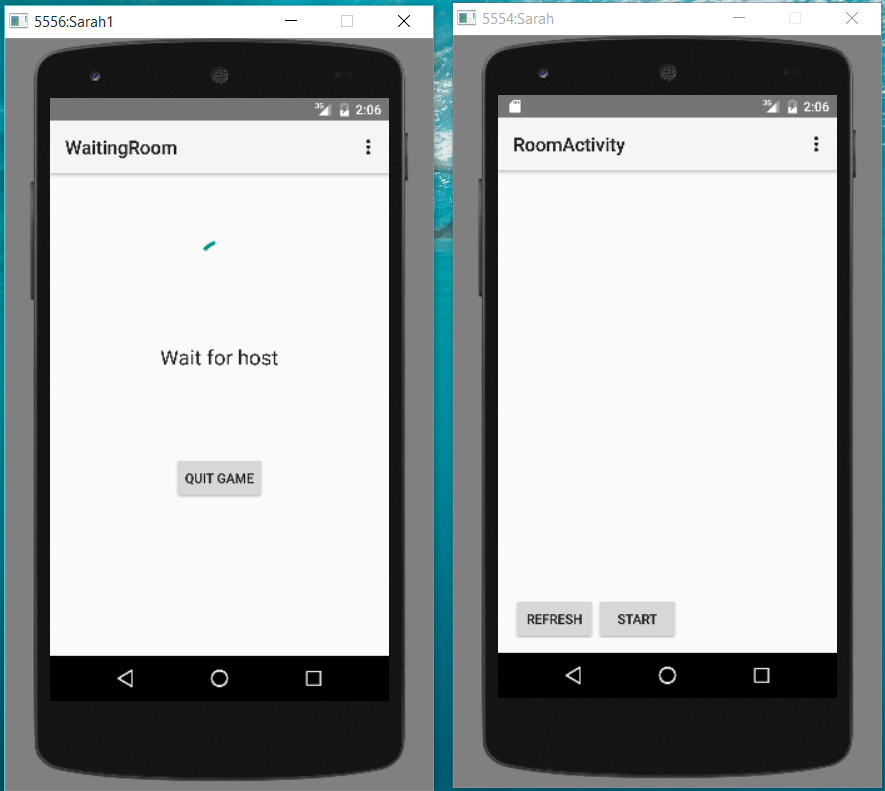


Figure 3.2.1-5: Joined Game and Waiting for Game Start

1. **Host starts game play:** The host will refresh the room to see the players currently in the room and if there are enough players to start a game, Figure 3.2.1-6. To start the game, the host will click the Start button and the game starts for all players, Figure 3.2.1-7. The host becomes the dealer for the first round of play.

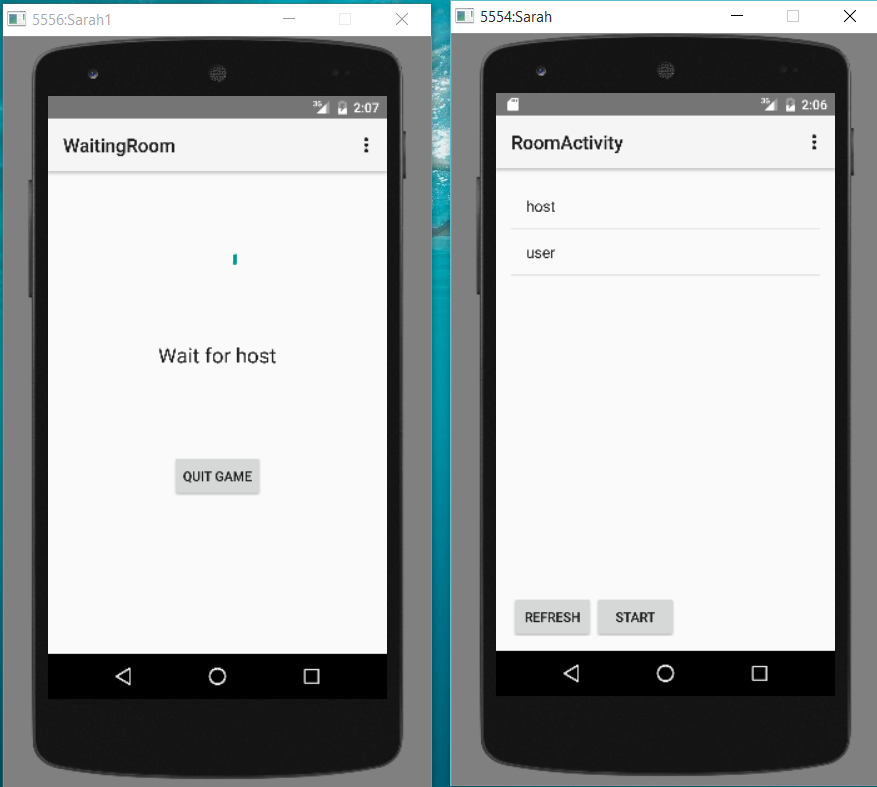
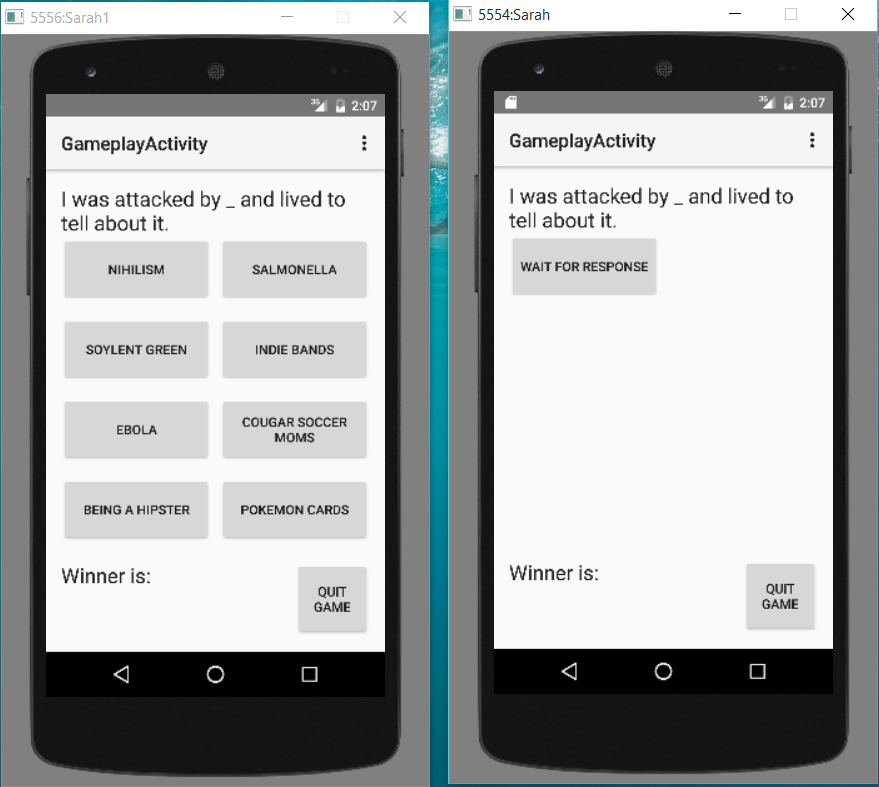


Figure3.2.1-6: Host Refreshes Game Room

Figure 3.2.1-7: Game Play Started

1. **User chooses a response to bait question:** Each non-dealer will see the bait question and choose one of their response card to send to the dealer. When they choose a response they will automatically be given a new response card. Compare Figures 3.2.1-7 and 3.2.1-8 and see where Cougar Soccer Moms (the response the user submitted) is replaced by Decomposition. When all players have submitted their responses, the dealer’s cards will change to display the users’ responses, see Figure 3.2.1-8.

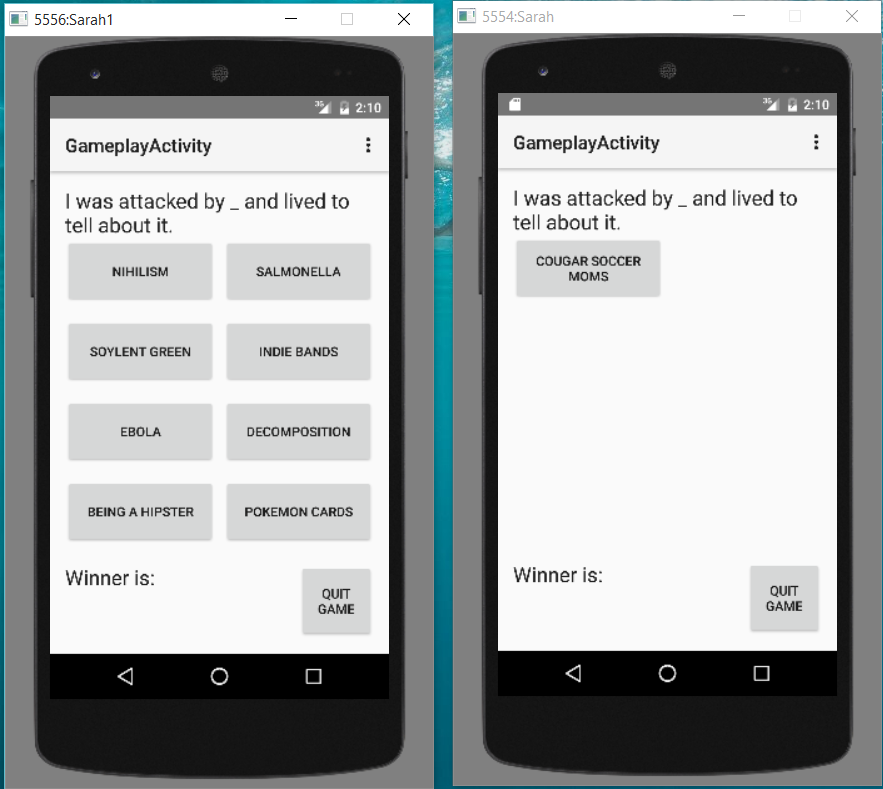


Figure3.2.1-8: All Non-Dealer Responses Submitted

1. **Dealer chooses winning response:** Once all the responses are in, the dealer will choose the winning response. At that time, the winning player becomes the new dealer and a new bait question is automatically selected and displayed. In addition, each players display will be updated to show the winning response from the last round and what their current point total is.

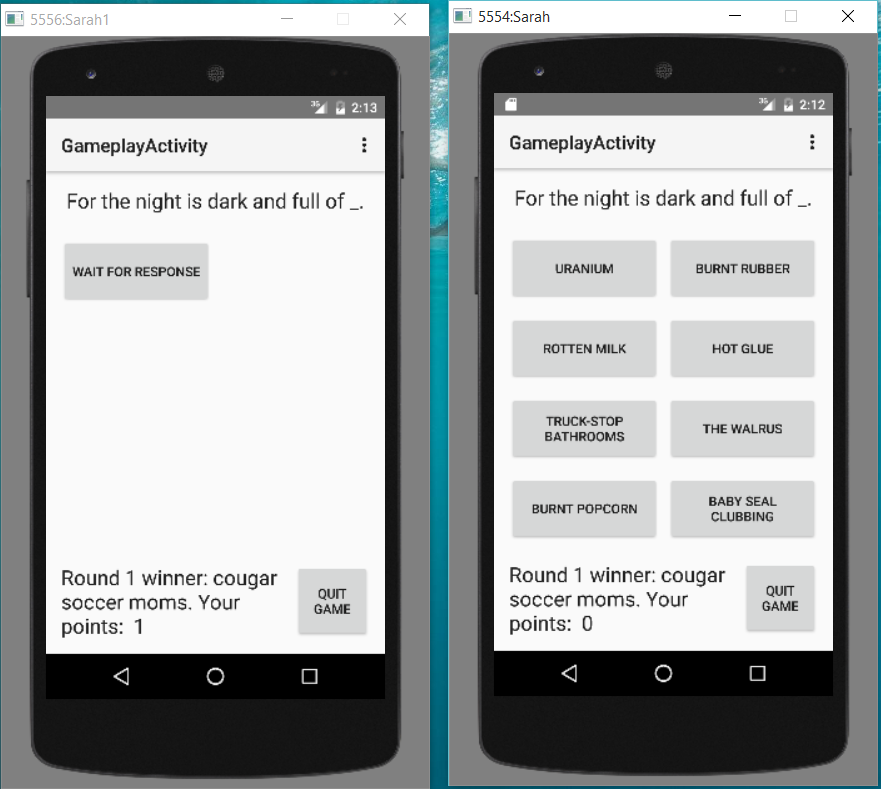


Figure 3.2.1-9: Winning Response Chosen

1. **Last Round:** The game play will continue as shown in Figures 3.2.1-7 through 3.2.1-9. The following screen shots show what the last round would be. You can see that the players have just finished round 8, Figure 3.2.1-10 and both have 4 points. After the end of round 9, the user on the left has 5 points and would win the game. This functionality is currently not implemented so the game continues, see Figure 3.2.1-12.

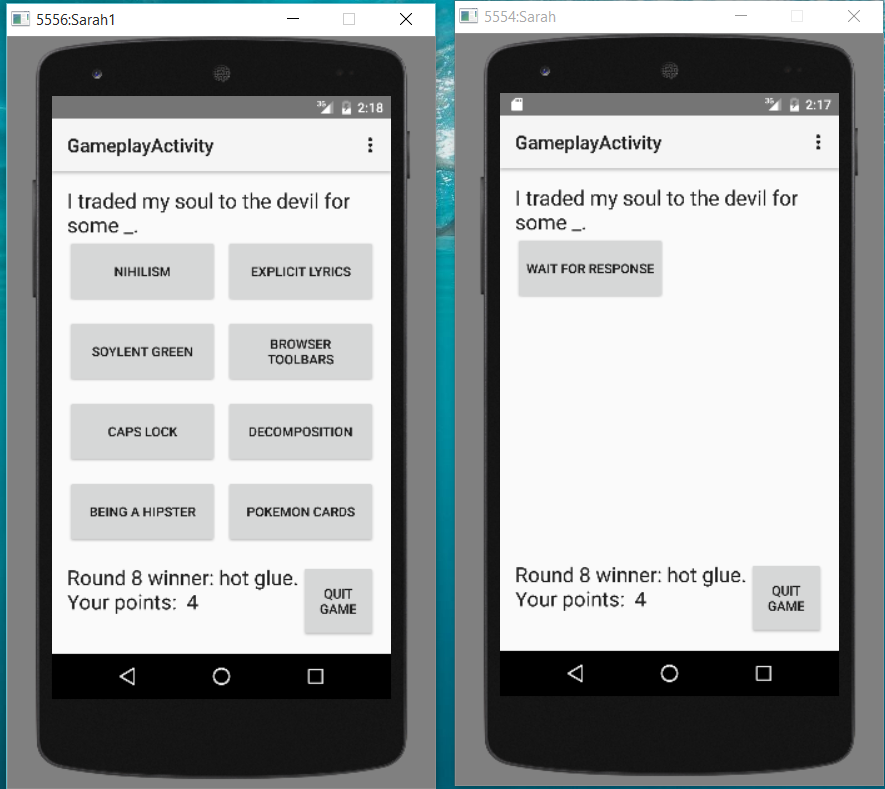


Figure 3.2.1-10: Last Round- Waiting for Players to Submit Responses

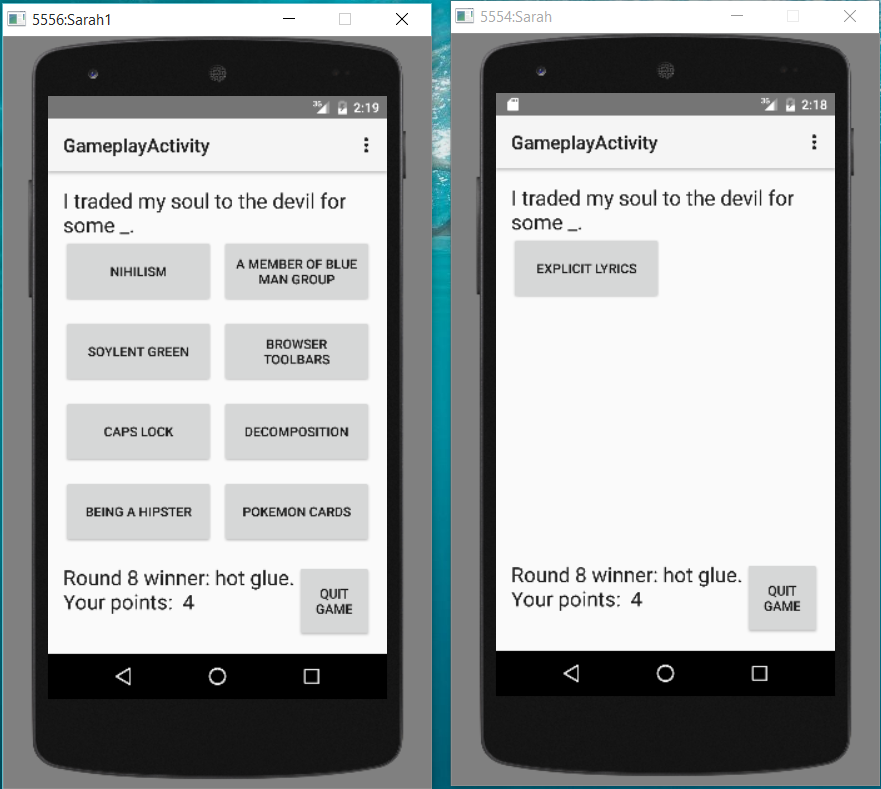


Figure 3.2.1-11: Last Round- Waiting for Dealer to Choose Winning Response

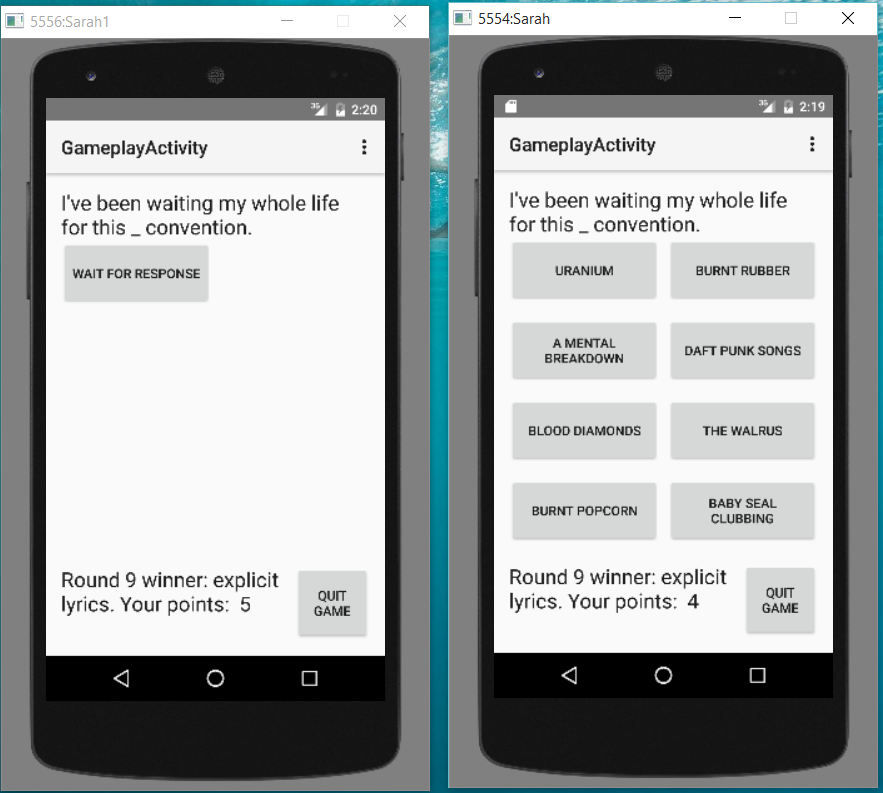
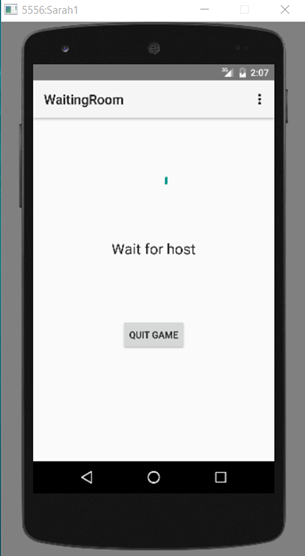


Figure 3.2.1-122: Last Round - Winner Chosen

### 3.2.2 Player Quits Game

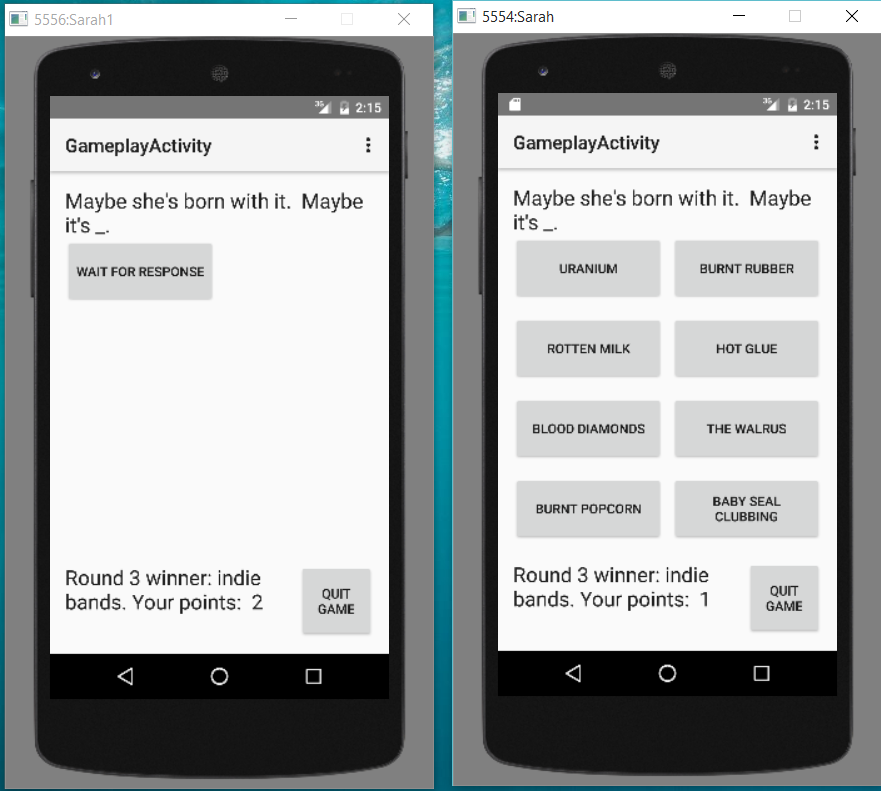
1. **Waiting Room Quit Option**



**Quit Button**

Figure 3.2.2-1: Waiting Room Screen with Quit Button

1. **Game Play Quit Option**



**Quit Button**

**Quit Button**

Figure 3.2.2-2: Dealer and non-Deal Game Play Quit Buttons

1. **Quit Game Display:** When a user quits playing the game, no matter in what stage they quit the game, they will be displayed the same quit message.

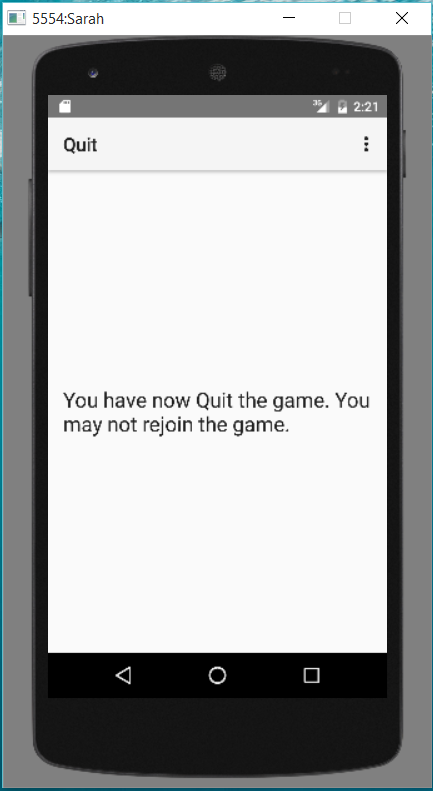


Figure 3.2.2-3: Quit Game Display Message

### 3.2.3 User Name Taken

If a user tries to join a game room, and the user name they selected is already used in that room, then they will receive an error. The error indicates the name is already take and to choose another.

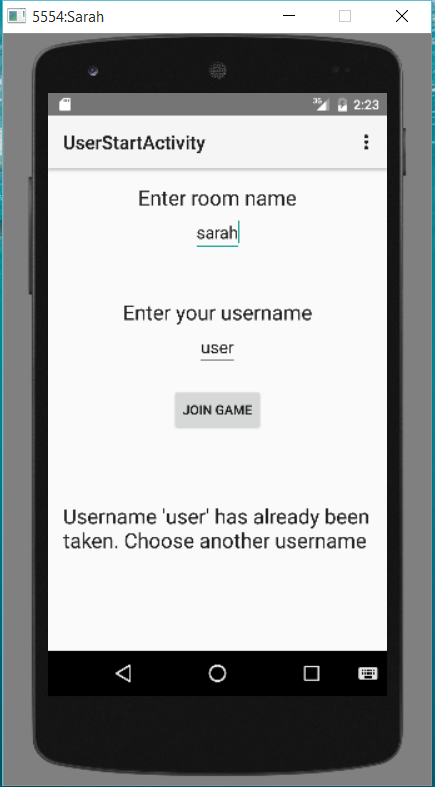


Figure 3.2.3-1: Error Message When Username Already Taken

## 3.3 Source Code

The phase 2 source code can be viewed at <https://github.com/cmsc495fall/Cardczar/tree/Phase2>. The Android application files are stored in the app subdirectory of this project. The middleware, PHP files, are located in the php subdirectory of this project.

## 3.4 Build Process

The team is using Gradle (a tool bundled with Android Studio) to build their android application.

# 4.0 Testing Information

## 4.1 Test Plan Execution

The team chose to document their test cases in Testrails. To see the test cases, their descriptions and the results a guest account has been provided. The Test Rails project can be accessed at <https://cardczar.testrail.net/index.php?/runs/view/1&group_by=cases:section_id&group_order=asc>. The login information is email address=CMSC495Guest@aol.com and password=cmsc495.

|  |  |
| --- | --- |
| **# Test Cases Performed** | 47 |
| **# Test Cases Passed** | 40 |
| **# Test Cases Failed** | 7 |
| **# Test Cases Retest Required** | 0 |

## 4.2 Bug/Enhancement Documentation

Below are metrics on the number of issues generated during Phase 2 testing and a listing of those issues. These issues already being worked by the team and the current status can be viewed at <https://github.com/cmsc495fall/Cardczar/issues>.

|  |  |
| --- | --- |
| **# Total Open Issues** | 12 |
| **# High Priority Issues** | 2 |
| **# Medium Priority Issues** | 4 |
| **# Low Priority Issues** | 6 |

Table 4.2-1: Issue Metrics

|  |  |  |
| --- | --- | --- |
| **Issue Type** | **Priority** | **Title** |
| Enhancement | Low | Display current round number instead of GamePlayActivity |
| Enhancement | Medium | Move Quit Game option to menu |
| Bug | Medium | Error checking-Active Player Tries to Start Game with less than 3 players |
| Bug | High | Game progresses and leaves user behind |
| Bug | Medium | myUserNum calculation breaks when user is dropped |
| Enhancement | Low | Room Activity Room Name |
| Bug | Low | Host Start Error Message |
| Bug | Low | Auto-cleanup of databases |
| Enhancement | Low | Host quitting |
| Enhancement | Low | Revealing all answers |
| Bug | High | Gameover |
| Enhancement | Medium | Move quit Button |

Table 4.2-21: Issue Summary