

A dark blue vertical bar runs down the left side of the page. A blue arrow points to the right from this bar, containing the date.

7/11/2017

# Design Document

Software Engineering Large  
Practical - Part 2

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## 0. Introduction

This document consists of design decisions and a sample gameplay for application “Song GO”. High-level specifications and bonus features (\*highlighted between stars\*), which make the game more interesting, are documented alongside screenshots of the game.

## 1. Start Screen

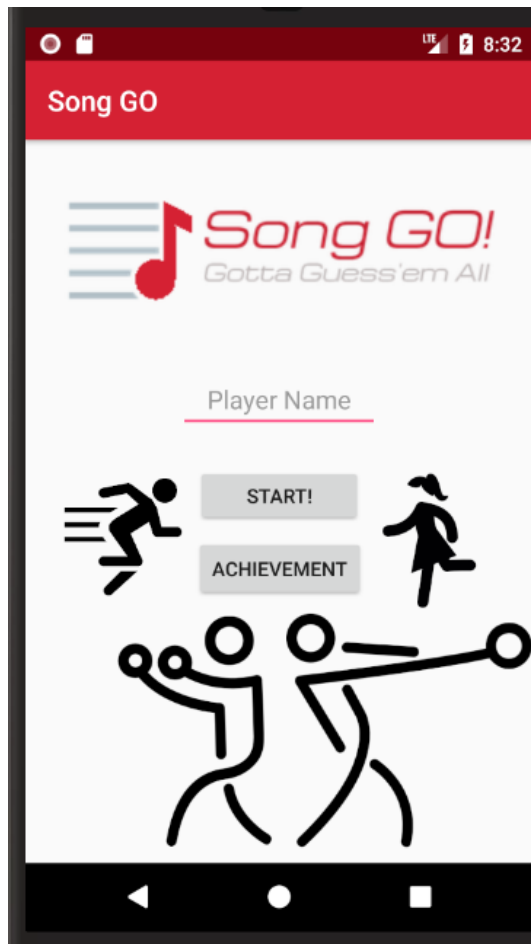


Fig 1.0: Start Screen

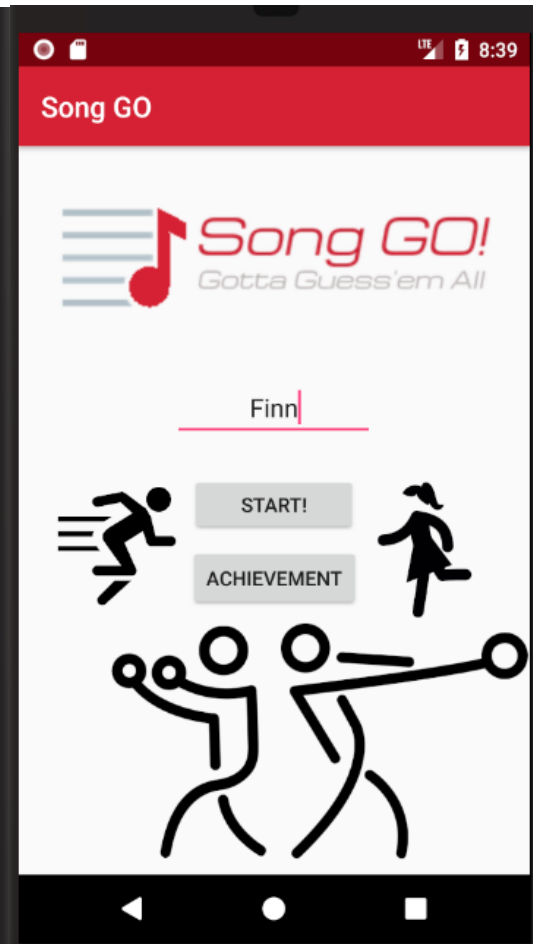


Fig 1.1: Name saved

This initial screen allows the user to \*input name and the game is personalised to increase engagement level. This name remains the same throughout the game and can be changed on the start screen Fig 1.0. When the app is opened and there is a name saved, it will be reloaded as shown in Fig 1.1 otherwise it will be like in Fig 1.0.\*

If user clicks on “START!” button, user is directed to song and difficulty selection in Fig 2.0.

If user clicks on “ACHIEVEMENT” button, user is directed to review past achievements in Fig 5.0.

## 2. Choose a Song

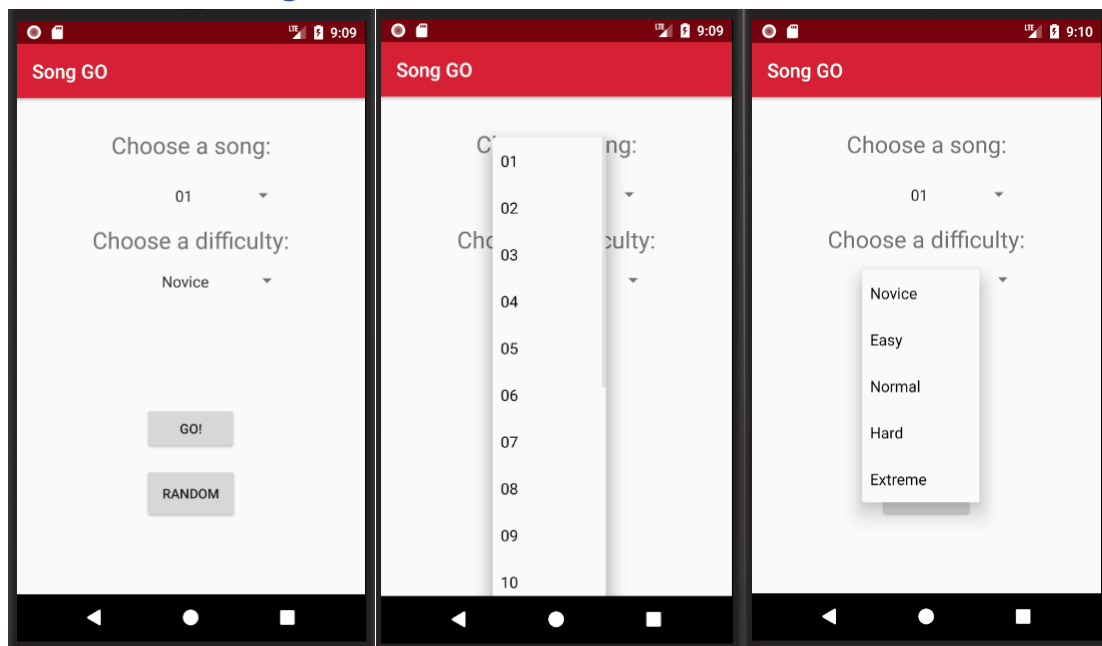


Fig 2.0: Main screen

Fig 2.1: Choose song

Fig 2.2: Choose difficulty

If there is internet connection the updated list of available songs is retrieved from the School of Informatics server and saved locally. If there is no internet connection, the user can play the game with the saved songs. If there is no internet connection and no songs saved locally, user cannot play the game and is asked to connect to the internet via a dialog box.

In Fig 2.0, the user can choose a song and a difficulty level as shown in Fig 2.1 and Fig 2.2.

The difficulty level determines which of the 5 available maps provided for each song is played. "Extreme" being the hardest level corresponds to Map 1 and "Novice" being the easiest level corresponds to Map 5 respectively.

If a player has solved a song at any difficulty, it is recorded and can be reviewed later. A cleared song can be replayed at any difficulty via normal or random song and difficulty selection.

If user clicks on "GO!" button, user is directed to Fig 3.0 where the selected song and difficulty is played

\*If user clicks on "RANDOM" button, user is directed to Fig 3.0 where a random song and difficulty is played.\*

The user may press "Back" to go back to Fig 1.0 and change the user name.

### 3. Game

When user enter this screen, the camera automatically moves and zoom into the user's current location. 3 buttons are available in the map: zoom in, zoom out and move to current location.

Placemarks of words of different categories are plotted on the maps using different marker style. \*The area of the game map is outlined by a red square as shown in Fig 3.1.c.\*

#### 3.1 Placemark Collection

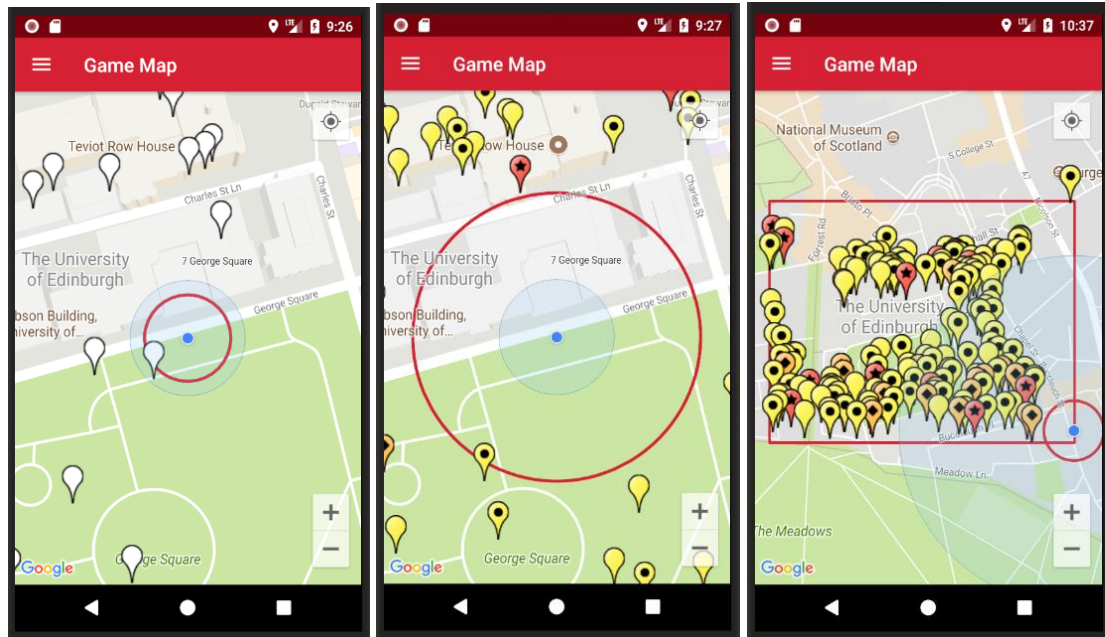


Fig 3.1.a: Song at “Extreme”

Fig 3.1.b: Song at “Novice”

Fig 3.1.c: Placemarks collected

In Fig 3.1.a and Fig 3.1.b, all placemarks within the red circle around the user's location are collected automatically when user walks. Collected placemarks are then removed from the map as shown in Fig 3.1.c.

\*The difficulty level selected determines the size of the circle. The harder the difficulty, the smaller the red circle. Whenever a placemark is collected, a short sound is played.\*

### 3.2 Google Map Direction to Placemark

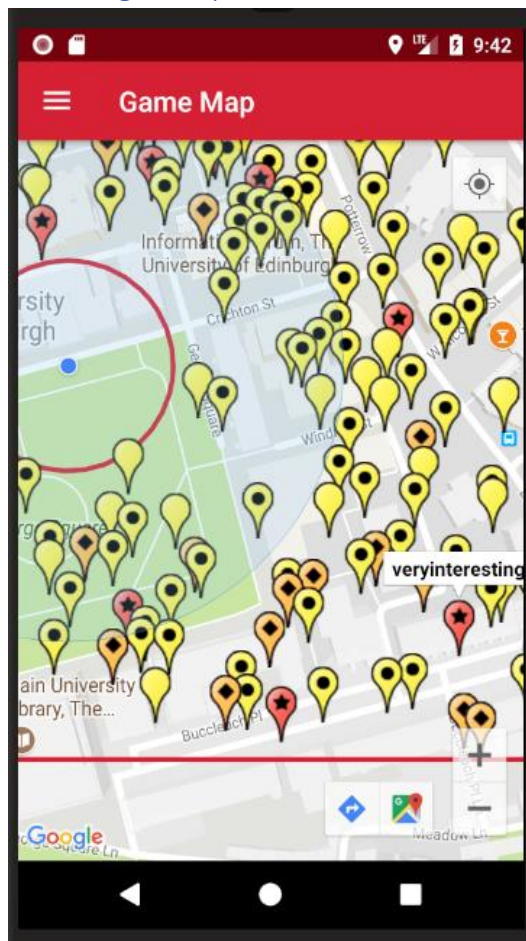


Fig 3.2.a: A interesting placemark clicked

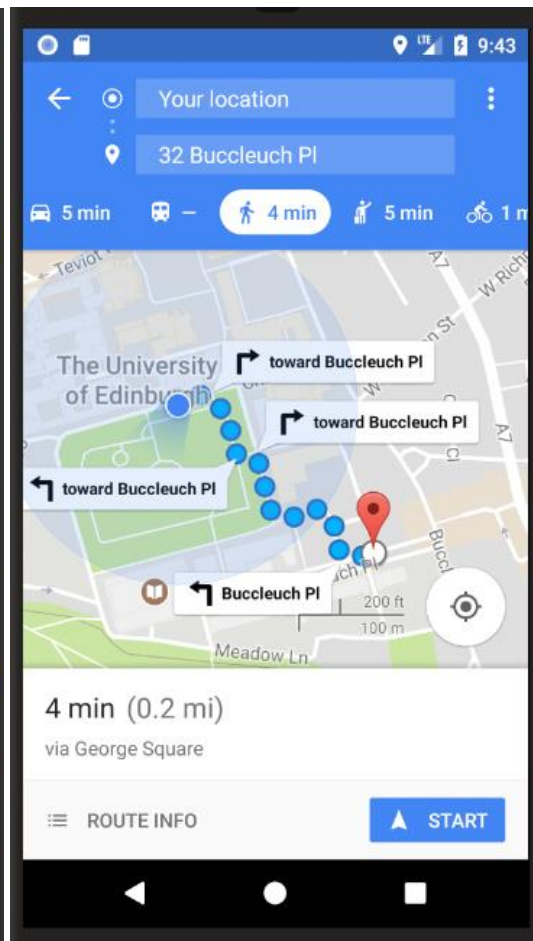


Fig 3.2.b: Direction in Google Maps

\*If user wants to travel to a very interesting placemark in Fig 3.2.a, the user may click on the placemark and click on the "direction" button next to the zoom and Google Map is opened with the direction setup as shown in Fig 3.2.b.\*

The user may press "Back" to go back to the game in Fig 3.2.a.

## 4. Navigation Drawer

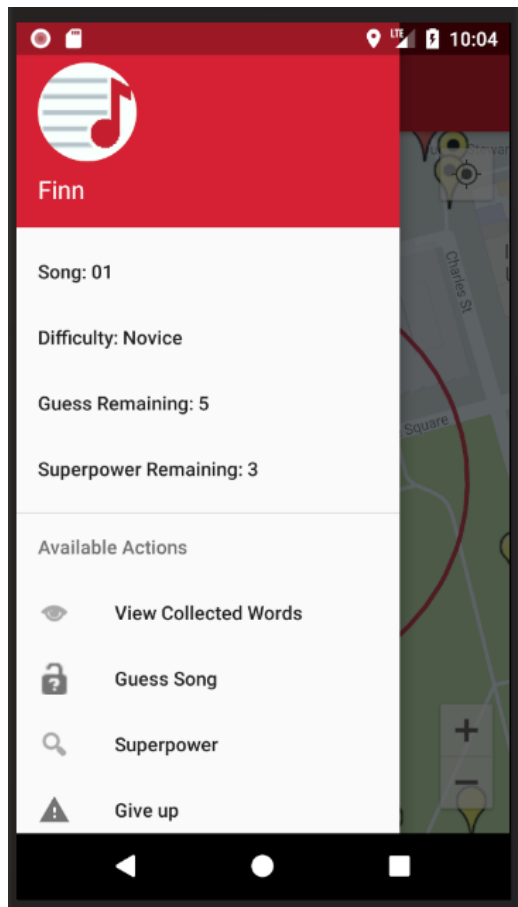


Fig 4.0: Navigation drawer

The navigation drawer can be opened by clicking the “menu” symbol or swiping right. This is very user-friendly because user can see the game details and available action in the same screen of the game.

This drawer contains information about the game such as the user name from Fig 1.0, song and difficulty level from Fig 2.0. The default number of \*guesses remaining\* and \*superpower\* is 5 and 3 respectively.

The user may press “Back”, swipe left or click the map to go back to Fig 3.1 and resume the game.

If “View Collected Words” is clicked, user is directed to Fig 4.1.

If “Guess Song” is clicked, user is directed to Fig 4.2.

If “Superpower” is clicked, user is directed to Fig 4.3.

If “Give up” is clicked, user is directed to Fig 4.4.

#### 4.1 View Collected Words

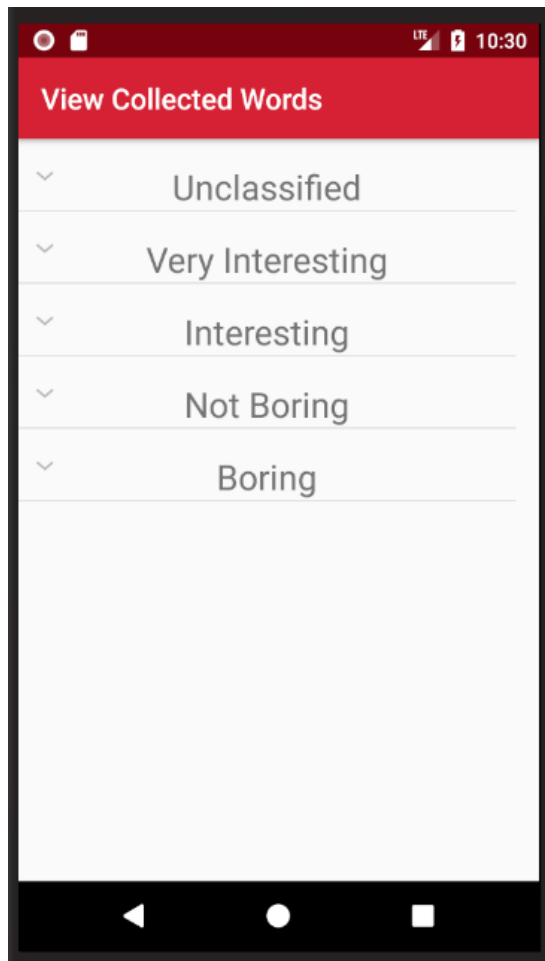


Fig 4.1.a: Categories of words

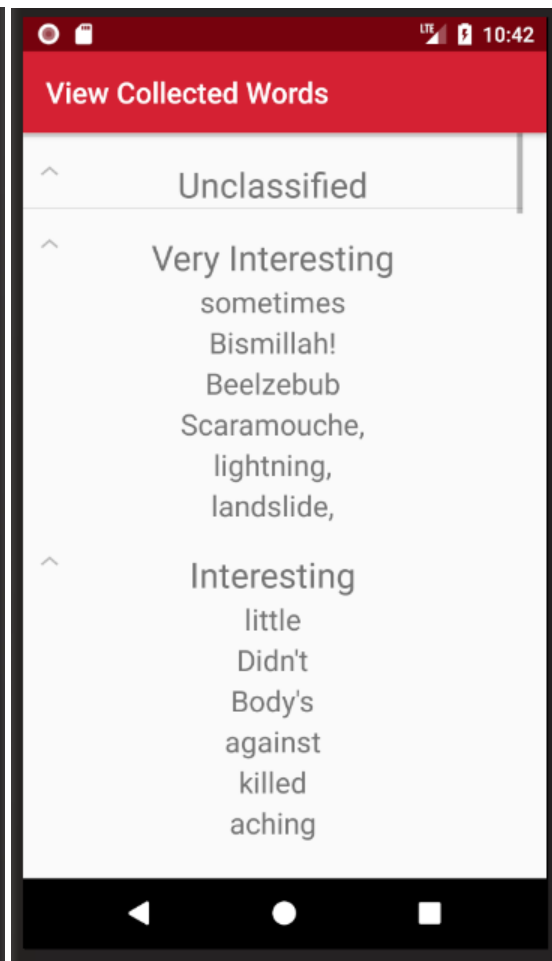


Fig 4.1.b: Words collected from Fig 3.1.c

When placemarks are collected, the corresponding word in the lyrics is added to the categories in Fig 4.1.a. \*Repeating words are only displayed once as shown in Fig 4.1.b.\*

The user may press "Back" to go back to Fig 3.1 and resume the game.



## 4.2 Guess Song

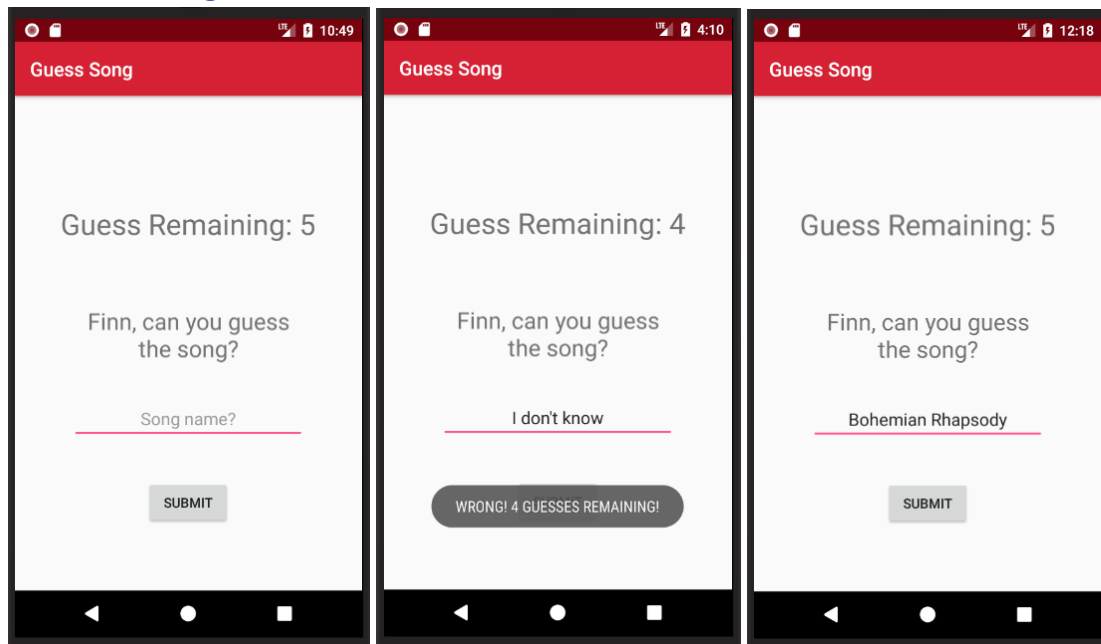


Fig 4.2.a: Main

Fig 4.2.b: Wrong guess

Fig 4.2.c: Right guess

User can input the song name in the text box and click submit.

If the guess is wrong, then a message is appeared as shown in Fig 4.2.b reducing the remaining guess by 1. \*When no guess remains, user loses and directed to Fig 4.2.e.\*

If the guess is right, then user is directed to victory screen Fig 4.2.d.

The user may press "Back" to go back to Fig 3.1 and resume the game.

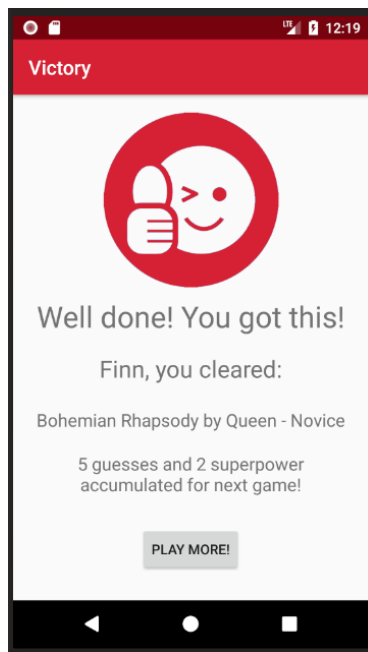


Fig 4.2.d: Win

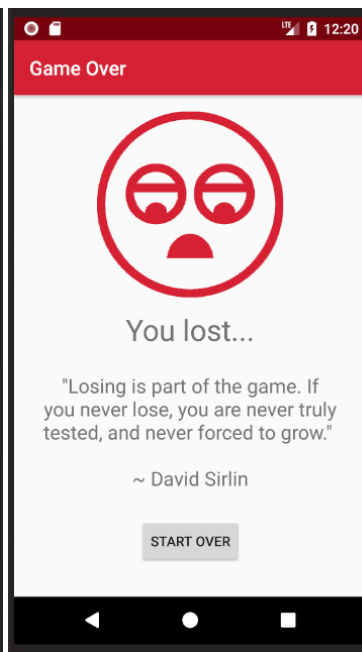


Fig 4.2.e: Lose

In victory screen Fig 4.2.d, \*the guesses and superpower remaining are accumulated for next game\*. The solved song is added to the achievement screen in Fig 5.0. The “PLAY MORE!” button redirects user to the start screen in Fig 1.0.

In Fig 4.2.e, user can press “START OVER” and redirects to the start screen in Fig 1.0.

In Fig 4.2.d and Fig 4.2.e, “Back” button is disabled to prevent user resuming the game.

### 4.3 Superpower

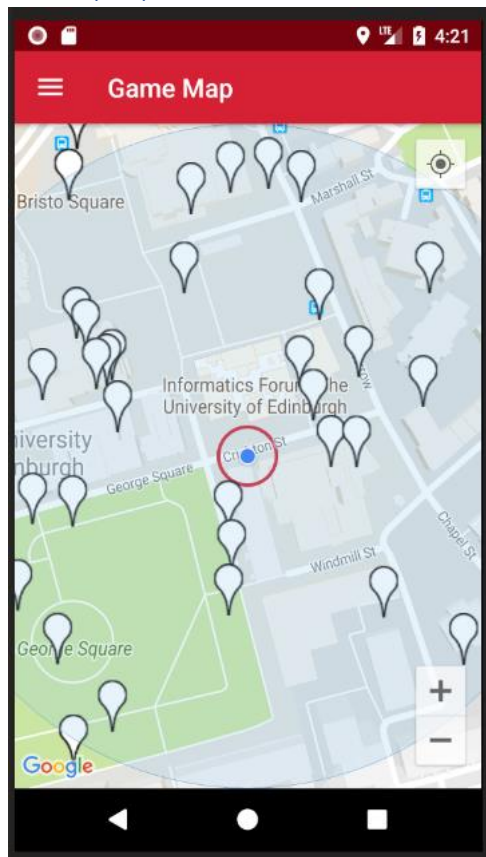


Fig 4.3.a: Song 01 at “Extreme”

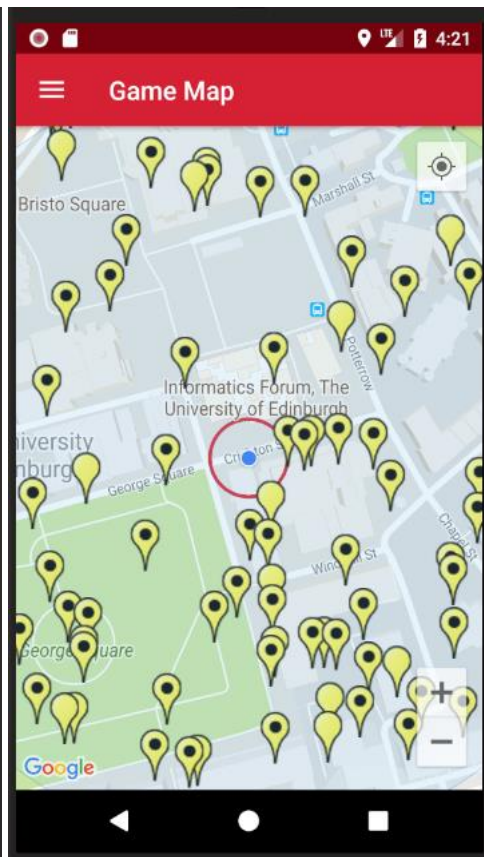


Fig 4.3.b: Superpower activated (“Hard”)

\*Superpower is a special feature to help the user guess the song.

When superpower is activated, the difficulty of the map is downgraded by one level for 5 minutes. Superpower cannot be reused during this 5 minutes.

This means all existing placemarks in Fig 4.3.a are hidden for 5 minutes and the placemark from the lower level difficulty are plotted for 5 minutes as shown in Fig 4.3.b.

These new placemarks can be collected the same way in Fig 3.1.c. After 5 minutes, these new placemarks are removed from the map and the remaining old placemarks reappears.

This helps user because additional words not available in current map are collected and can narrow user’s focus on where to go.\*

#### 4.4 Give up

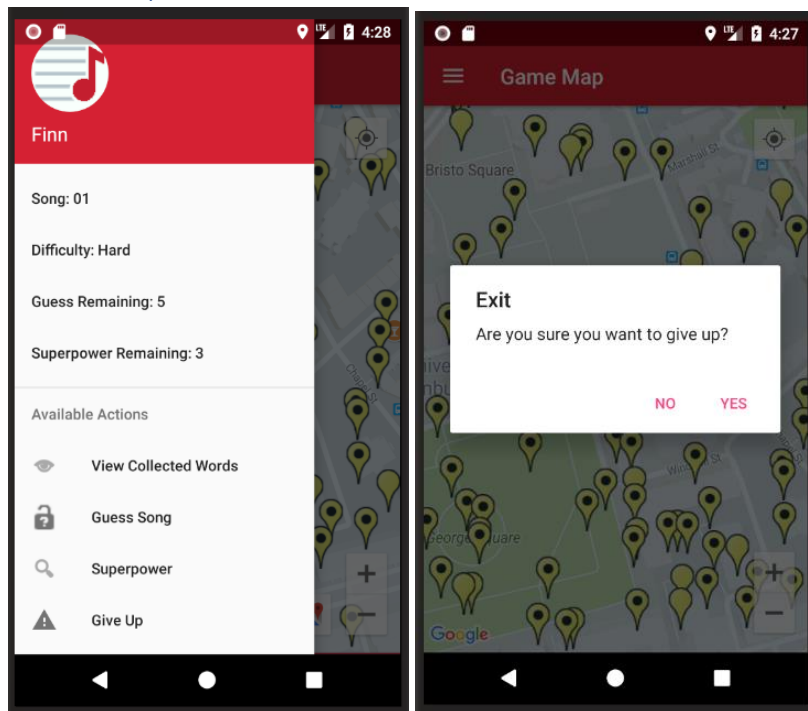


Fig 4.4.a: Nav drawer

Fig 4.4.b: Give up dialog

User can give up the current game by clicking “Give Up” or pressing “Back” button.

\*The user is prompted a verification message asking if the user want to leave the game as shown in Fig 4.4.b. If “No” or the map is clicked, user resumes the game and if “Yes” is clicked, user is directed to Fig 2.0 resetting the game.\*

## 5. Achievement

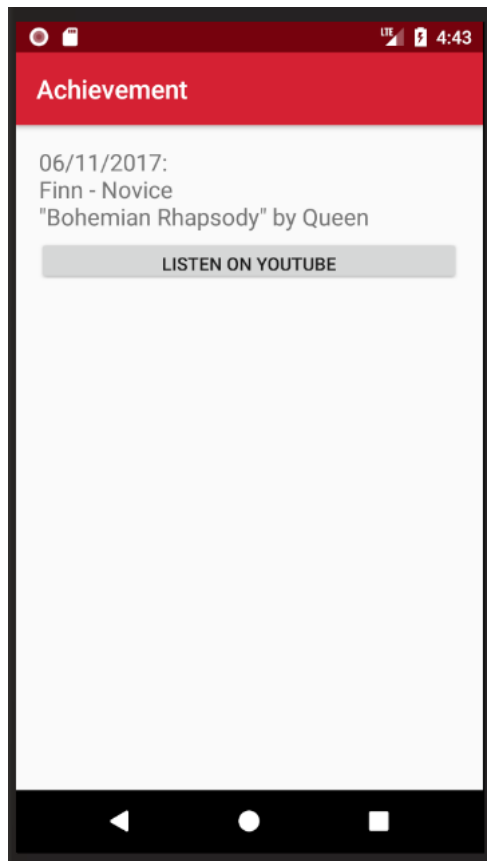


Fig 5.0: Achievement screen

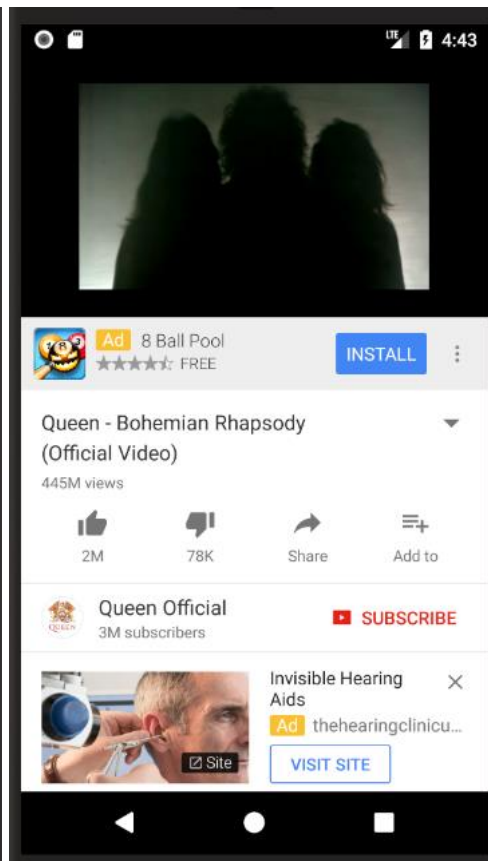


Fig 5.1: Playing "Bohemian Rhapsody" by Queen

User can see the songs they solved including the date, user name, difficulty, song and artist name. \*User can click on the "LISTEN ON YOUTUBE" button and is redirected to the song's youtube video as shown in Fig 5.1.\*

In Fig 5.0, the user may press "Back" to go back to the start screen in Fig 1.0.

In Fig 5.1, the user may press "Back" to go back to the game in Fig 5.0.