README
Installation Instructions
Devices: Designed for iPhone 6s

Installation for AR portion:
Note: ARKit must be supported on your device for the app to run
1. Download the LetsDanceAR.ipa
2. Follow the tutorial at:
   https://docs.monaca.io/en/products_guide/monaca_ide/deploy/non_market_deploy/ to run the LetsDanceAR.ipa on an iPhone

Alternative:
1. Extract the LetsDanceAR.zip file
2. Open up Xcode (version 10.1 or later)
3. Open the LetsDanceAR.xcodeproj in Xcode
4. Plug in an iPhone that supports ARKit (list of supported iPhones: https://www.redmondpie.com/ios-11-arkit-compatibility-check-if-your-device-is-compatible-with-apples-new-ar-platform/) with iOS version 12.1
5. Run the app on the device (make sure to select Verify the developer in Settings -> General -> Profiles)
   a. If required, the developer sign-in is:
      User: letsdancechoreoapp@gmail.com
      Password: SarinaMelindaAlexJeremy1234

Installation for Non-AR portion:

The source code for the react-native expo project can be found on our website. To run the app:
● Download the source code
● Run 'npm install' within the repository
● Run 'expo start'
● Metro bundler will begin in the default browser and the app can be run on a phone with the Expo App installed or on an iOS/Android simulator

Task Flow:
1. Tap on the "Create" button or an existing project to load up the (same) project (which will take you to the Overview screen)
   a. If you tapped "Create", you will enter a screen to name your project then one to upload a song (we have hardcoded a song, so no song will be uploaded)
2. Tap on an empty Formation box to create a new formation
3. The formation you can create is hard-coded, so you need to tap in certain areas to display the dots (refer to Figure 1)
4. Press Save to exit back to the Overview screen (or the full-screen button)
5. Press a plus icon to enter the create Transition screen
6. Since the transitions are hard-coded, tap them in a certain order (refer to Figure 2)

a. You can also clear transitions (once) before exiting back to the Overview screen (use the full-screen button or Save)
7. In the Overview screen: the third flag on the play bar is draggable (to show syncing formations with music), you can press the play button to play music
8. After your choreo is created, the "Preview" button would take you to the AR preview, which is implemented in the AR portion of the app

In AR app:
9. First, find a well-lit area with flat surfaces to scan
10. Scan the area by moving the phone in different angles slowly. Once a flat surface has been found, a grid will appear above it
11. Tap on the grid to place your dancers
    a. The dancers are life-size, so you may need to back up to see them fully
12. Press the play button in the lower left to start the choreo (music will play and the dancers will animate in preset formations and transitions)
    a. Pressing the pause button will also reset the dancers

Note: the features behind the share (bottom right) and exit (top right) buttons are not implemented (refer to limitations below for further details)

Prototype Limitations:

AR App:
● AR could not be linked with the other tasks due to technological limitations (with combining Expo React Native and native iOS code)
    ○ Thus, the exit button (the top-right X) is not linked back to the non-ar portion of the app
● Share button is not functional (but represents future implementation)
● Play button does not have cursor or bar for scrubbing
● Hard-coded formations and transitions are displayed and animated
● Hard-coded labels for the dancers are displayed

Non-AR Portion App:
● A number of Wizard of Oz techniques were used in combination with hard-coded features in order to show the task flows of our project
    ○ These include the music associated with all projects, number of dancers, formations, and transitions that you can create as the time provided was too limited to develop an app that was fully robust and supported multiple different formations and transitions
    ○ Creating a New Project and tapping on any previous projects route to the same 'Overview' screen, as a way to make the task flow linear
    ○ Only the 3rd Formation flag is draggable
    ○ Previous project information and rendering is all bootstrapped
    ○ The 1st and 2nd formation in any project's 'Overview' screen have a formation filling them, but link to blank formation Creation screens

- There were a number of features that were cut from the initial medium-fi prototype because it was decided that they were unnecessary for the completion of the essential task flows of the projects. These features included:
    - Labeling of dancers
    - Drawing to implement transitions
    - Coloring in unique dancers
    - Sharing (this is a feature that we highly wished to incorporate but weren't able to incorporate as it technically was not a part of our three tasks
    - A fully functional play bar, with scrubbing controls
    - Swapping formation flags does not change the state of the app nor cause the formations to re-render
    - Ability to add more than 3 formations and 2 transitions
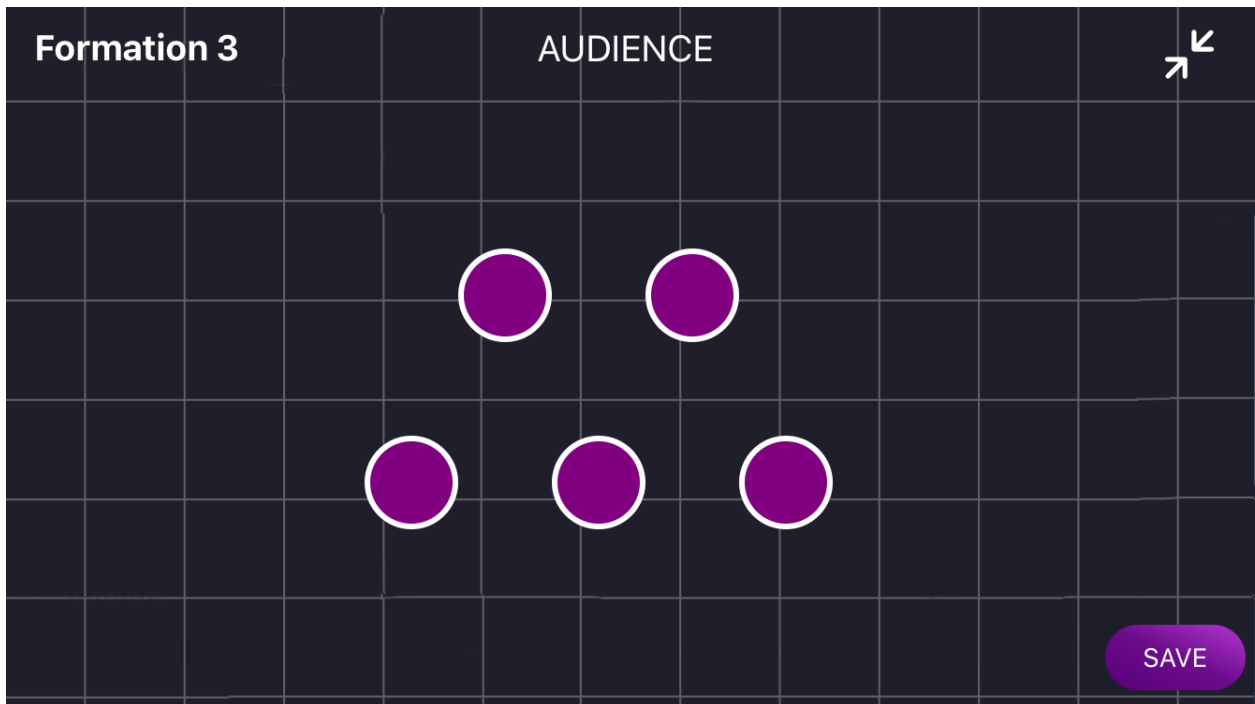   - Ability to see a transition from one formation to the next

Appendix

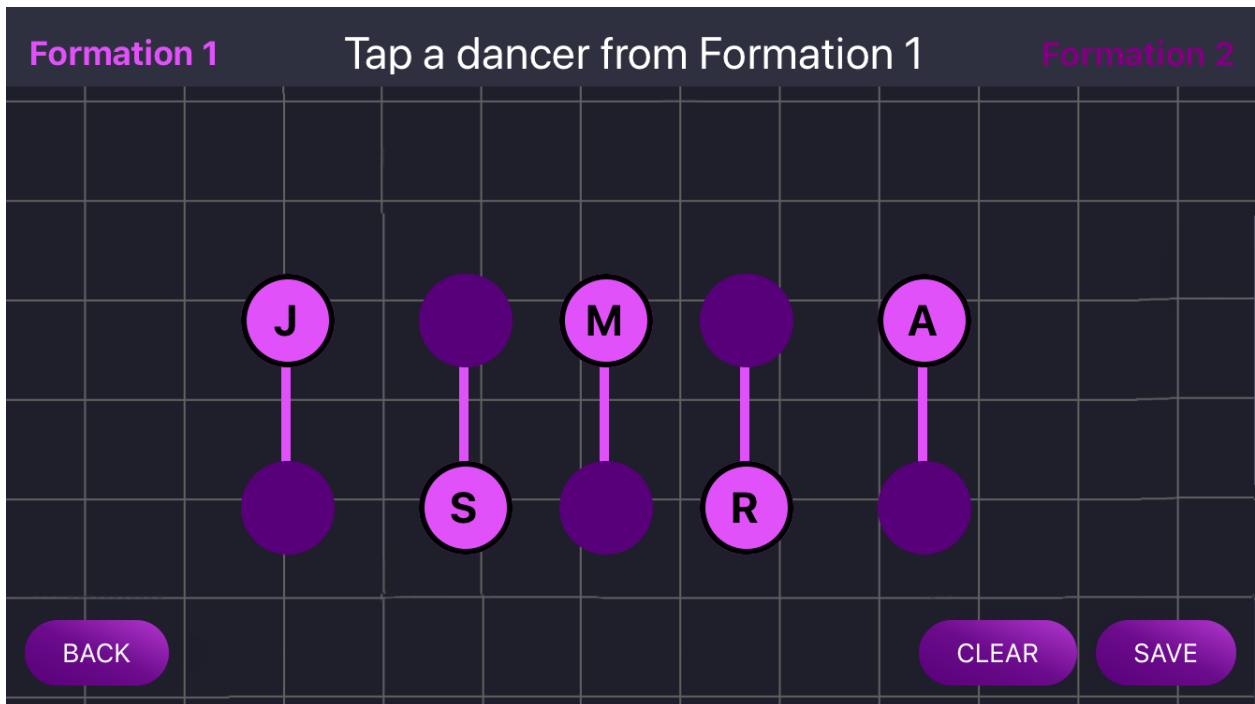*Figure 1 - Locations of the Screen where, if tapped, Dancers will be rendered*

Figure 2 - Transitions between specific pairs of dancer positions