***Design Document***

We implemented our project in the Swift programming language through the X-Code application. It is designed to run on iPhone 6. We first had to build the user interface through Storyboard, which is a visual representation of the app’s user interface, to lay out the flow, content, and transitions in the app.

The basic design of the app follows a three-tiered approach. Our code creates objects, passes them to each view cell, and then initializes them for table views and collection views. The homepage screen, in particular, has a custom view controller that uses IBAction to connect particular buttons and images from the storyboard to the program. The app initializes with a split-view controller, which contains a master view controller that mediates the menu and a detailed view controller that mediates the home page. We originally thought this would be necessary but soon found out that split-view controller only works on iPad. Regardless, we incorporated it into our design. The most relevant of the MainViewController functions are

1. Changedkey, which is called every time the home screen is loaded to check if the key for the piano has been changed.
2. PlaySound, which actually plays the chords once any of the three buttons are played.
3. PauseCharlie, which pauses the “Linus and Lucy” song using a Boolean value

PrepareforSegue is also an important function that allows us to communicate between views within the same view controller. Another important function is SegueWithIdentifier, which directs us to different view controllers depending on which button was picked. Also, we used a pseudro-random number generator but passed it from a previous view controller so as not to get a new number every time a sound was played. We used a lot of switch statements when possible as they are cleaner.

Overall, our design is based on Storyboard which we found much easier to visualize than designing the whole app through code exclusively. This resulted in less lines of coding but the same results in functionality. We wanted our app to be very user-friendly and interactive; to make the buttons/menu on the left hand side, we added it to the storyboard file. Additional design choices made to ease the user experience include the aesthetic layout with simple buttons and basic color schemes.