While recreating the Mathiac app for Android, I came across some differences from converting the code from swift to java, one of which is the most obvious. The code itself are two different languages. Another one is how each activity or framework functions in their respective languages; in java, there are two separate files to add and remove certain UI to the activity which will just alter just the xml file, to access the variable or UI, you must code in the java class and access the variable there. While in swift it is, all attached to one file, and when adding or removing UI, it will alter the code accordingly. Another difference between the two, is that from personal experience; I believe that java is much easier to code than swift. Also, the structure of java is so much like C++.

For the final Java project, I converted my IOS application from Swift to Java and have it be functional for an android phone. The app itself is the same math game that allows users to practice their skills, in addition, subtraction, multiplication, and division. Users can create a username and password. The app can only be accessed if the user has created a username and password. Once they have created that, they can log in and use the application. Since my subscription to the parse database has expired, I was unable to access the username and passwords from the parse database. The code is just commented out if the subscription was enable in the future. Also, parse was not very difficult to code, since most of it is just an attachment to add to the Android Studio library. One of the achievements was being able to read from a text file, as easy as it seems it was difficult to do.

In Mathiac, the user will have a username, password, and high score that is saved in parse and is all linked to that one account, the users only have access to seeing the high score and username of anyone else who has the game and can play it (the password would be protected for various reasons). The overall functionality of the game is that users created/sign-in to an account and are prompted to the game screen. There they can choose whether to practice addition, subtraction, multiplication, or division. After they have decided what subject they want to practice in, they are then prompted to a screen that gives them 50 different questions, and each question is random, every time so the user cannot just find a pattern (In the code it is set to five for presentation purposes). After they have completed their 50 questions, a message will pop up and show how many questions they got right and how many they got wrong, then it is automatically set as a high score until a new better high score is reached. The high score page, would’ve read from a text file that would have saved the user’s username, and high score then presented on that high score page. Unfortunately, in android it is very difficult to write to a text file. There is also a screen where it explains the overall functionality of the game, which it reads from a text file so changes can be easier to make in the future.

In the Mathiac app, there are multiple classes that were changed. The sign-in/sign-out class still exists and that has the username and password information that will be sent to the parse database and checked if the information is matched or not. The users class was scraped and the addition/subtraction/multiplication/division class that holds the four main classes each having their respective questions that correspond with the type of math that the user chooses, and now holds information like user’s choice, high score, total correct, etc. Unfortunately, a matchmaking could not be reimplemented due to the parse being unable to work. As well as an A.I system that would challenge the users to a “math match”, which would be who can accurately solve more problems than the other in a specific amount of time. I also wanted to add a difficulty choice so users who are more confident can challenge themselves to something more on their level.