# Unit 6 Reflection

Date: June 1, 2015

To: Mr Peck

From: Andrew Si

Subject: APCS Final Project (“Gauntlet”) Reflection

**Accomplishments.**

I was the project leader of Gauntlet (working title Project Malice), so I had the responsibility of making sure that the team was on task and on schedule. In the beginning of the project, I designed the class layout and initial specifications of the game and set up a GitHub repository, LibGDX project, and Gradle for Eclipse and helped the rest of the group set up everything. During the project development, I worked on the CharacterSelect and GameScreen Screens in our game application, the Projectile class, and the Character class and its two subclasses, Enemy and Player. More specifically, I handled a lot of the movement and combat code for Character, Enemy, and Player.

I was able to successfully implement a balanced and functional combat system and proper shooting mechanics. GameScreen was another important class I worked on; my code helped GameScreen properly handle interactions between the Map, Characters, and Projectiles, from collision detection to passing correct parameters for aiming and dealing damage. Most importantly, I was able to get our team through the project and accomplish the goals of our original plan.

**Learning Experience**.

The most valuable things I learned from this project were learning to use a third party graphics library for the first time and leading a group of programmers in trying to create an application with a tight deadline (or at least I thought it was).

Using a third party graphics library was a very interesting experience because rather than creating everything from scratch or using Java’s basic libraries, I could stand on the shoulders of other programmers’ achievements. Furthermore, in the future, if I pursue a career in computer science, I will very likely have to utilize third party libraries and gain experience with them. LibGDX itself is also a useful library and if I choose to go into game development, then I will already have experience with it.

Leading a group of programmers was also an enriching experience because I might have to do so in the future again.

**Objectives**.

* Challenge   
  The project was pretty challenging. We had an ambitious original goal of creating a 2D top down shooter with RPG elements, and for many of us in the group it was the first time we had ever programmed a video game and none of us had any experience with LibGDX or Git. I also had the extra responsibility of being the group leader and had to jump around the different classes assisting anyone who was having trouble.
* Effort   
  Our entire group worked really hard. We all strived to make our game as feature-rich and polished as possible; on one Sunday alone, we added over 3000 lines of code and removed 1400 lines. Many of us tried to go an extra mile as well. For example, I put in extra features such as pause menus and the ability to choose different characters, found background images to make the menus look prettier, and added sound effects that I found online and modified using Audacity.
* Quality  
  I believe that the quality of my work was pretty good. The code I wrote was not incomprehensible and my leadership of the team was competent. We stayed on schedule and our final code layout and structure were surprisingly similar to the original specifications that I had made.
* Problem Solving   
  Most of my problems and questions about LibGDX and Git were solved by watching Youtube tutorials on LibGDX, reading LibGDX documentation and tutorials, or reading the GitHub tutorials. It’s amazing I was even able to resolve all the merge conflicts and incorrect Eclipse configurations and LibGDX library struggles that our team faced.
* Results {How useful were the results of your efforts?}  
  The result of our project, “Gauntlet”, was very rewarding and I feel that the team’s effort paid off. The game has very solid shooting and role-playing game mechanics and it is competent enough to be released on Google Play or the App Store. Judging from the amount of APCS students who watched us playtest, I am pretty sure that many people like our game.
* Teamwork   
  I was the group leader, so I constantly checked in with the other group members and made sure that they were on schedule and on task. I also assigned tasks to group members and coordinated their activities to prevent merge conflicts.

**Overall Assessment**

Overall, I would give myself the letter grade of A. I feel that I did a commendable job as a group leader since everyone worked together extremely well and did their fair share of the project. Furthermore, our game is very solid and is pretty advanced considering we had AP testing and five or six other classes to worry about. I regret that I spent so long deciding on a graphics library though; I wasted a week debating between Greenfoot, LibGDX, and plain old JFrame. Also, I felt that our group would have benefited in the long run from using Box2D, a physics engine in LibGDX, since it would have allowed us to implement things like character rotation and a wider variety of projectile movement.