**Project 4 Integration Strategy**

Due to the impact of the Covid-19, we taking classes asynchronously, and this also means that everyone in our group will complete part of the project on their own. Therefore, Integration Strategy is very important in such a project. One of the reasons is that everyone has different ideas when writing a piece of code, we need to understand the code through integration. Another reason is that Project 4 is completely conceived by us, Our requirements for the project will also change during the creation process. Under these circumstances, integration can effectively ensure the successful operation of the newly created part.

Because understanding the integration strategy is very important to complete a project, we used the Bottom-Up Integration strategy in this project. In Bottom-Up Integration, the artifact below is coded and integrated before the above. We also followed this process of going up from the root when we wrote the code. The first team member to write the code usually starts with the most basic setup and makes comments next to the code. When the next team member gets the previous person's code from GitHub, they will test the existing content and integrate the new code through them. Similar processes are repeated continuously, and the final code will consist of tested sub-codes.

The characteristics of Bottom-Up Integration also bring us some benefits. Because before integrating higher-level code, we will test the existing sub-code. This ensures we can more easily find errors and fix them promptly. Bottom-Up Integration also can ensure that the large and complex codes are not easily affected by its components. And because the languages that our members are familiar with are different, the Bottom-Up Integration strategy helps us better understand the code and learn new things from the project.