

Alvin Lu  
INDIVIDUAL REPORT – GROUP 2M

<b>Student No.</b>	100161837
<b>Contribution</b>	<b>40%</b>
<b>Main responsibility</b>	<ul style="list-style-type: none"><li>• Main developer for chatbot</li><li>• Writing and compilation of reports</li><li>• Code compilation and bug fixing</li></ul>

### **Work description**

For the development of the chatbot, I was the main developer for the chatbot responsible for the UI and majority of the back-end functions. I developed the historical data acquisition, delay prediction, website scraping, reasoning engine, database and chatbot controller. I also developed the NLP module partially. Before beginning developing, members were asked the parts that they'd prefer to do. All progress during implementation of the software was also recorded on GitHub. Major updates to the software was also communicated to the members through selected messaging platform.

For the report, I was fully responsible for the compilation and completion of the report by writing up the design and implementation details, problems faced and mitigations and constructed the and captured all the diagrams included in the report. Prior to the final report, I have also completed the 1<sup>st</sup> Interim report with the approval of the other group members. Before the actual report was completed, a draft was initially uploaded for review by other members and was completed after a meeting with the team. For the contribution section of the report, each member was responsible for summarising their own contribution into a few sentences.

During finalisation of the project, I was responsible for compiling modules within the software and constructing the chatbot controller that combines the modules. This is accompanied by bug fixing that was discovered during compilation and white box testing that is conducted after completion. I was also responsible for debugging during any issues that were found during testing conducted by other members.

Finally, I am in charge of explanation of the back-end functionalities during the presentation and answering majority of the questions asked by the markers.

### **Evaluation & Reflection**

During development, I learned the importance of task prioritisation as some modules take a large amount of time to execute such as data acquisition and training of prediction models. This showed the importance of scheduling and critical path analysis to ensure that future projects can be delivered on time. I've also discovered that it requires a large amount of research to understand the theory of different classification and regression models in order to fine tune the settings to improve prediction accuracy.

As I have experience on similar projects, I've got the chance to explore more complexed helper functionalities that can improve usability and flexibility such as developing modular NLP functions to allow input in different pace of formats. I have also learned to develop the software in an agile manner with focused placed on incremental development and unit testing.

Developing a chatbot has allowed me to reinforce my knowledge in AI and machine learning concepts and also gain experience in major steps of software development.