

## CMPT 354 Project Proposal

Our group approached a local martial arts gym and initially planned to work with them to build a database system and website for tournament management. However, after consulting with the gym owner and reviewing their business needs during the Covid-19 restrictions, we decided to instead develop a database system and website to gamify the online martial arts experience and make it more engaging for kids.

- 1) The domain of this database is a martial arts school. The school hosts several classes, each with instructor(s), students, and parents/guardians. The database will model the classes, students and their guardians, instructors. In addition, the database will model online activities, allowing students to engage with each other remotely while studying martial arts.
- 2) Our database system will work in combination with a website to facilitate remote learning for martial arts students. Our website will allow instructors and administrators to create several classes and enroll students in the classes. For each class, instructors will create a list of activities for the students to complete. For each activity, one and only one instructor or student will upload a demonstration video. The rest of the students will then upload reply videos of themselves emulating the demonstration video.

Each activity will have a deadline. After the deadline passes, the students will vote for the best reply video. The student whose reply video receives the most votes will be declared as the winner of that activity and receive points. The instructor will also be able to pick his favourite reply video, providing bonus points to the corresponding student. Finally, every student who participated in the session will also be awarded points.

A leaderboard will be implemented to show which students have the most points.

Points Breakdown: 10 for first video uploaded for each activity type.

- 5 for uploading the following videos.
- 1 additional point for each best video vote.
- 5 for instructor's favorite video vote.

- 3) We plan on using MySQL and Python for this project. A GUI for the application will be implemented using the Python Flask library, providing students and instructors/administrators the ability to easily interact with the database system.

The demonstration and reply videos will be hosted using YouTube. Students will upload their videos to YouTube, and post the video to our website by providing a link to the YouTube video. This link will be stored by the database and will be used to embed the video within a webpage.

#### 4) Entity-Relationship Diagram

