# Lynder Project Plan

# Submitted to:

# Project Manager: Ian Chiu

Date: April 26 , 2018

Project Overview:

* Project Title: Lynder
  + Purpose: Program to create groups for group projects based on individual person ratings
    - Have each person give a rating of everyone in the class from 1-5, and use that ranking to create the ideal group for everyone based on the amount of people they specify and the average between each ranking (*maximum group size of 4, minimum group size of 1)*
    - Example:
      * Student 1 ranks student 2 w/ a 5 and ranks student 3 w/ a 3 and ranks student 4 w/ a 1
      * Student 2 ranks Student 1 w/ a 4, student 3 w/ a 1, and student 4 w/ a 3
      * Student 3 ranks Student 1 w/ a 3, student 2 w/ a 5, and student 4 w/ a 5
      * Student 4 ranks Student 1 w/ a 2, student 2 w/ a 5, and student 3 w/ a 5
      * **Final Result:** 
        + **Student 1 + Student 2 because the average of ratings is 4.5, while other students have a lesser average**

Student 2 + Student 3 has an average of 3, Student 2 + Student 4 has an average of 2.5

Student 1 + Student 3 has an average of 3, Student 1 + Student 4 has an average of 1.5

* + - * + **Student 3 + Student 4 because the average of ratings is 5, while other students have a lesser average**

Student 3 + Student 1 has an average of 3, Student 3 + Student 2 has an average of 3

Student 4 + Student 1 has an average of 1.5, Student 4 + Student 2 has an average of 2.5

* + Can be created by using a map: a student class that is mapped in according to its rating
  + Each Student Class contains its own map of an entire class.
  + Run comparisons
  + Possible (if have time): implement networking? to have interface on multiple computers, all connected through the network?

**Project Team: Ian Chiu, Darren Chou, Maxwell Wang**

Challenges:

* Possible Difficulties:
  + Having a list of students in every single user interface that is updated every time a new person is placed
  + Creation of multiple user interfaces, including the “sign in” page and the actual rating page
  + Creating an algorithm that matches students into groups based on similar ratings, especially in the creation of an algorithm that is able to “adapt” based on the difference in group sizes
  + Creating a priority queue for sorting people into the order of popularity?
  + Creating an algorithm that randomizes groups once all the initial groups are filled
  + **If have time:** implement networking so there can be multiple interfaces on multiple computers, instead of multiple interfaces on one computer
    - not sure exactly how to implement or exact details of implementation

# Major Tasks and Schedule:

* Create multiple User Interfaces for each step of the rating process (1. a user interface for “logging in,” 2. a user interface for rating each person, and 3. a user interface for the grouping and result page)
  + Expected to finish by May 8th, Tuesday
* Creating a “Student” class, which can hold the information for individual users, such as individual ratings, classmate ratings through the use of a treemap, etc.)
  + Expected to finish by May 15th, Tuesday
* Creating a “treemap” class that can hold student information, challenge is to be able to update it every time, and compare the two student’s information to check if they are less than a certain standard deviation
  + Expected to finish by May 8th, Tuesday
* Create a class of fake users for testing
  + Expected to finish by May 18th, Friday
* JUNIT
  + Expected to finish by May 18th, Friday

# {Create UI for individual rating of other classmates; Creating Class to hold information for individual users; Create Map for holding all students; Create function to add users;Create a class of of fake users for testing}

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| Task | When | Responsible |
| UI for sign in | 5/8 | Ian |
| UI for rating | 5/8 | Ian |
| UI for grouping results | 5/8 | Ian |
| Student Class | 5/15 | Maxwell |
| Priority Queue | 5/15 | Maxwell |
| Algorithm (sorting) class | 5/15 | Darren, Maxwell, Ian |
| Treemap within Student Class | 5/8 | Darren |
| JUNIT testing | 5/15 | Darren, Maxwell, Ian |