CSC 220 Programming Challenge:

This is an open ended programming assignment. This means that very little guidance will be given to you as to how to solve it. However, there are requirements expected of your solution in order for it to count as successful.

Problem.

A faculty member wants to split a particularly fractious class of 20 students into groups. In order to appease her students, she has them fill out a survey where they rank their top 5 potential group-mates, and top 3 "haters". The potential group-mates are given a score from 1-5 (with 5 being the best score), and potential haters are given a score from -1 to -3, with -3 being the worst score. A score of 0 means that there is no inherent preference or dislike for the student. The information from that survey has been provided to you in a spreadsheet. A sample of that spreadsheet is shown in the image below.

Names	Belle Walters	Colson Velazquez	Jaliyah Gross	Quinn Simpson	Anastasia Buchanan	Enrique Atkins	Mina Chung	Ira Woodard
Belle Walters	0	0	0	4	0	3	0	-3
Colson Velazquez	0	0	0	0	2	-2	5	1
Jaliyah Gross	1	4	0	0	0	0	0	0

In the diagram above, Belle Walters ranked Quin Simpson as 2nd and Enrique Atkins as 3rd in her list of preferred group-mates. She also ranked Ira Woodard as the lowest score.

Task

Your task is to create a java program that will create potential group listings for the professor. The code should allow for the professor to change the size of groups (i.e the number of students per group). The code should also show a grouping score. I will let you decide how you want to calculate that grouping score. That grouping score can be used to decide what the "best grouping" is for a given group size. You can use any and all resources (including chat-GPT) to tackle this task. Just remember to cite them in your report

Submit

You will submit a zip file that contains the java files you created, a `readme` file that contains any information relevant to running your code (if it requires a more complicated execution process than just `javac` and `java`), and any other files your code requires to run e.g. input files.

Your zip file should also contain a PDF containing your thoughts on the algorithm you designed, any sources you used, and your insights as to how your algorithm would scale i.e. what would happen if I tried your code on a class of 100 or 1000 students?