Leomart Crisostomo

Rasika Iyer

Final Report

* A 200-500 word document describing which ideas you implemented and why you felt some might have performed better or worse

Frist, we created a greedy algorithm that assign each student to a bus that will add the most friendships with the current students in that bus, but will not create a rowdy group.

Then we improved this algorithm by starting with the clusters of students and putting them in a bus. First, we initialize each bus with the students that has the least friendships in order to guarantee that no bus will be empty. We selected the students with the least degree friendships because we think that we can put them in any bus as they would only add small amount of friendships. Then, we first pick a student that has the most friendships among the students then assign him/her to a bus that will add the most friendships to that bus, but will not create the rowdy. We also add each neighbor of that student to the bus that will add the most friendships and won’t create a rowdy group. Then we next assign the student with the second most friendships among the students and his/her neighbors. We repeatedly do this until all the students have been assigned. This improves the first algorithm because of the order of assigning each student to a bus. Assigning first the students with the most friendships will yield more friendships.

Another algorithm:

We also created an algorithm that first randomly assigns a student to each bus so that no bus will be empty. Then we use our greedy algorithm to determine which bus should we assign each of the remaining student.