GROUPRE FUNCTIONAL SPEC:

Concept:

- Groupre is a software product that will automatically place students into both individual seats and small class groups based on the classroom environment, student-oriented requirements, and instructor specifications and criteria.
- Be it known that the primary purpose of Groupre – from a functional perspective – is to sort people into chairs. Since chairs are inherently part of a team, sorting students into chairs also sorts them into teams.

Data:

- All data will be one of the following criteria:
  - Student name – the student's given name.
  - Student PID – the student's PID.
  - Seat number – the specific seat number, in row/column format.
  - Handedness – whether the student is left handed or not.
  - Aisle – whether the student request/requires an aisle seat.
  - Front row or Front-Of-Class (FOC) Front row or front several rows of the classroom, depending on room size.
  - Rear row or Rear-Of-Class (ROC) Rear row or rear several rows of the classroom, depending on room size.
  - Team ID – the team number assigned to the student.
  - Pretest score – the score (from 1 to 4) the student achieved on the assigned pretest.

Rules and Priorities:

- Sorting will be accomplished in accordance with the following rules and based on the accompanying priorities. Priorities are assigned based on usefulness to the individual student requesting the seat for that priority's purpose. When all priorities are met, the remaining students will be assigned to random seats.
    - Handedness – the highest priority, as this is the only case (excluding specific disability-related edge cases) that requires a specific desk.
    - Front row and Front-Of-Class (FOC) – this priority is assigned next, due to the fact that some students may be requesting FOC due to visual or auditory requirements. Moreover, FOC is generally regarded as a less-desirable location, due to instructor proximity and attention span requirements.
    - Rear row and Rear-Of-Class (ROC) – after FOC is assigned, the next priority devolves to ROC. ROC is a lower priority, since reasons for requiring the rear are more generally constrained to social or scheduling issues, and have been determined to be non-mandatory for the students' learning process.
    - Aisle – Aisle seating receives the lowest priority due to the fact that it has the lowest impact on actual or perceived student learning ability. Furthermore, left-handed seating is excluded, but accounted for when assigning aisle seats.

User Stories:

- As a professor of a large 100-level course with over 400 students, seating assignment can be an extremely tedious and time consuming process. Add to that the fact that my curriculum is designed to benefit from maximum class participation and team-based projects, and I need a tool to help me. Enter Groupre, an application to take all the relevant student data that I

provide, assign seats and teams based on both the criteria and an element of randomness, and give me back seating assignments for all 400 or more of my students. What used to take ten hours now takes ten minutes.

Personas:

Left-Handed Student:

- This is simply a left-handed student who requires a left-handed desk for any writing, reading, or setting up a laptop for class-related activities.

Front-Of-Class Student:

- This student wishes to sit at or near the front of the class. Reasons include, but are not limited to, difficulty seeing the instructor or material, a desire to be more focused and/or engaged with the course, or physical considerations like legroom.

Back-Of-Class Student:

- This student wishes to be seated at or near the rear of the class. Reasons include, but are not limited to, a wish to be non-intrusive, a requirement to be able to depart the classroom swiftly after class ends, and social concerns.

Special Requirements Student:

- This student wishes or requires special considerations when being placed in the classroom. These considerations include any requirement covered by the Americans with Disabilities Act (ADA).

Instructors:

The Lazy Instructor:

- This is the professor or TA/LA who wants to group his or her students one time at the outset of the semester, get all groups and seating as "perfect" as possible, and wants to leave them in one place for the duration of the term.

The Communication-Intensive Instructor:

- This instructor wants to change groups or seating according to class-specific requirements or specifications. The reasons for these regular changes are myriad, but include changing group composition based on exam results, separating problem students or groups, and encouraging diversity and communication between groups and students.

Use Cases:

Student:

- Optimally, students will check Sakai for seating assignment. Students may also be able to check Sakai for group assignment as well, depending on instructor specified parameters.
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Instructor:

One-Time Grouping:

- In this case, the instructor obtains and develops the seating and grouping roster from both the initial survey and Sakai information, in the form of a CSV. That CSV will then be taken as input by our product, which will output a different CSV with all of the student-seat pairs sorted by group. The

original can, of course, be re-run if necessary, and the final product will be modifiable before finalizing the seating plan and publishing it to Sakai.

Multiple Group Creation:

- This case is initially the same as the One-Time Grouping, but since the program's parameters will be easily modifiable, the instructor will be able – mid-semester – to account for and adjust the seating assignments based on changes in the class roster, student participation and/or grades, and varying group dynamics.