Society of Women Engineers (SWE) Seating Chart for Evening with Industry
Team size: 3
Location: Primarily onsite (on campus)
Project: **Develop a program to seat 300-400 guests at specific tables for a dinner**.

SWE Background
SWE at Mines is the largest student organization on campus and the largest collegiate section of SWE in the country. The section is focused on providing meaningful professional development, networking, K-14 outreach, mentoring, leadership, and social enrichment opportunities to over 700 members. Evening with Industry is an annual event for SWE members held on the evening prior to the Fall Career Day. Companies that sign up to attend the Career Day are invited to attend this event. The evening begins with an hour of networking followed by a sit down dinner, with a formal program including a keynote speaker from industry. There are assigned seats during the dinner and the goal is to give students the opportunity to have longer, more meaningful conversations with companies who are seeking students from specific majors. Students and recruiters are seated with the students/recruiters from the major/industries they prefer. Upper class students are given priority to sit with employers of their choice, lower class students are given a lower preference, so that graduating students have a better opportunity to get their top choices.

Project Goals - Primary
The seating chart program must take input from three excel sheets that contain registrant information (e.g., name, company, majors, meal preference, etc.) and assign individuals to a table. The three different excel sheets are for: 1) student registrants (noting grade in school and major), 2) recruiters with their company name and top three choice of preferred majors, 3) Mines administration (who need to be seated one per table and spread out evenly among the seats). Table assignments are prioritized by the academic majors companies recruit and by the academic majors of student attendees. Senior level students receive priority, juniors receive next level priority, sophomores, next and freshmen last. Graduate students should receive some type of priority as well. There should be roughly an equal number of recruiters, students and administrators at each table. We don't want a table full of students and one recruiter with another table holding three administrators, four recruiters and one student. Ideally department heads should be seated with students in their department or companies that work in that departments field of study. (I.e. Mining DH should sit with a mining company, not a computer science company.) Each attendee must be assigned a table number.

The program should output a list of who is sitting at each table, and a list of how many dietary restricted meals there are at that table. Outputs should be sortable to get a list of table guests by table number, guests in alphabetical order by last name indicating their table number, and company name, with guest name and table number. The program should be able to provide a lists of guests who need special meals, by table number and name so that we can give the

catering staff the list of what table and to whom they should serve the special meal. The outputs should allow us to merge and print name tags that state the recruiter name, company, position title, table number and special meal or not. In addition to nametags, the output sheets will be used to print seating place cards. The program must be agile as there are last minute cancellation, addition, and seat assignment changes a few days before the event.

The input lists are generated from the fields in our CashNet payment system. Project participants should see our payment system to understand what information is collected and advise us as to whether the seating chart program should request additional information. The VIP/Department Head list will come from other excel spread sheets because VIPs don't pay to attend, but DHs pay via campus voucher.

Project Goals – Secondary
Some people, such as President Johnson, keynote speakers, student leaders, etc. need to be assigned to sit at table 1. Can the program handle pre-assigning of some people to a certain table?

Project Goals – Stretch
Girls Lead the Way academic majors session assignment- high school participants are able to select their top four majors of interest when they register. From there, they are assigned to three, hour-long breakout sessions. The girls are also assigned a group number, so all students in that group rotate to the same three breakout sessions. This currently is a very manual process. Ideally, this project would have the ability to help sort and assign for any WISEM or SWE event where people are put into groups.

Technology:
The programming language of choice is up to you, but you will likely choose either Java or Python. You will make a GUI. Project participants should be interested to learn or be familiar with User Interface and User Experience principles.

Notes from previous programmer: (if you want to see the existing program, let us know.)

Technical:
I recommend rewriting the existing code. The current code has a lot of hard coding (which is difficult to add onto in the future) and there is a deep bug in the code that I spent quite a bit of time looking for, but I could not find. Current code also does not have a robust error handling system.

When writing the code, I would place a lot of emphasis on a good software design that can be easily modified for future needs.

 Keep in mind that a fourth list (in addition to students, recruiters, and VIPs) may be added (like SWE officers).

Import data dynamically and in a user-friendly way

  - The current process uses manual work. I think this could be eradicated.

  - The current process relies heavily on hard-coded values for this.

  - There is sparse error handling of this.

- I don't think the coding language matters as long as it fulfills the requirements listed in the User Experience section below.

<u>User Experience</u>

- **This program should be intuitive to use**. (This is bolded because I think it is very important.)

- It should be so easy to use that it shouldn't require much (if any) training or a manual to use.

- Don't fight the user. Work with them. Make their job easier and make them feel like a hero.

- Example: "Why can't I just insert this person here?" or "Why can't I just switch these people?"

- Downloading and running the program should be easy.

 - Ex: Not downloading obscure C++ libraries. The people using this software may not even know what Java or Python is.

<u>Additional Feature Ideas</u> (some of these might be just stretch goals, but I definitely think some of them would be reach-able).

- Flexible import formats (as I already mentioned above in the "Technical" section)

    - Don't keep to a specific format each time - fields may be altered year after year.

    - Users may not know what a .csv file is. Give them options such as excel, csv, or word.

- Flexible export formats (I personally think this is the coolest/most useful feature)

    - Allow users to choose various pieces/combos of data that they want exported and the format they want that in.

    - Ex: Choose to export all the tables with all of the names, companies, titles, grades, majors, etc. Or export just all the recruiters' info and their table numbers. Or export the people with a special meal and their table numbers, and so on

     - This could be a cool integration possibility with name tags and check in lists.

- Error handling!

     - Walk the user through why the program isn't working. Make sure you check for invalid data and be specific.

- Have a default sort priority order, but give the user the ability to customize or at least change a different sorting priority order.

        - Ex: prioritize students with seniority vs give no student a priority based on their year

        - Head table?

        - Spread out VIPs evenly vs placing them in a few head tables.
- Give statistics

  - It might be useful to see some statistics on the data and be able to print out a report every year. Ex: How many freshman, CS majors, and companies looking for CS majors.

Clients
Jessica Horii, 2019 Evening with Industry Director
Kelly Knechtel, SWE Faculty Advisor
Annette Pilkington, WISEM Director
TBA, 2020 Evening with Industry Director