A More Ethical Plane Seating Algorithm
The Overview
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Marisa and I worked on modifying the airplane company's algorithm that received financial gain at the expense of its customers, who they serve. With the help of Peter and Daiana, we modified the algorithm step-by-step. The general idea of our modification was to allow all consumers to purchase their seats without the ability to select their seats. Rather, the company will provide their seating information on their flight date. In doing so, the company will be granted the time to collect all the data (via algorithm) until maximum occupancy and then diversify the seating according to the data collected.

Prior to our changes, we decided it is best to continue to keep the max group size at three and to continue to indicate to economy plus passengers that there is only a 70% chance that their premium purchase seat will grant them a window seat.

To Get Started:
Sequentially, the algorithm temporarily removes the list of economy and economy plus seat members from the center rows (1,2,3) using a dictionary. Our goal was to seat groups purchased together. Then, seat single passenger fliers afterwards. To organize the plane more ethically we did the following:

- The first list pulled the economy seats purchased (unorganized).
- The second list pulled the EP seats from the center rows (1-3).
- The tuple (organized) list identified the value (# of seats) and then the "name/type" of the economy passenger. (For this sake - all names have been identified sequentially u-1, u-2, etc.)
- The last list identifies all of the single-ticket purchases (economy and EP passengers).

Final Thoughts:
While it seems unethical to purchase a premium ticket and not be guaranteed a premium seat, it is not wrong so long as the consumer is notified before the time of purchase. One idea to rectify the EP consumers were are seated in rows 1-3 could be to guarantee complimentary meals, movies, wifi (etc.) to those EP consumers during their flight.While this will not satisfy a fully ethical algorithm, providing consumers' seats on the day of their flight provides the opportunity for the company to create more ethical family/group centered travel.