

## Plane seating algorithm

### Things to consider:

- how many people in party?
  - Are they willing to sit in seat that are not adjacent to one another
  - how many people in a family?
    - Does someone prefer a window a seat or close to one (a seat adjacent to a window seat)?
- On paper, you don't get to pick your seat when you buy a basic economy ticket no matter which airline you're flying – your seat is assigned. The fear of getting stuck in a middle seat is **one of the primary ways airlines try to convince you to upgrade.**

But in practice, there are ways to pay up to get a better seat – and **one airline even gives you a window to move around the cabin for free**

**United** is an early favorite, thanks to **the most generous policy of paying to pick a seat you'll find among all three carriers.** From the time you're buying your flight until check-in 24 hours before departure, you can buy a seat. And in many cases, you'll find the fees to pick a seat are pretty reasonable.

**SOURCE:** <https://thriftytraveler.com/comparisons/airlines/the-battle-of-basic-economy-fares-american-vs-delta-vs-united/#seats>

- United Airlines:
  - \$9 for middle seat
  - \$10 for window seat
  - \$15 for aisle seat
- airlines do not want you to purchase the economy seats; aggressively try to upsell you

## PSEUDOCODE Plane Seating Algorithm

Some information may already be determined based on earlier conditions

1. create two dimensional list or array (representing plane seats) **plane**, with 40 rows and six columns
- 2.
3.  $\text{totalEcoSeatsInPlane} = 250$
4.  $\text{seatsSold}$  (unknown as of right now)
5.  $\text{seatsStillAvail} = \text{totalEcoSeatsInPlane} - \text{seatsSold}$
6. Welcome user to site and offer if they would like to purchase **economy plus** seat?
  - (a) If yes:
    - i. display where possible economy seats are and have user choose the seat they wish to purchase
    - ii. if the number of middle seats is **greater than**  $\text{seatsStillAvail}/2$ , ask client if they would like to upgrade
      - A. if yes:

- cycle through seats but EXCLUDE middle seats if possible
- B. If no:
  - offer list of seats for client to pick from
- (b) if no:
  - i. offer list of seats
    - A. Repeat 6a.
- 7. Compute total cost of seat:
  - (a)  $\text{seatCost} = \text{fare} + \text{other fees} + \text{stateTax}$
  - (b) display total cost and prepare for banking transaction
- 8. client submits their banking information into portal or website
- 9. process information
  - (a) contact bank if number matches that number of client's account
    - i. check if  $\text{seatCost} > \text{client's account balance}$ :
      - A. if  $\text{seatCost} > \text{balance}$  **or**  $\text{enteredBankNo} \neq \text{bankingAccountNo}$ 
        - display message: "We are sorry but something has gone wrong with this transaction. Please try again or contact your bank for further information."
      - B. else if  $\text{seatCost} \leq \text{balance}$  **or**  $\text{enteredBankNo} \neq \text{bankingAccountNo}$ 
        - display message: "We are sorry but this number does not exist. Please try again."
      - C. else if  $\text{seatCost} \leq \text{balance}$  **and**  $\text{enteredBankNo} \neq \text{bankingAccountNo}$ 
        - finalize transaction
        - generate confirmation number
        - direct browser or app to page to confirmation html/page with generated confirmation number
        - email client with seat number, balance, destination and departure locations as well as confirmation number, as well as string of client name to further personalize it
        - add all this information into database for possible future retrieval if problems arise
        - generate electronic ticket and send this as a QR code for their phone so it can be scanned at boarding
- 10. Thank client for their business.
  - (a) Add the string of their entire name into Thank You message.
  - (b) Politely remind client to keep both the confirmation email as well as the electronic ticket in case any issues do arise between the time purchase and the time of boarding.