Seat recommendation system

By Adual

The main Problem...

- Did you ever wish you had a better seat?
- Were you ever troubled by your co-passengers?
- Did you want to meet like minded people in the flight?

We have a Solution!!

Seat Recommendation System.

(With a little help from your smart phone)

Modelling a Passenger

- **His own personality**
  His/Her own personality
- **His/Her likes and dislikes**
  His preferences for his co-passenger

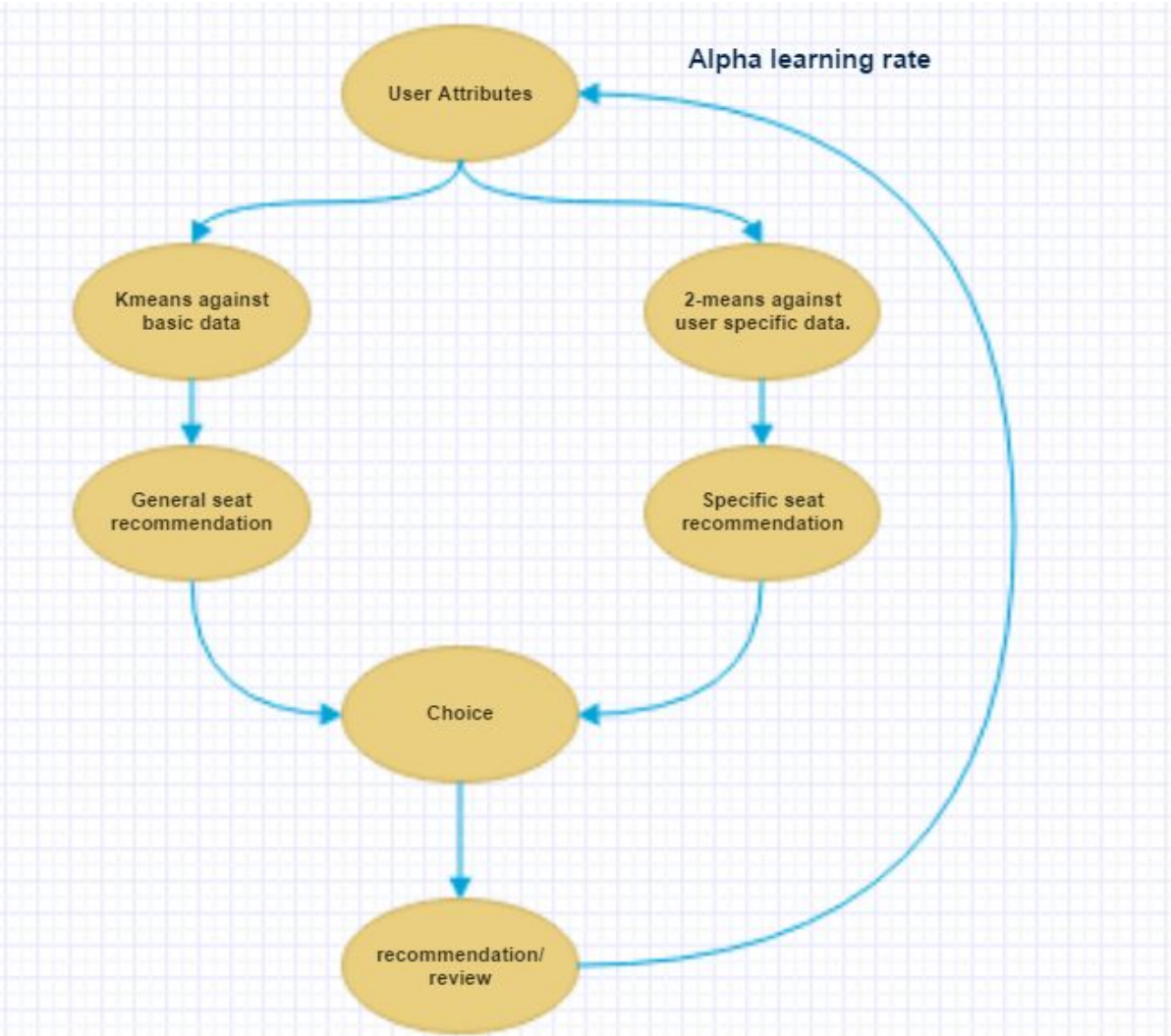
Inputs from...

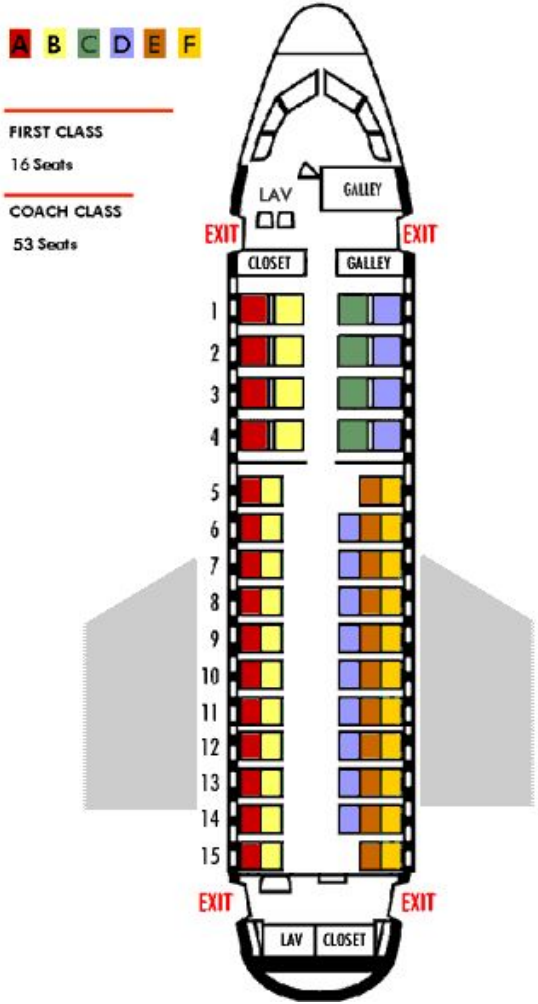
- **The passenger**
  This include basic information like age, sex, marital status etc...
- **Co-passengers**
  They give a short feedback on the passenger after each flight.

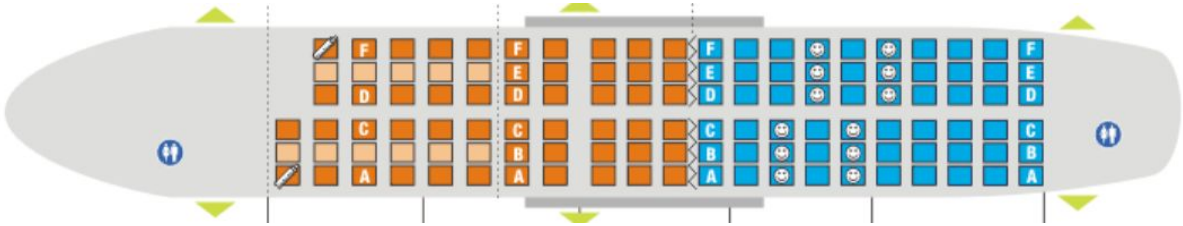
Feature Vector.

$$\mathtt{X} = \begin{bmatrix} — \ (x^{(1)})^T \ — \\ — \ (x^{(2)})^T \ — \\ \vdots \\ — \ (x^{(n_m)})^T \ — \end{bmatrix}, \quad \mathtt{Theta} = \begin{bmatrix} — \ (\theta^{(1)})^T \ — \\ — \ (\theta^{(2)})^T \ — \\ \vdots \\ — \ (\theta^{(n_u)})^T \ — \end{bmatrix}.$$

Work Flow


Alpha learning rate
User Attributes
Kmeans against basic data
2-means against user specific data.
General seat recommendation
Specific seat recommendation
Choice
recommendation/ review





- Color Code for each personality type.
- Recommended seats from our algorithm.

The Idea.

$$A_{new} = A_{old} + \alpha_V.\mathrm{B}$$

A = Passenger's Attributes.
B = Co-passenger's Attributes

The AI / ML aspect..

- Kmeans Clustering Algorithm
- Spectral Clustering Algorithm
- Gradient descent Algorithm
- Collaborative Filtering
- Adagrad Boosting

Thanks!