Finding Home:
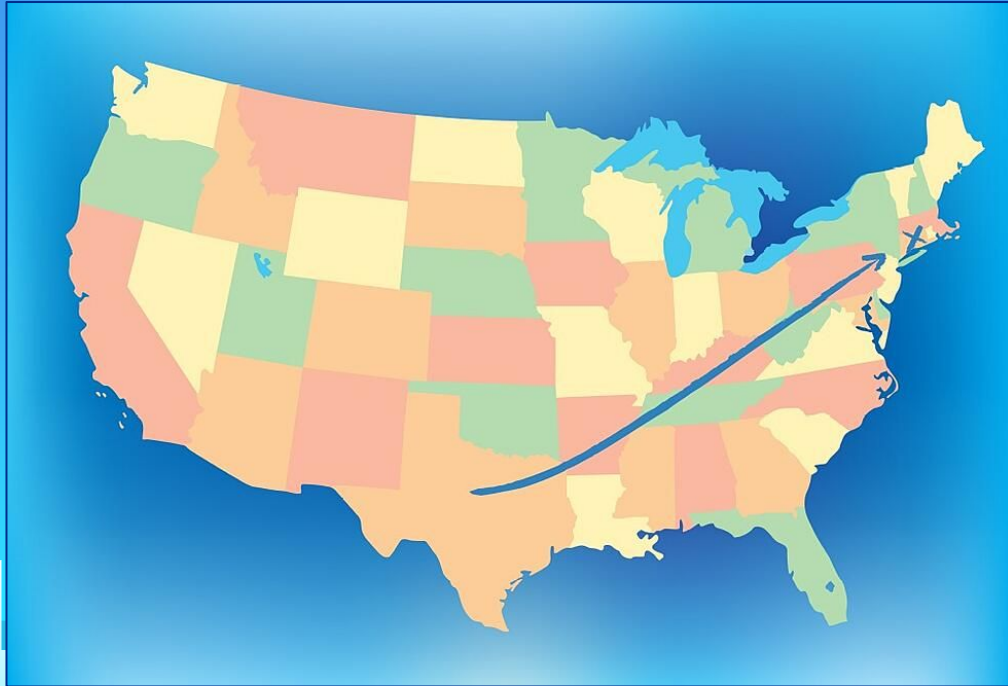## A Zip Code Based Recommender

By: Monica London

Problem

- 1.5% of the US population moves to a new state each year (Source: moving.com)
- Many people have a general idea of where they are going, but how do they narrow it down?
- Some people have limited time with job transfers and must act quickly

Value Proposition

Find a location that fits your vibe!

Commercial Use Case
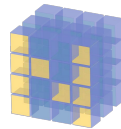
Realtors who work with relocation buyers

Tech Stack

Programming & Workflow Tools

Data Wrangling, EDA, & Building the Recommender System

Feature Categories

Demographics

- Income
- Age breakdown
- Marital statistics
- Veterans
- Language spoken
- Employment
- Education
- Families with children

Zip codes: 14,633
Features: 92

Location & Housing Data

- Total population
- Commute type and time
- Density
- Home Price Index
- Home type
- Age of home
- Years in current home

Approach

1. Develop a similarity matrix using cosine similarity with all selected features
2. Judged results based on location knowledge
3. Allow filtering between state or city/state
4. Determine how removing various features/feature categories impacts the recommender

Dallas, TX, 75205

Dallas (University Park), TX, 75205 > MA	
1	Wellesley Hills, 02481
2	Wellesley, 02482
3	Andover, 01810
4	Dover, 02030
5	Westborough, 01581
6	Chestnut Hill, 02467
7	North Andover, 01845
8	Lexington, 02420
9	Auburndale, 02466
10	Needham, 02494

Feature Comparisons

|	Dallas (University Park) TX 75205	Wellesley Hills, MA 02481
Has Graduate Degree	38.1%	50.3%
% Commuting Via Public Transportation	0.8%	11.0%
% Owner Occupied	64.5%	84.0%
Median Owner Household Income	$230,395	$233,266

Iterations

Method -> Removed a single feature/feature category

Result -> Total population, median income, density, or language had little to no effect on the recommendations. Removing employment breakdowns had the largest effect although it wasn't substantial

Results

It became clear that the features all work together and that none are significant in every instance
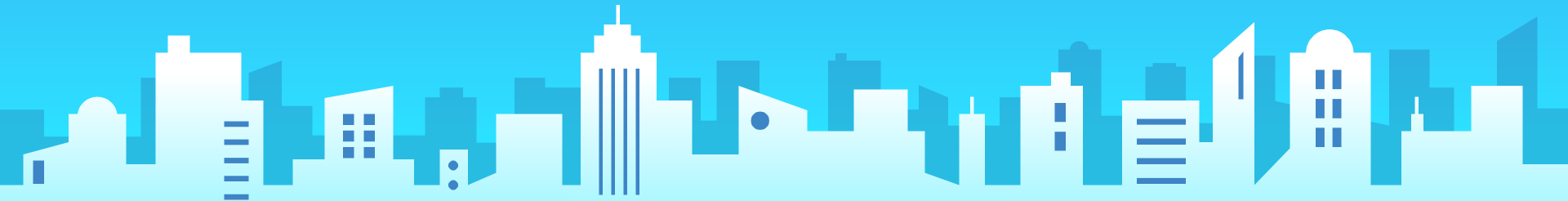
Future Steps

School Data

Coffee & Restaurants

Flask App

Thank You!

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