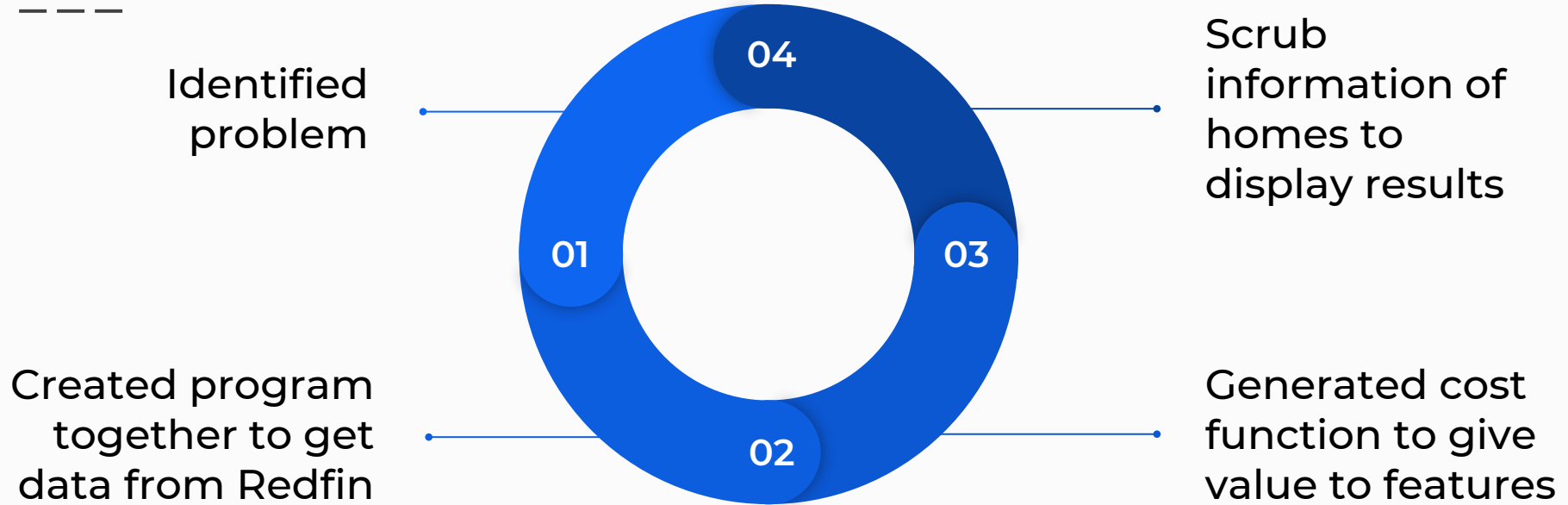# :~$ apt-get home

Mohit Gangwani

Purpose

- Challenging finding the right home

- Overwhelming amount of Real Estate websites

- All Real Estate websites are almost identical

- Too many results and ads on every Real Estate website

- Missing information on lots of websites

Process

– – –

Identified problem

Created program together to get data from Redfin

04

01

03

02

Scrub information of homes to display results

Generated cost function to give value to features

Why is This Useful?

There are Real Estate Agencies, Too!

———

People Are Moving

Percentage of Salt Lake City, UT Redfin users searching from...

Salt Lake City, UT: 70.6%
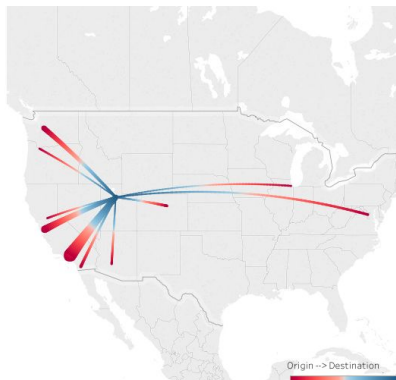Elsewhere: 29.4%

Origin as % of Destination Incomers
Out-of-state metros only

Los Angeles, CA	25.7%
Bay Area	14.1%
Seattle, WA	9.7%
San Diego, CA	4.8%
Washington, DC	4.2%
Denver, CO	4.0%
Phoenix, AZ	3.4%
Portland, OR	2.7%
Chicago, IL	2.6%
Sacramento, CA	2.6%

Source: Redfin user search data for Q1 2018   © OpenStreetMap contributors
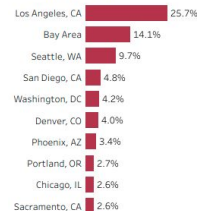
Origin --> Destination

Percentage of Portland, OR Redfin users searching from...

Portland, OR: 82.6%
Elsewhere: 17.4%

Origin as % of Destination Incomers
All

Bay Area	22.2%
Seattle, WA	16.6%
Los Angeles, CA	15.1%
Eugene, OR	9.3%
San Diego, CA	3.3%
New York, NY	2.6%
Sacramento, CA	2.3%
Washington, DC	2.2%
Phoenix, AZ	2.2%
Chicago, IL	1.7%

Source: Redfin user search data for Q1 2018   © OpenStreetMap contributors
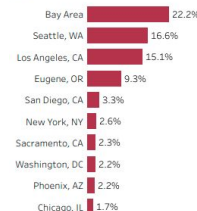
Origin --> Destination
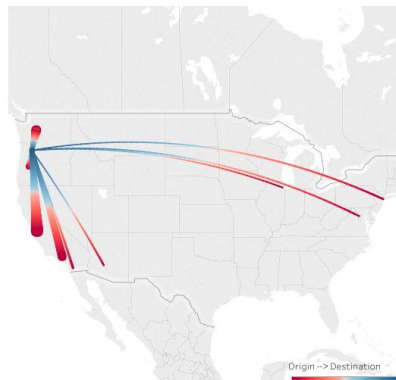
Percentage of Denver, CO Redfin users searching from...

Denver, CO: 81.3%
Elsewhere: 18.7%

Origin as % of Destination Incomers
All

Bay Area	15.9%
Los Angeles, CA	10.4%
Chicago, IL	8.3%
Fort Collins, CO	6.4%
Washington, DC	5.5%
Seattle, WA	5.3%
New York, NY	4.3%
Colorado Springs, CO	3.7%
San Diego, CA	3.2%
Dallas, TX	2.5%

Source: Redfin user search data for Q1 2018   © OpenStreetMap contributors
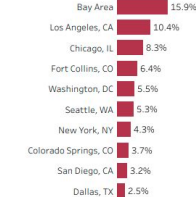
Origin --> Destination
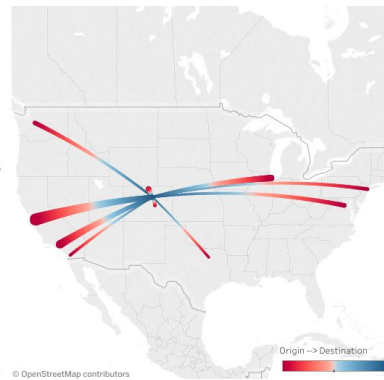
Percentage of Las Vegas, NV Redfin users searching from...

Las Vegas, NV: 56.4%
Elsewhere: 43.6%

Origin as % of Destination Incomers
Out-of-state metros only

Los Angeles, CA	37.4%
Bay Area	12.6%
Portland, OR	8.4%
Seattle, WA	6.0%
San Diego, CA	4.3%
Chicago, IL	3.1%
New York, NY	3.1%
Washington, DC	2.4%
Phoenix, AZ	2.0%
Urban Honolulu, HI	2.0%

Source: Redfin user search data for Q1 2018   © OpenStreetMap contributors
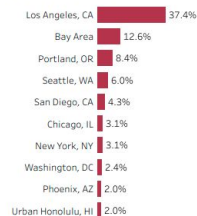
Origin --> Destination

Percentage of Phoenix, AZ Redfin users searching from...

Phoenix, AZ: 66.4%
Elsewhere: 33.6%

Origin as % of Destination Incomers
All

Los Angeles, CA	22.5%
Seattle, WA	15.0%
Chicago, IL	9.2%
Bay Area	8.4%
San Diego, CA	4.5%
Portland, OR	4.0%
New York, NY	3.9%
Denver, CO	3.6%
Washington, DC	2.6%
Tucson, AZ	2.0%

Source: Redfin user search data for Q1 2018   © OpenStreetMap contributors
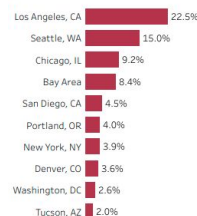
Origin --> Destination
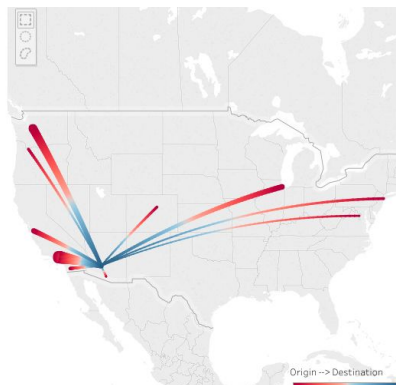
Percentage of Bay Area Redfin users searching in...

Bay Area: 79.3%
Elsewhere: 20.7%

Destination as % of Origin Leavers
All

Sacramento, CA	20.0%
Los Angeles, CA	12.2%
Seattle, WA	8.2%
Portland, OR	5.6%
San Diego, CA	4.7%
Austin, TX	3.4%
Denver, CO	2.6%
Phoenix, AZ	2.6%
Las Vegas, NV	2.5%
Chicago, IL	2.4%

Source: Redfin user search data for Q1 2018   © OpenStreetMap contributors

Origin --> Destination
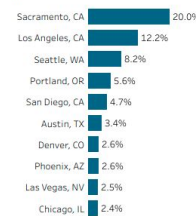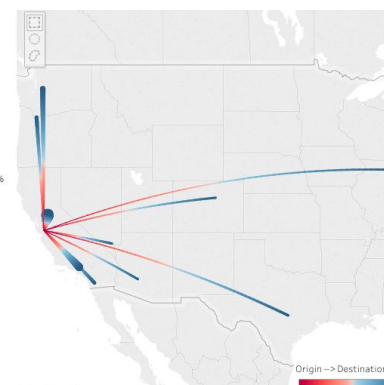
Solution

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- Apt Get Home

    - User enters link for a home have seen in person and like a lot

    - If the home is already in an escrow or about to close one

    - The model takes features into account and understands users needs

    - Gives user only two results that would fit their needs the most

    - Fewer results means easy decision making
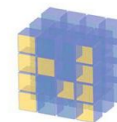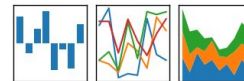
    - Users can't overlook due to too many results

Tools
———

- Web Scraping:
  - Python
  - Redfin
  - BeautifulSoup
- Cleaning Data:
  - Python
  - Pandas
  - Numpy
- Cost Function:
  - Main Model
  - Seven years of experience
- Testing:
  - Home shoppers at open houses
  - REALTORS in my network

Future

- User Database

- Model to change value for each feature

- Latent Model for every user

- Home value and time to sell predictor

  - Similar to KBB for homes

Any Questions?

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in/MohitGangwani

Data-is-Life

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