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CITY-FYNDERS

WHICH CITY WOULD YOU LIKE TO LIVE IN?

100 Best Places to Live in the USA

U.S. News analyzed the 100 most populous metro areas to find the best places to live. To make the top of the list, a place had to have good value, be a desirable place to live, have a strong job market and a high quality of life.

Read the Best Places to Live methodology

Population Size

- X-Large **2.5M+** (21)
- Large **1M - 2.5M** (31)
- Medium **500K - 1M** (46)
- Small **50K - 500K** (27)

Average Rent

< $500 - $1,700+

Median Home Price

< $20,000 - $830,000+

Commute Time

125 matches

SORT BY: Ranking | High to Low

Austin, TX

#1 in Best Places to Live

About 50 people move to Austin every day, drawn to the Texas capital's music, outdoor spaces and cultural institutions. Austin was ... more

7.8 Overall Score | **7.3** Quality of Life | **7.3** Value

Denver, CO

#2 in Best Places to Live

Founded in the mid-1800s as a mining hub during the gold rush, Denver has come a long way since its Wild West days. Over time, its ... more

BACKGROUND

NOW, LET'S DIY!!

4 TYPES OF SELECTED CRITERIA

- Environment
- Human Related
- Economy
- Entertainment

1. ENVIRONMENT
2. HUMAN RELATED
3. ECONOMY
4. ENTERTAINMENT

DATA USED

4 CATEGORIES

- Environment
- Human related
- Economy
- Entertainment

	Environment	Human	Economy	Entertainment
Seasonal avg. temperature	x			
Annual avg. precipitation	x			
Snowfall avg.	x			
Air and water quality	x			
Crime rate		x		
Avg. household income			x	
Unemployed rate			x	
Living cost				x
City-owned parks				x
Bar count				x
Restaurant count				x
museums count				x

DATA LIMITATION

esidents	NumTop200Restau	Bar_Rank	Restaurant_Rank	Museums_Rank	Libraries_Rank	Park_Rank	TopRes_Rank
	3.0	21.0	21.0	10.0	14.0	28.0	6.0
	2.0	15.0	12.0	19.0	19.5	4.0	8.5
	0.0	13.0	19.0	9.0	16.0	24.5	21.5
	NaN	NaN	NaN	NaN	NaN	NaN	NaN
	3.0	24.0	14.0	8.0	6.0	24.5	6.0
	NaN	NaN	NaN	NaN	NaN	NaN	NaN
	NaN	25.0	16.0	29.0	25.0	12.0	NaN
	19.0	2.0	3.0	4.0	4.0	33.0	3.0
	0.0	27.0	32.0	27.5	19.5	11.0	21.5

- Data obtained failed to satisfy every city (‘NAN EXISTS’)
- Data from different years
- Limited data obtained based on the chosen category

USE CASE

General User

- General ranking results with all factors
- Ranking results for four categories → Plot ranking results of all cities on a US map
- Users choose top 5 factors that they care about and give weight 1~5

Total 19 factors

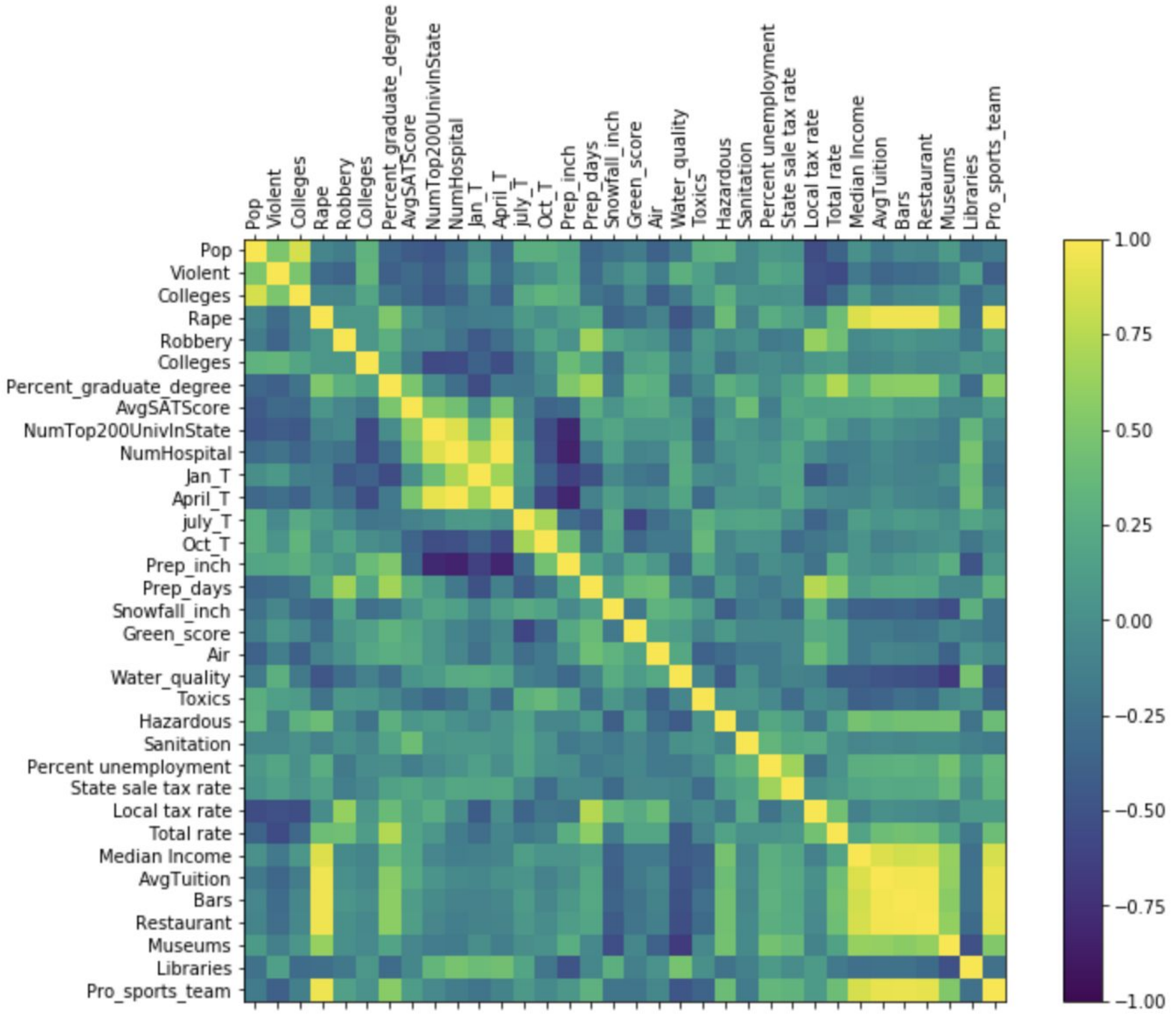
Researcher

- Colour graph showing the correlation coefficient of each pair of factors

USE CASE

Researcher

- Colour graph showing the correlation coefficient of each pair of factors



DESIGN

- Natural.csv
- human_related.csv
- economy.csv
- entertainment.csv

1

Data Processing

Longitude & Latitude Matching
find_loc

- rank_file.csv

Data Processing (City Ranking)
data_rank
create_rank

User-interface

2

Html - Style User Interface
layout_setup()

app.callback

User Choose 5 Criteria
user_DIY_graph

User Choose One Category
total_graph

Plot City Ranking on a Map
usmap_choose

Plot City Ranking on a Map
usmap_default

3

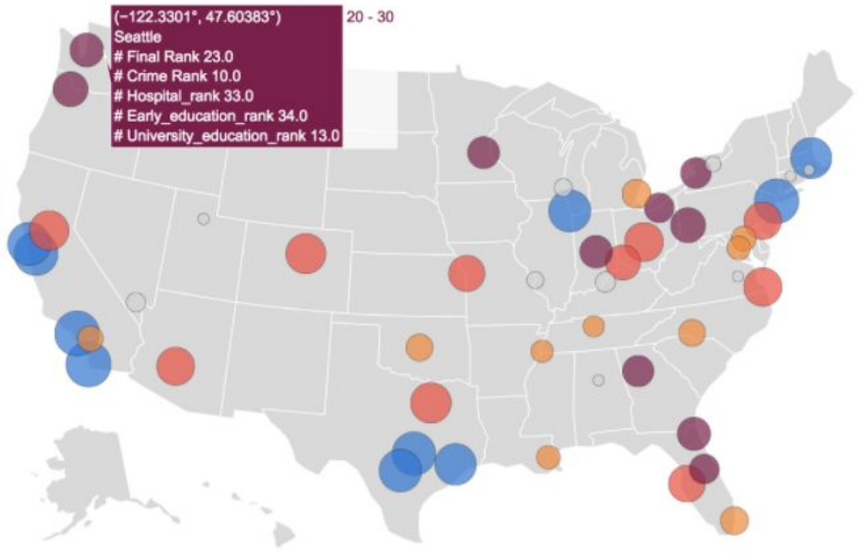
Plot on the map

DEMO

Find Your Dream City to Live in the US

Powerd by City Fynders

The human related ranking of US big cities

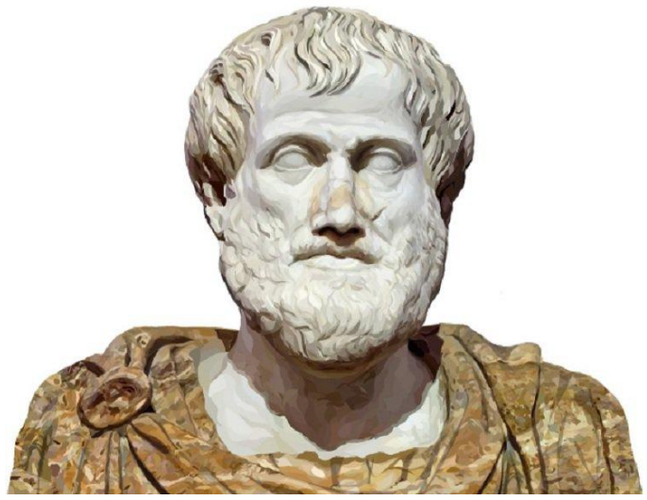


DEMO

PROJECT STRUCTURE

- **cityfyners/**
  - __init__.py
  - data_processing.py
  - plotly_usmap.py
  - UI_setup.py
  - **tests/**
    - __init__.py
    - test_geopy.py
    - test_usmap.py
- **data/**
  - natural.csv
  - human_related.csv
  - economy.csv
  - tertiary.csv
- **doc/**
  - Component_design.md
  - Functional_specification.md
  - Data.md
  - Presentation.pdf
- **examples/**
  - City_fynder.ipynb
  - Example_cityfynder.py
  - User_Interface.ipynb
- **scripts/**
  - city_script.py
- .gitignore
- .travis.yml
- LICENSE
- README.md
- setup.py

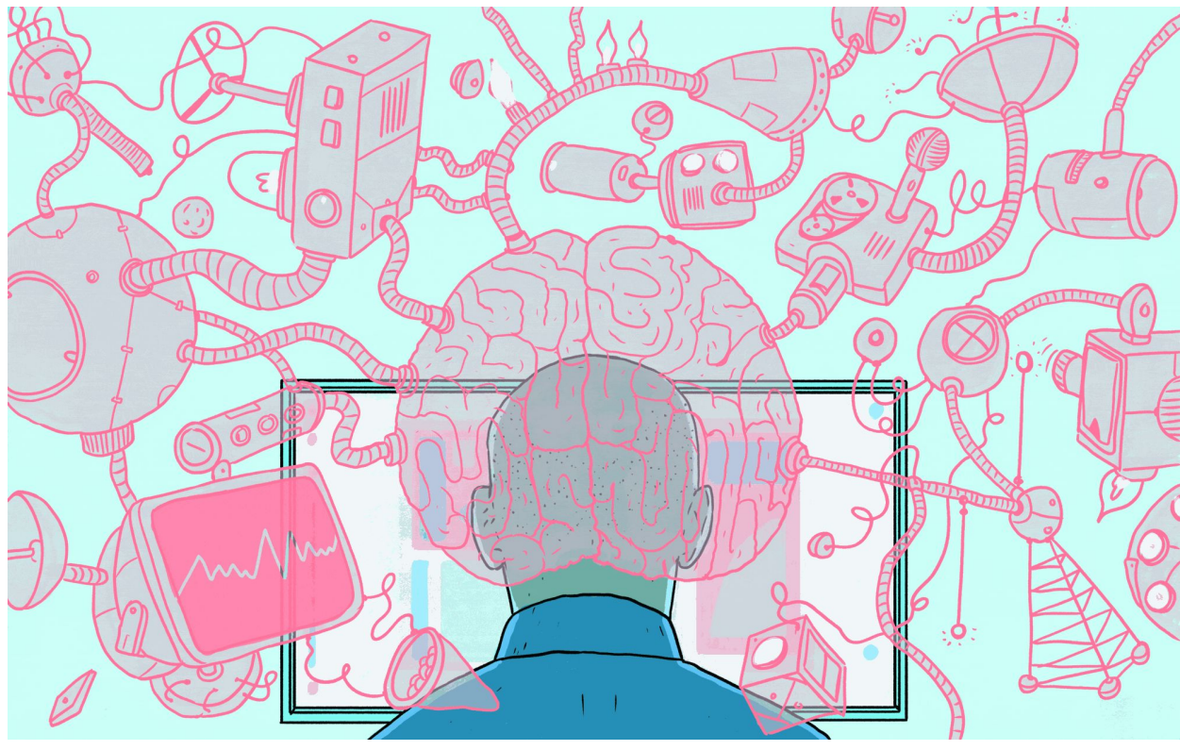
https://github.com/UWSEDS-aut17/uwseds-group-city-fynders



What we have to learn to do , we learn by doing.

— *Aristotle*

- Basic recognition of python
- Version control with github
- Programing styles
- Visualization with python
- Tests
- Software design



LESSONS LEARNED

- Set up a server displaying the webpage only
- Beautify and optimize the webpage
- Allow users to update the data
- More data analysis
- Apply machine learning to predict the changes of data

FUTURE WORK

Thank you!

Questions?

City-Fynders