COMPENSATION ANALYSIS TOOL

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CS 2XB3

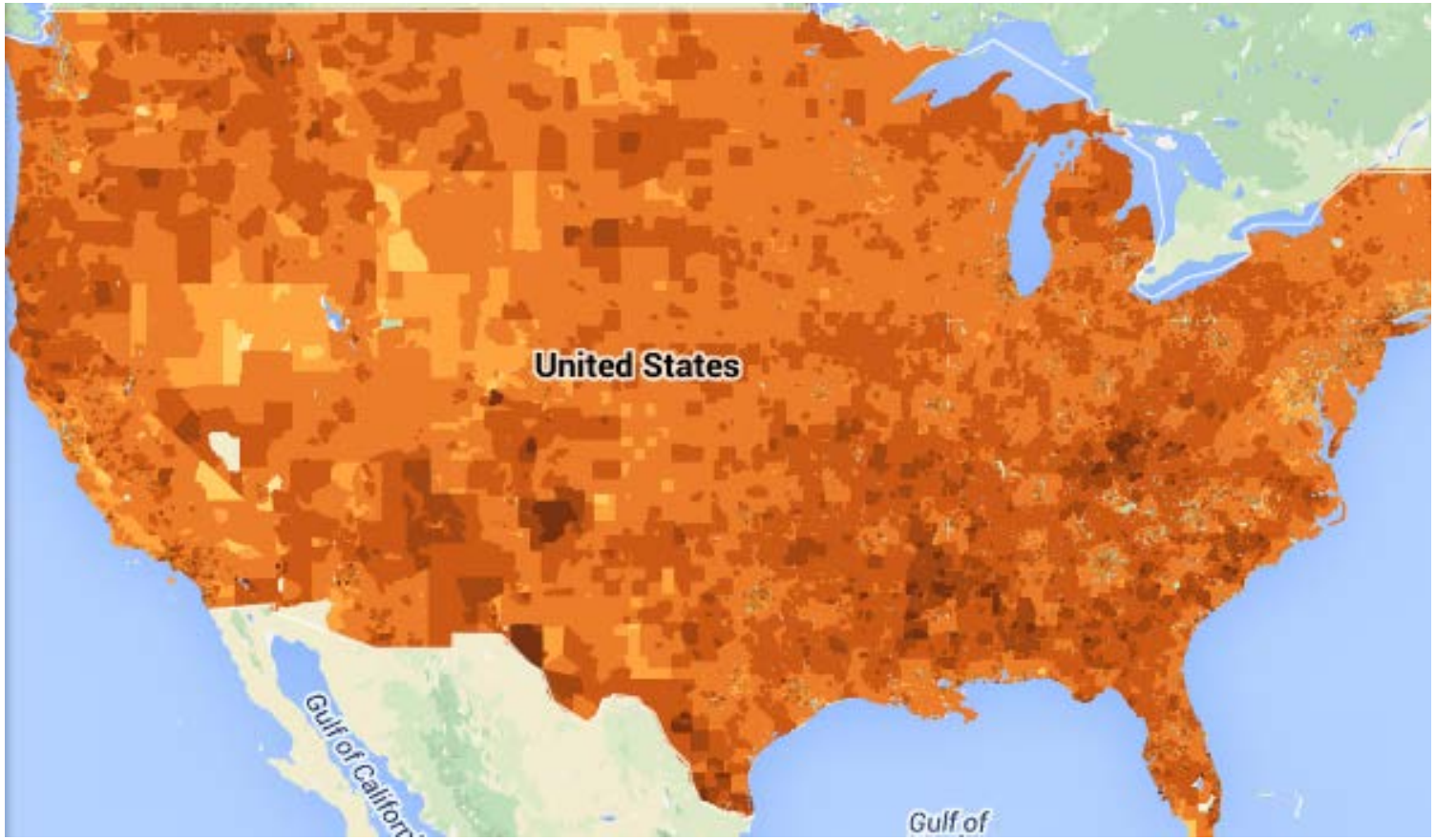
L04 GROUP 32

Problem

Compensation for a particular career can vary dramatically based on your location.

Problem

BUT: Cost of living also varies based on location!



Which locations are best from a financial point of view?

OBJECTIVE & SCOPE

The Analysis Tool will:

- Assess and rank the most viable locations to start a career.
- Produce a list of the best locations based on cost of living and employment statistics.
- Motivation is to help new graduates find a good balance between cost of living and average income in their wanted location.

Data Analysis Backend

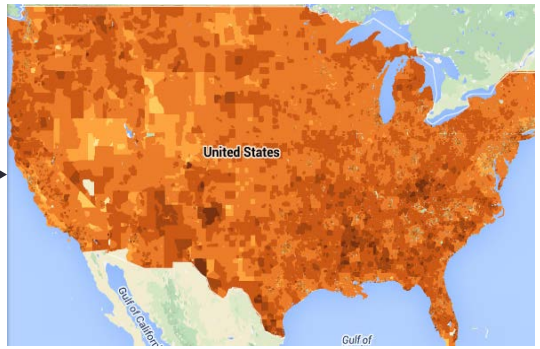
User Query

Location Data

Employment Data

Output

Affordability Data

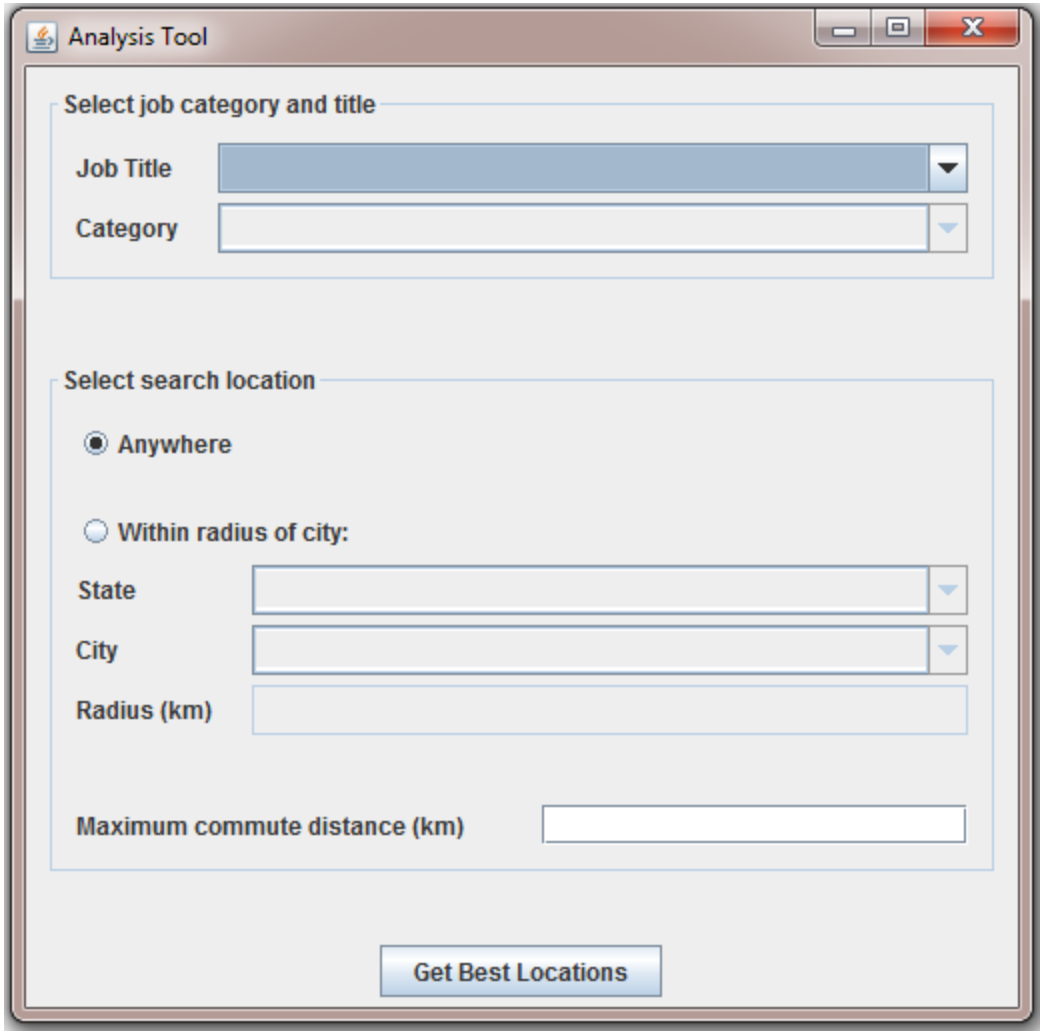


Datasets Used:

- Zillow Real Estate Research Data
- Occupational Employment Statistics published by The US Department of Labor
- Geographic location data published by the GeoNames database

Image sources: Google Maps, US Dept. Labor, US Dept. Housing/Transport

Functional Requirements



- User can input wanted

Job title, category, and location.

- Application must use the

Implemented datasets to list outputs of users inputs.

- Application must sort results

In an proper manner

Non-Functional Requirements

- Must look appealing and user friendly.
- Easy to use, and easy to read.
- Results must be fast, and must be shown in a clear manner
- Application must be available at all times.

Algorithmic Challenges

- Sorting and searching algorithms were used to navigate the loaded data sets

- A graph was used to represent paths between cities:

  nodes = cities

  edges = paths between cities, weighted for distance

- The main challenge was creating a graph of connections between cities: needed to keep edge count “reasonable”

- Solution: connect all major cities within 800 km of eachother, then for each major city connect all small cities within 200 km

Verification & Validation Methods

- The correctness of the data loaders/structures and the analysis methods were verified using JUnit test cases

- Manual testing was also carried out throughout the implementation process to ensure that the application functioned properly

Demonstration & Questions.