US Occupations IDB

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Vision

Vision: describe the application domain, your 3 models, instances of each model, and how the models are connected to each other.

www.bls.gov has a bunch of tables with numbers that have too much information. It also has heat maps, but they are static and the interface requires users to select a specific occupation by clicking links that narrow it down. All this bombarding the user can make it hard to view and compare heat maps and occupation information among different occupations.

We seek to provide a more intuitive and less cluttered interface that will focus on the key metrics that people look for while researching occupations and industries in the US. This includes implementing a versatile graphical view of the data to help users gain a more meaningful understanding of all the available information.

Models

- Industry (list of NAICS sectors)
    - Description
    - Occupations in each industry
    - Data
        - total employment
        - Pay
            - Occupation mean/median
            - Industry mean/median
    - Top locations, occupations, etc.
- Occupation
    - Profiles and categories (major groups oes)
        - https://www.bls.gov/ooh/a-z-index.htm#A
            - Contains each occupation in alphabetical order followed by the occupation catergory
    - Description
    - Industries that have the occupation (oes links to NAICS code)

        - Data
            - total employment
            - employment per 1000 jobs in area
            - Pay
                - Occupation mean/median
                - Industry mean/median
        - Top locations, industries, etc.
- Location
    - National (1 instance), State (50 instances), Metropolitan Area (Over 400 instances)
        - Each can show industry and occupations percentages
        - Heat maps
- Education (extra model if time allows)
    - Location (National, State, Area)
    - Industry (NAICS Sector, Industry)

Data Sources, Database Use

Data Sources

- https://www.bls.gov/oes/tables.htm
    - Occupations are grouped into five catgories (total, major, minor, broad, detailed) with ‘total’ encompassing all jobs
- https://www.bls.gov/ooh/
    - Provides info for each occupation, such as
- https://simplemaps.com/data/us-cities
    - Provides info for each US city, such as:
        - Population
        - City
        - County
- https://www.census.gov/developers/
    - Provides demographic
    - The U.S. Census Bureau collects data that measure the state of the nation's workforce, including employment and unemployment levels, as well as weeks and hours worked. s
    - https://www.census.gov/content/census/en/data/tables/2016/econ/susb/2016-susb-annual.html
        - Provides industry information by state

Database Use

- Occupation Info
    - Broad and specific categories
    - Description of occupation

    - Included industries
    - Location information (heatmap)
    - Percentile wage info
- Industry Info
    - Categories
    - Description
    - Included occupations
    - Location information (heatmap)
    - Percentile wage info
- Location Info
    - Country, States, Areas
    - Spread of occupations and industries
    - Percentile wage info

Planning

We will be using the phase deliverable outline in the project proposal slides.
Some minor modifications/specifications:

- Phase 1
    - Using GCP to host website
- Phase 2
    - Using PostgreSQL as DB

Tools: What tools will you be using?

- React and Redux
- GCP
- Postman
- pgAdmin 4 (PostgreSQL)