**Project Title:**  Identifying Walmart Deserts in the USA

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**Project Description / Outline:**

This project identifies areas within USA that do not have a Walmart within the zipcode. It also studies the correlation between the Poverty Rate and the number of Walmart stores per zipcode.

**Datasets used:**

|  |  |  |  |
| --- | --- | --- | --- |
| **Dataset Description** | **Type** | **Source** | **Link** |
| Walmart store locations | csv | data.world | <https://data.world/data-hut/walmart-store-location-data> |
| US latitude & longitudes | csv | opendatasoft.com | <https://public.opendatasoft.com/explore/dataset/us-zip-code-latitude-and-longitude/export/> |
| US Census | API | Census | <https://github.com/CommerceDataService/census-wrapper> |

**Rough Breakdown of Tasks:**

|  |  |
| --- | --- |
| **Task** | **Description** |
| **Extract** | |
| 1 | Extracted the Walmart store locations from a csv file to a Pandas DataFrame |
| 2 | Extracted the latitude and longitude per US zip code from a csv file to a Pandas DataFrame |
| 3 | Extracted the Population and Poverty Counts using the Census API |
| **Transform** | |
| 1 | Updated datatypes of certain columns used in analysis |
| 2 | Filtered & grouped and performed aggregations for relevant columns using Pandas |
| 3 | Cleaned the data set by deleting null data values from the analysis |
| 4 | Renamed columns for standardization & consistency |
| **Load** | |
| 1 | Developed the table schema using QuickDBD for tables to be loaded in the Postgres database |
| 2 | Imported the table schema from QuickDBD to create the tables in the Postgres database |
| 3 | Created a connection with the PostgreSQL database using SQLAlchemy |
| 4 | Stored the final datasets into PostgreSQL using SQLAlchemy |
| **Visualization & Statistical Analysis** | |
| 1 | Plotted the poverty rates as a heat map using Google API |
| 2 | Plotted the Walmart store counts as a symbol layer using Google API |
| 3 | Performed linear regression to identify correlation between Poverty Rate and Walmart store counts |

**Combined Visualization of Walmart store counts and Poverty Rate Heat map:**

