

Use Cases and Logical Architecture

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- Project Title: Google Maps Safest Route

Section 1: Use Cases

1.

Title	Collect Raw Data
Primary Actor	Python Web Scraper
Story	<ul style="list-style-type: none">- Script log to some websites- Script search for some key words- Script gather data from source- Script save data to Raw Database

2.

Title	Clean Data
Primary Actor	Data Cleaner Script
Story	<ul style="list-style-type: none">- Script parse through data from Raw Database- Find relevant information and save into a useful format in Clean Database

3.

Title	Prepare Data
Primary Actor	Data Preparation Script
Story	<ul style="list-style-type: none">- This script has to read data from Clean Database and add new information as to get the latitude and longitude coordinates starting from street name- Add (calculate) danger level of the street

4.

Title	Keep Data Actual
Primary Actor	Update Data Script
Story	<ul style="list-style-type: none">- The Script periodically read data from database and eliminate expired entries

5.

Title	Final Data Generator
Primary Actor	Final Data
Story	<ul style="list-style-type: none">- This script read all entries from previous database and generate one entry for each street name and save data to Final Database

6.

Title	Safe Route Mapping
Primary Actor	Client
Story	<ul style="list-style-type: none">- When a client request information about a route security, from the Final Database will be retrieved information about security level for each street which compose the route and that info will be mapped to the map

Section 2: Logical Architecture

Web app - using HTML, JavaScript

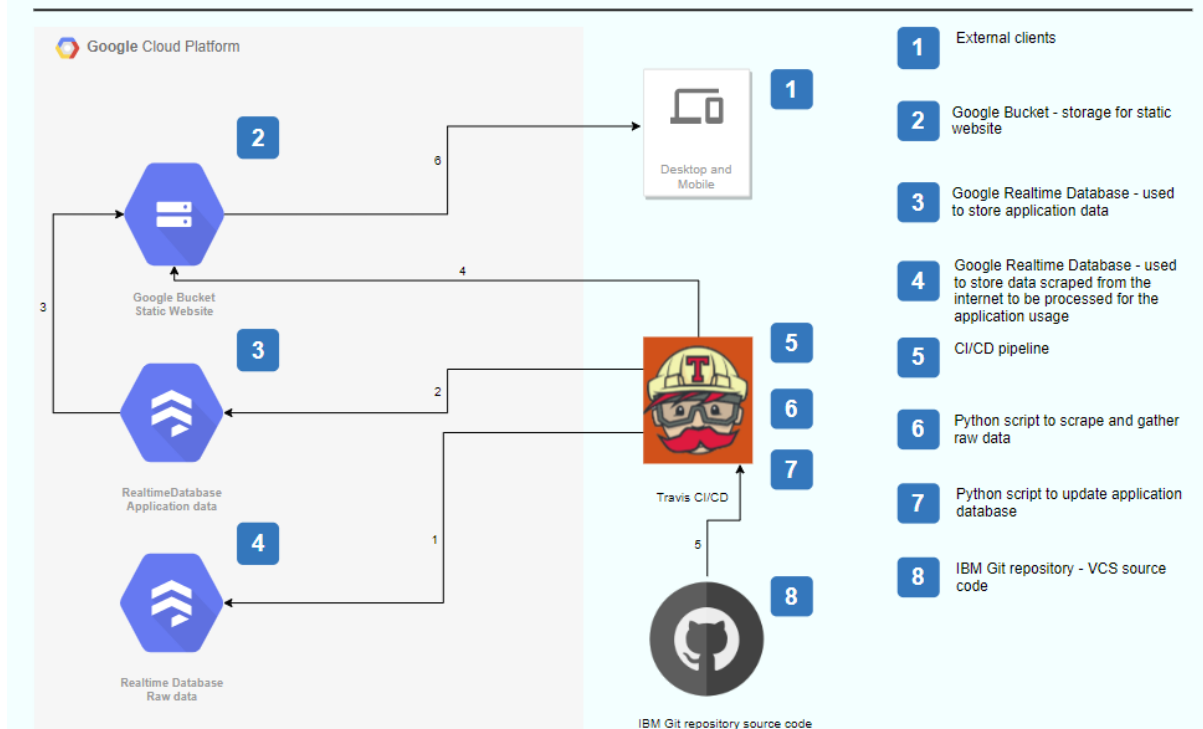
Web Scraper script - using Python, and its accompanying library BeautifulSoup, Pandas,

Update Database script - using Python and its accompanying library Firebase, Gcloud

Databases - NoSQL database Google Firebase - Realtime Database

Data format - JSON

Google Maps Safest Route



Logical Architecture Discussion

Data flow:

- 1- Save raw data scraped from web
- 2- Save clean data
- 3- Use data
- 4- Update application files
- 5- Upload new app version files
- 6- External clients use the app