**507 Final Project Proposal**

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**Project Name**

US Airforce Base in North America and Europe and their Fast-Reaction Zone

**Data Source**

US Air Force List of Aircraft Squadrons (more than 100 squadrons): <https://en.wikipedia.org/wiki/List_of_active_United_States_Air_Force_aircraft_squadrons>

US Air Force List of Fighters

<http://www.af.mil/About-Us/Fact-Sheets/Indextitle/F/>

<http://www.combataircraft.com/en/Military-Aircraft/Fighter-Attack/>

Challenge Score: 8.

Crawling [and scraping] multiple pages in a site you haven’t used before ✣

**Data Access and Storage**

Caching the raw results in JSON file.

Build the database with three tables as below:

Table 1. SquadronsInfo

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| SquadronName | Command | Wing | Base | Aircraft |

More than 100 records

Table 2. AirbaseInfo

|  |  |  |
| --- | --- | --- |
| Base | Longitude | Latitude |

Dozens of records

Table 3. AircraftInfo

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Aircraft | PrimatyFunction | Contractor | Speed | Range |

About 10 records

**Data Processing**

Sum the numbers of squadrons in each base and each command. Calculate the fast-reaction zone of certain airbase by the speed and range of the aircrafts it has.

**Unit Testing**

Test the ability to get data from website

Test the ability to get data from database.

Test the ability to process the data in the dataset.

**Data Presentation**

Provide an interactive command line prompt for user to choose data/visualization options. Display selected graphs using plotly.

1. Command [”USMap”]: Plot the locations of all airbases in US.
2. Command [”SquadeName” “time(min)”]: Plot the range of certain US airforce squade can react in certain times.
3. Command[“CommandRank”] Draw the Pie chart of all US Airforce Commands by the number of squades.
4. Command[“WingRank”] Draw bar plot of the top 10 wings with the most squades.

Present Data by Plotly.