**SER 594: Semantic Web Project**

**Project: Yatra A Road Trip Planner**

**Description:**

Yatra is a web application which helps users plan a road trip in United States. A user enters source and destination for a trip and Yatra will suggest an optimized route along with information of local attractions where the user can make stops while travelling that route.

Key features of the application:

* Guides the users to make necessary stops at different intermediate locations (waypoint), like gas stations, restaurants, camping grounds etc. based on filter criteria entered by the user.
* Provides various details of multiple attractions within a 3-mile radius from a waypoint to view nearby attractions.
* Helps in finding out a user’s facebook friends with whom a meetup can be planned on the way of the road trip.
* Estimates the road trip cost depending on factors like mileage, seats and type of vehicle.

**Working:**

Yatra accepts the source and destination from the user using a dropdown which contains a list of locations. The latitude and longitude coordinates are fetched from the geolocation RDF dataset. Using these geolocation coordinates the application queries the Location RDF dataset.

The Location RDF dataset contains custom RDF triples from Google Maps API that defines the optimized route between the source and destination terminals. It also contains the information about the terminals, intermediate locations and the local attractions. The application also queries the FacebookFriends RDF dataset to identify if any of the user’s Facebook friends are living close to any of the waypoints.

**Datasets and Sources:**

The four datasets that we plan to use in our application are as follows, along with the source description.

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| Data | Source and format | Purpose |
| Automobile Data | * Scrapped off from http://www.fueleconomy.gov/ * A crawler was implemented using python which could read the data from the provided URL and return the data in CSV format. * The data in CSV format was programmatically converted using Java into RDF dataset for further use. | This data helps in finding which vehicle the user will be taking on the road trip. Based on the type of vehicle, its mileage and other related data, the application determines the budget of the road trip. |
| GeoLocation Data | * GeoLocation data source: http://download.maxmind.com/download/worldcities/worldcitiespop.txt.gz * The exact location for each city in United States along with latitude and longitude coordinates was gathered in CSV format * The data in CSV format was programmatically converted using Java into RDF dataset for further use. | The purpose of geolocation data is to map the city name with its coordinates which is sent to Google Elevation API. This data is also used to find coordinates of the city where user’s facebook friends live in. |
| Facebook Friends Data | * Source: Facebook Graph API * The location names and details of friends was captured in JSON format using Python * The data in JSON format was programmatically converted using Java into RDF dataset for further use | This data essentially helps in finding the name, location and geolocation coordinates of the user’s friend on the trip route, with whom a meetup can be planned. |
| Attractions and Intermediate Locations Data | * API sources   + (Intermediate location): Google Elevations API,   + (NearBy Places): Google Nearby API * The intermediate locations/waypoints and other attraction informations related to the waypoint is being fetched in JSON using Java program * The data in JSON format was programmatically converted using Java into RDF dataset for further use | This data helps the user take various stops to view nearby attractions, gas stations, food joints etc that lie on the trip route. |