SOEN 487
WEB SERVICES AND APPLICATIONS

FINAL PROJECT - API MASHUP SITE
Google Maps - Open Weather - ISS - Meetup - SportsRadar

Zachary Bergeron - 26593925
Matthew Rauch - 26777147
Andres Kebe - 26638422
Quentin Dumoulin - 27734719
Ravikumar Patel - 26645208
Abhishek Appadoo - 26540635

Built using JavaScript, Node.js and MongoDB our application allows the user to see the weather, the upcoming MLB games of the day, the location of the International Space Station and finally the upcoming Meetups at all the viewable cities in the map. Our application uses 6 APIs total, that can be displayed individually or together.
The map is always visible and Geolocation calls are made behind the scenes, but the 4 other APIs can be turned on or off using checkboxes in the main page.
Finally, our application runs in a single page, Index.html

Description of APIs used:

- **Google Maps** : The backbone of our system.
  Querying the Google servers directly, we are capable of displaying a fully interactive and draggable map that has a listener attached to it, that returns all the coordinates that are viewable in the view port.
- **OpenWeatherMap** : We get the coordinates of the boundaries from the map, and send these them to the OpenWeatherMap server.
  To reduce the number of viewable cities, we selected the cluster option.
  Every time the map is dragged an AJAX call is made to the OpenWeatherMap server, that returns the temperature of the nearby cities in a JSON format. We then parse this JSON data and display the temperature of the cities depending on the coordinates
- **SportsRadar**: Using the SportsRadar service we can query detailed information about a variety of sports. In our project we decided to showcase the Major League Baseball (MLB) game boxscores of the day. We are running a trial of this API because normally it comes with a cost of approximately 1800 USD per month, per sport. We first query the SportsRadar API with the date and the appended key, Receiving a JSON list of all the games taking place on a given day. Since the address of the stadium is in a standard form we need to have it converted to GeoLocation information before we can mark it on the map. To do this we query the **Google Geolocation API**. However, this API does not like having many requests (~10) in a row, and on any given day the number of games can be up to 16. To overcome this, we store the geolocation of the home teams in our database, and only query the Geolocation when the desired location isn't in this database. Once the geolocation has been determined, by either requesting it or querying the database, we proceed to query the next location of the next game. Once the last game of the day has been processed, a JSON file containing all this information is returned to the AJAX call and displayed on the map.

- **Google GeoLocation API:** Used to convert the standard addresses given from SportsRadar into geolocation information to be able to place markers on our map.

- **Meetup**: similar to the previous APIs, an AJAX call is made to the Meetup server and the server returns a large JSON file with all the information. We parse that information and proceed to display it on the map.
  Every time the user clicks on the map, the queried coordinates get updated, and a new request is sent to the server. Only the meetups within 15 KM of this location are displayed.
- **Where is the ISS** : Our final API and the simplest to implement, we simply query the Where is the ISS server every time the map is dragged, and the server returns in a JSON file the location of the ISS. We simply parse this information and proceed to display the location of the ISS in the map.