Google Map API based user location tracking assessment.

-The Geolocation API will allow us to track a user’s location in real time.

-This will let us find the location data including altitude, longitude, and a timestamp from a user’s mobile device.

-The built-in GPS in the user’s phone will be used to track the location.

-Places API

-It provides a data related surrounding places and information.

-Based on the user’s location, it can find some places like restaurant, shopping malls.

-Each place will have a location information (altitude, longitude)

-Roads API

-It will allow us to have information about roads.

-It will return the road’s geometry, directions.

Data types that we will need: JSON (we need to turn it into CSV)

-Time stamp: We will need to determine the time interval depending on its efficiency.

-location: altitude, longitude

JSON

* Key, Value data pair
* It would look something like this.
  + {
  + "timestamp": "2023-10-08T12:34:56" // ISO 8601(standard time format)
  + "longitude": -73.987654,
  + "latitude": 40.123456
  + }

-The JSON file will be parsed using python.

CSV

-Using pandas in python, we will turn a JSON object into CSV type.

-Each row will represent the record.

-Each row will represent the field.

-The location data will look something like this

Timestamp, Longitude, Latitude

"2023-10-08T12:34:56", -73.987654, 40.123456

"2023-10-08T13:45:00", -74.012345, 40.234567

"2023-10-08T14:30:15", -73.900000, 40.300000

Converting JSON to CSV:

When converting JSON data to CSV format, each key in the JSON object corresponds to a column in the CSV file, and each value is mapped to a row in the CSV file.

Example :

#JSON

{

"timestamp": "2023-10-08T12:34:56"

"longitude": -73.987654,

"latitude": 40.123456

}

```

After conversion, it may look like this:

#CSV

timestamp,,longitude,latitude

2023-10-08T12:34:56,-73.987654,40.123456