**About Company**  
This task from Tranzmeo for senior python developer to data science team  
  
**About Task**  
This task is related to geographical map with calculating with latitude and longitude, this task created in Django Rest Apis.  
  
Attached Documents

1. latitude\_longitude\_details.csv – this file contains lists of latitudes and longitudes.
2. terrain\_classification\_test.csv – this file contain name terrains and its distances

In the first question, find all the out-of-line points with the use of latitude and longitude in latitude\_longitude\_details.csv.  and fixed the out-of-line points and created a new file corrected\_latitude\_longitude\_details.csv.

In the second question, using latitude\_longitude\_details.csv and terrain\_classification\_test.csv, find all the terrains by comparing with distance inside the terrain\_classification\_test.csv file and calculating with latitude and longitude inside latitude\_longitude\_details.csv. then saved to the Database (table name: LatAndLongTerrain) and also generated a new file latitude\_longitude\_with\_terrain.csv.  
  
In the third questing, I wrote a Query to list all the points with terrain “road” in it without “civil station” from the database and also generated a new file filtered\_terrain\_points.csv as per the result.  
  
**Module are used:**

**pandas**: Library for data manipulation and analysis.

**numpy:** Library for numerical computing with array support.

**csv**: Standard library module for reading and writing CSV files.

**geopy**: Library for geographical calculations and distances.

**Database:** Postgres