Since our plan consists in predict dengue cases among the brazilian states taking into account the prximity, we chose to compute the distance between the states using possible paths instead of the great circle distance. Therefore, we opt to use the Google Maps API, which has such functionality. We needed an API key from Google API services to use it with the googlemaps library in python.

For every state we obtained the distances and created a distance matrix to store all the date. It is important to note that for two satetes, *Amapá* and *Acre,* googlemaps could not find any valid route between the any other state in Brazil. Therefore, we used, only for these states, the great circle distance, which we computed using the *Haversine* formula, that has as input the coordinates of the cities and ouput the distance in kilometers of the great circle between them.