

“Python TSP – User Manual”

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1.- Requirements

To run this program, you need to be in the root folder and run the following lines in the command prompt.

```
pip install -r requirements.txt
```

2.- Prepare Data

Prepare a CSV file with the coordinates you want to use with the TSP Algorithm, once you have done that you can go to the next step.

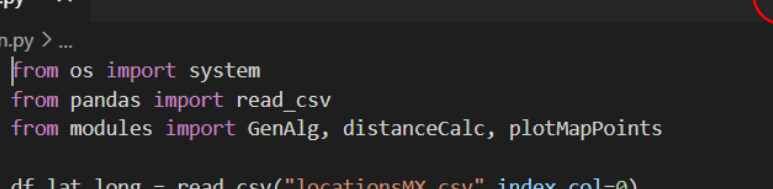
```
,Latitud,Longitud
Ciudad de México,19.42847,-99.12766
Guadalajara,20.66682,-103.39182
Puebla,19.03793,-98.20346
Monterrey,25.67507,-100.31847
Chihuahua,28.63528,-106.08889
Mérida,20.97537,-89.61696
San Luis,22.14982,-100.97916
Hermosillo,29.1026,-110.97732
Saltillo,25.42321,-101.0053
Mexicali,32.62781,-115.45446
La Paz,24.1164209,-110.3727682
Morelia,19.70078,-101.18443
Aguascalientes,21.8857199,-102.3613409
Campeche,19.8305579,-90.6148583
Colima,19.2400444,-103.7636275
Tuxtla Gutiérrez,16.7459857,-93.1996112
Durango,24.5783354,-107.0863839
Guanajuato,21.0251042,-101.2928999
Chilpancingo,17.5476979,-99.5674567
Pachuca,20.0825056,-98.8268193
Toluca,19.294099,-99.7012549
Cuernavaca,18.9318685,-99.3106063
Tepic,21.5009712,-104.9469459
Oaxaca,17.0812861,-96.8057729
Querétaro,20.6121228,-100.4802585
Chetumal,18.5221567,-88.3397985
Culicán,24.8049008,-107.4933553
Villahermosa,17.992517,-93.0231625
Ciudad Victoria,23.740981,-99.2133793
Tlaxcala,19.416135,-98.7274527
Xalapa,19.5420361,-96.9549493
Zacatecas,23.0676883,-104.7929726
```

3.- Run Code

Once you have installed all the libraries the programs need and prepared the data, make sure that the file name is correct in the main.py file of the root carpet of the program.

Note: In this case our csv is named “locationsMX.csv”

Then, you can easily run your program by clicking the play button on your favorite Python IDE in the file “main.py”.



```
main.py X
main.py > ...
1 from os import system
2 from pandas import read_csv
3 from modules import GenAlg, distanceCalc, plotMapPoints
4
5 df_lat_long = read_csv("locationsMX.csv",index_col=0)
6 latLongDict = df_lat_long.to_dict()
7 print(df_lat_long)
8 distanceMatrix = distanceCalc.get_distance_matrix(df_lat_long)
9
10 ordered_cities_dict = GenAlg.solve_TSP(distanceMatrix, latLongDict,
11 | | | | | pop_number=80,max_gen=12800)
12 # ordered_cities_dict = {'1' => Durango': [24.578335, -107.086384],
13 plotMapPoints.set_locations_mex(ordered_cities_dict,"index.html")
14 system("index.html")
```

Finally, you can open the output file generated by our TSP Algorithm.

NOTE: It always going to be an html file. And you can rename as you wish in the main file.

