Assignment - Topsis

Part-I

1. Learn the mathematics of Topsis: Link-1, Link-2

2. Implement the Topsis in python.

3. The solution must be a command line program.

    A. Usages:
   - $python <program.py> <InputDataFile> <Weights> <Impacts> <OutputResultFileName>

    B. Example:
   - $python topsis.py data.csv "1,1,1,2" "+,+,-,+" output-result.csv

4. Your program must check for:

   - Correct number of parameters (inputFileName, Weights, Impacts, resultFileName).
   - Show the appropriate message for wrong inputs.
   - Handling of "File not Found" exception
   - The input file must contain three or more columns.
   - From 2nd to last columns must contain numeric values only (Handling of non-numeric values)
   - The number of weights, number of impacts and number of columns (from 2nd to last columns) must be the same.
   - Impacts must be either +ve or -ve.
   - Impacts and weights must be separated by ',' (comma).

5. Input Output Format

Input File*							**Output File***						
Fund Name	P1	P2	P3	P4	P5		Fund Name	P1	P2	P3	P4	P5	Topsis Score	Rank
M1	0.67	0.45	6.5	42.6	12.56		M1	0.67	0.45	6.5	42.6	12.56	20.58	2
M2	0.6	0.36	3.6	53.3	14.47		M2	0.6	0.36	3.6	53.3	14.47	40.83	4
M3	0.82	0.67	3.8	63.1	17.1		M3	0.82	0.67	3.8	63.1	17.1	30.07	3
M4	0.6	0.36	3.5	69.2	18.42		M4	0.6	0.36	3.5	69.2	18.42	50.22	5
M5	0.76	0.58	4.8	43	12.29		M5	0.76	0.58	4.8	43	12.29	10.41	1
M6	0.69	0.48	6.6	48.7	14.12		M6	0.69	0.48	6.6	48.7	14.12	80.51	8
M7	0.79	0.62	4.8	59.2	16.35		M7	0.79	0.62	4.8	59.2	16.35	70.74	7
M8	0.84	0.71	6.5	34.5	10.64		M8	0.84	0.71	6.5	34.5	10.64	60.33	6

* Your input-data and output-result may be different.

Part-II

6. Develop a python package and upload it to the pypi.org

- **Naming convention** for the package - "Topsis-FirstName-RollNumber"
- Example: **Topsis-Shyam-10155792**
- **Link-1, Link-2, Link-3** to learn "How to build and upload your python package to PyPi".
- Learn how to create a python package using Youtube (or any other available resources).
- User Manual must be provided
- **Sample Example:** https://pypi.org/project/topsis-3283/
- Test the package by installing it and run it through the command line.
- Make any other assumption if required

Part-III

7. Develop a web service for Topsis

File Name	Browse File….
Weights	1,1,1,1
Impacts	+,+,-,+
Email Id	psrana@gmail.com
	Submit

- The user should provide input file, weights, impacts and email id.
- The user should get the result file through email.
- Number of weights must be equal to number of impacts
- Impacts must be either +ve or -ve.
- Impacts and weights must be separated by ',' (comma).
- Format of email id must be correct