User Manual

TOPSIS Command Line Tool

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1. Introduction

This program implements the **TOPSIS (Technique for Order Preference by Similarity to Ideal Solution)** method using Python.
It ranks alternatives based on multiple criteria using vector normalization and distance measures.

The tool works through the **command line**.

2. Requirements

- Python 3.6 or above
- pandas
- numpy

3. Installation (from PyPI)

Install the package using:

pip install Topsis-Prigya-102313061

4. Input File Format

The input must be a CSV file.

- First column: Names of alternatives
- Remaining columns: Numeric criteria values

Example Input:

Laptop	Performance	Battery	Weight	Price
A	90	8	1.8	1200
B	85	10	1.5	1500
C	88	7	2.0	1000
D	92	9	1.6	1800

5. Command Line Usage

topsis <InputDataFile> <Weights> <Impacts> <OutputFile>

Example:

topsis test.csv "1,1,1,1" "+,+,-,-" result.csv

6. Meaning of Parameters

- **Weights**: Importance of each criterion
- **Impacts**:

  \+ → Higher value is better

  \- → Lower value is better

7. Output

The output CSV file contains two additional columns:

- Topsis Score
- Rank

Higher score means better alternative.

8. Validations Performed

The program checks:

- Correct number of command line arguments
- Input file existence
- Minimum three columns
- Numeric criteria values
- Matching number of weights, impacts, and criteria
- Impacts must be + or -

9. Author

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