Multi-criteria decision-making

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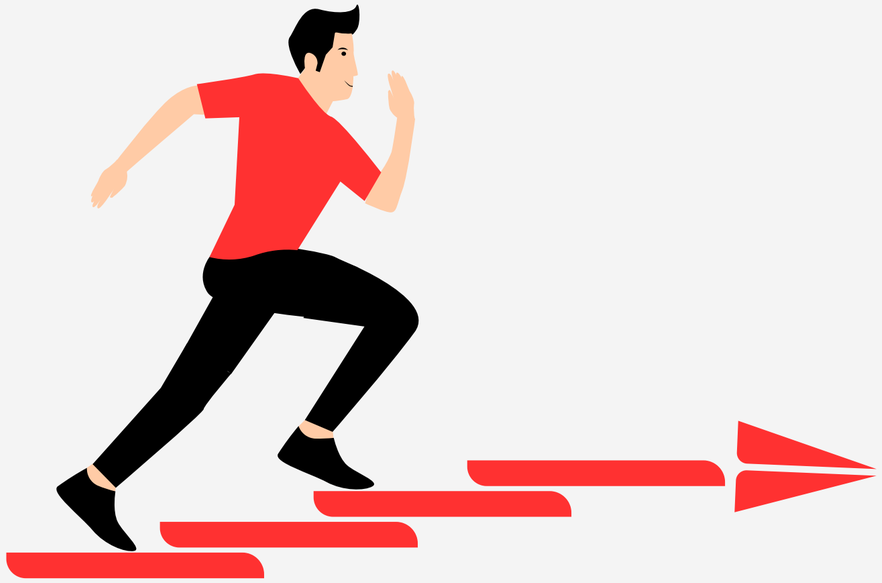

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Introduction

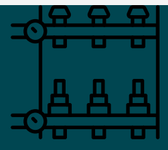
- Multi-criteria decision-making (MCDM) is a process of making decisions based on multiple criteria or objectives
- Python is a popular programming language used for MCDM due to its libraries and tools

Define

- Multi-criteria decision-making (MCDM) is one of the main decision-making problems which aims to determine the best alternative by considering more than one criterion in the selection process. MCDM has manifold tools and methods that can be applied in different fields from finance to engineering design

- In Python, MCDM can be implemented using various libraries, such as NumPy, SciPy, and Pandas

- In Multi-criteria decision-making (MCDM) the first step is to define the criteria or factors that are important for the decision. Then, the data related to these criteria are collected and analyzed.



Example Application - Car Purchase

- Let's consider an example of using MCDM in Python for purchasing a car
- Criteria could include price, fuel efficiency, safety rating, and design
- PyDecision methods such as Analytic Hierarchy Process (AHP) or Technique for Order Preference by Similarity to Ideal Solution (TOPSIS) can be used to rank the cars based on the criteria

Conclusion

- Provides tools for numerical computations and linear algebra
- Can be useful in MCDM applications, such as calculating criteria weights and decision scores


Thank you