Decision-Making Algorithm

A **decision-making algorithm** is a step-by-step logical procedure used to guide choices between different options based on predefined criteria or input data. It is commonly used in clinical practice, computer science, business, and engineering to standardize complex decision processes and improve consistency and outcomes.

Key Characteristics

- Structured sequence of decision points (e.g., if/then branches)
- Based on evidence, rules, or expert consensus
- May include diagnostic thresholds, scoring systems, or outcomes
- Often represented as flowcharts or decision trees
- Can be manual or computerized

Examples

- Medical: Choosing treatment based on clinical scores (e.g., Wells Score for PE)
- IT: Load balancing decisions in server management
- Business: Customer segmentation and response actions

Related Concepts

- decision tree
- clinical pathway
- algorithm
- flowchart

Pulmonary Embolism Decision-Making Algorithm

Step 1: Assess Clinical Suspicion (Wells Score)

- If **Low probability**:
    - → Perform **D-dimer** test
        - If **D-dimer negative**:
            - → Pulmonary embolism ruled out
        - If **D-dimer positive**:
            - → Proceed to **CT Pulmonary Angiography (CTPA)**
- If **Moderate or High probability**:
    - → Go directly to **CT Pulmonary Angiography (CTPA)**
        - If **CTPA positive**:
            - → Diagnose and **treat PE**
        - If **CTPA negative**:
            - → PE ruled out

Notes

- Wells Score Criteria:
    - Clinical signs of DVT: +3
    - PE most likely diagnosis: +3
    - Heart rate >100 bpm: +1.5
    - Immobilization/surgery in past 4 weeks: +1.5
    - Previous DVT/PE: +1.5
    - Hemoptysis: +1
    - Malignancy: +1

- Score Interpretation:
    - <2 → Low probability
    - 2–6 → Moderate probability
    - >6 → High probability