Computational Thinking and Logic-Solving Problems

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Computational Thinking

Computational thinking is a problem-solving method that involves breaking down complex problems into simpler parts and solving them systematically using logical reasoning and algorithms.

Information and Data

Information refers to processed, organized, and structured data that provides meaning. Data is raw, unprocessed facts and figures collected from various sources.

Converting Information into Data

This process involves encoding qualitative or quantitative information into a structured format suitable for storage, processing, and analysis.

Data Capacity

Data capacity refers to the amount of data that can be stored or transmitted within a system. It is measured in bytes (KB, MB, GB, TB).

Data Types and Encoding

Data types include integers, floating points, characters, and Boolean values. Encoding involves representing data in a specific format, such as ASCII or Unicode for text.

Logic-Solving Problems

Logic-solving involves applying logical reasoning to arrive at conclusions. It includes techniques such as deduction, induction, and pattern recognition.

Limits of Computation

Computational limits define problems that are either solvable or unsolvable using algorithms. Some problems require approximations due to constraints like time and memory.

Pseudocode and Flowchart

Pseudocode is a high-level representation of an algorithm using structured human-readable syntax. Flowcharts use graphical symbols to depict processes in an algorithm.