

OCR Computer Science A Level

2.1.1 Thinking Abstractly

Flashcards



What is representational abstraction?



What is representational abstraction?

A technique in which excessive details are removed to arrive at a representation of a problem that consists of only the key features.



Which form of abstraction involves grouping together similarities within a problem to identify what kind of problem it is?



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Abstraction by generalisation



What is meant by data abstraction?



What is meant by data abstraction?

A form of abstraction in which details about how data is being stored are hidden.



What kind of problems make use of multiple levels of abstraction?



What kind of problems make use of multiple levels of abstraction?

Large, complex problems



How does abstraction allow non-experts to make use of a system?



How does abstraction allow non-experts to make use of a system?

Hides complex and irrelevant information in abstract models.



State two advantages of using
abstraction in software development



State two advantages of using abstraction in software development

Two from:

- Easier for programmers to focus on core elements
- Reduces the time needed to be spent on the project.
- Prevents program from getting unnecessarily large.



Give two applications of
layers of abstraction



Give two applications of layers of abstraction

- Networking (TCP/IP layer)
- Programming languages



State two advantages of using abstraction in programming languages



State two advantages of using abstraction in programming languages

- Easier to remember syntax in high-level languages as it is closer to natural language
- Coding becomes accessible to beginners



How does object-oriented programming use abstraction?



How does object-oriented programming use abstraction?

Objects are an abstraction for real-world entities.

Attributes are an abstraction for the characteristics of an object.

Methods are an abstraction for the actions a real-world object is able to perform.



What is the difference between
abstraction and reality?



What is the difference between abstraction and reality?

Abstraction is a simplified representation of reality

