AQA Computer Science GCSE
3.4.4 Classification of Programming Languages and Translators

Flashcards

What is a high-level programming language?

What is a high-level programming language?

A language designed to be easy for humans to read and write (e.g. Python, Java, C#).

What is a low-level language?

What is a low-level language?

A language that is, or is close to, machine code, like assembly language.

Give two advantages of high-level languages.

Give two advantages of high-level languages.

Easier to write, read, and debug.

Programs written are portable between different hardware.

Give two disadvantages of high-level languages.

Give two disadvantages of high-level languages.

Slower to execute than low-level languages.

Must be translated into machine code.

Give two advantages of low-level languages.

Give two advantages of low-level languages.

Faster and more efficient to execute.

Gives more control over hardware.

Give two disadvantages of low-level languages.

Give two disadvantages of low-level languages.

Harder to read, write, and maintain.

Not portable - specific to one type of processor.

Why do programs need translators?

Why do programs need translators?

Because computers can only understand machine code (binary).

What does a compiler do?

What does a compiler do?

Takes a high-level program as their source code, checks it for any errors and then translates the entire program at once.

What does an interpreter do?

What does an interpreter do?

Translate high-level programs into machine code line-by-line.

True or false: interpreters generate machine code directly

True or false: interpreters generate machine code directly

False. They call appropriate machine code subroutines within their own code to carry out statements.

What does an assembler do?

What does an assembler do?

Converts assembly language into machine code - each assembly language instruction has a 1:1 relationship to a machine code instruction.

Which language is often used to develop software for embedded systems and for controlling specific hardware components?

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Assembly language

Which is faster during execution: compiler or interpreter?

Which is faster during execution: compiler or interpreter?

Compiler - after compiling, the program runs quickly.

Can a compiler create a separate machine code file?

Can a compiler create a separate machine code file?

Yes - the code is saved as an executable file and can be run again without recompiling.

Is machine code portable across devices?

Is machine code portable across devices?

No - it only works on the specific processor it was compiled for.