

# Reading Quiz 14

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1. **What two fundamental problems does Petzold mention in regard to creating programs in assembly language?**
  - The first problem is that it can be very tedious.
  - The second problem is that assembly language isn't portable.
2. **What are three advantages that high-level languages provide the programmer?**
  - High-level languages are usually easier to learn and to program in than assembly languages.
  - Programs written in high-level languages are often clearer and more concise.
  - High-level languages are often portable
3. **What is credited as being the "first real working compiler," who created it, and when?**

The first real working compiler is generally considered to be the A-0 for the UNIVAC created by Grace Murray Hopper in 1952.

4. **Name two early, canonical high-level languages and state what their names are derived from.**
  - *FORTRAN* - FORTRAN is a combination of the first three letters of FORMula and the first four letters of TRANslation.
  - *COBOL* - (the COmmon Business Oriented Language)
5. **What is the difference between an interpreter vs. a compiler?**

A compiler reads a source-code file and creates an executable file.

An interpreter, however, reads source code and executes it directly as it's reading it without necessarily creating an executable file.

**6. In the 1970s, what distinguished the design and implementation of the UNIX operating system compared to other OSes?**

UNIX operating system was designed to be portable. Most operating systems at the time were written in assembly language for a specific processor.

**7. What does it mean to be an ALGOL-like language?**

Most commonly used programming languages are considered to be ALGOL-like languages. They are designed based on the Von-Neumann architecture.

**8. In your opinion, is programming an art or a science?**

Programming is arguably both art and science because it can involve use of the scientific method of creating a hypothesis to solve problems, but it doesn't have to. A programmer has the freedom to create in whatever manner they choose within the constraints of the medium, a lot like an artist.