

## Chapter 2: Evolution of the Major Programming Languages

### 1. Which programming language involved history's largest design effort? Why did it lose its popularity?

**Ans:**

The Ada language involved history's largest design effort. It required huge design effort, involving hundreds of people, much money, and about eight years to develop the language.

**It lost its popularity because-**

- The Ada language was developed for the Department of Defense (DoD). But DoD stopped requiring its use in military software systems.
- Increasing the popularity of C++

### 2. What are the differences between Java and C++?

**Ans:**

Java	C++
Developed at Sun Microsystems in the early 1990s	Developed at Bell Labs by Stroustrup in 1980
Java is platform-independent.	C++ is platform-dependent.
Java is mainly used for application programming. It is widely used in Windows-based, web-based and mobile applications.	C++ is mainly used for system programming.
It supports only Object-Oriented programming.	It supports both procedural and Object-Oriented programming.
It is a significantly simplified language	It is a large and complex language
Java doesn't support pointers.	C++ supports pointers.
Java doesn't support the goto statement.	C++ supports the goto statement.

**3. Describe in detail the three most important reasons, in your opinion, why ALGOL 60 did not become a very widely used language.**

**Ans:**

**The three most important reasons in my opinion:**

- Some of the features of ALGOL 60 were too flexible. They made understanding difficult and implementation inefficient.
- ALGOL 60 lacks of input and output statement. It was another major reason for its failure. Implementation-dependent input/output made programs difficult to port to other computers.
- One of the most vital reasons why ALGOL 60 didn't become a very widely used language is because the popularity of Fortran among users and the lack of support by IBM.

**4. Differentiate between the general features of JavaScript and PHP Language.**

**Ans:**

<b>JavaScript</b>	<b>PHP</b>
It is a client-side HTML-embedded scripting language	It is a server-side HTML-embedded scripting language
It is often used to create dynamic HTML documents	It is often used for form processing and database access through the Web
JavaScript is used for Both Front-end and Back-end development.	PHP is used mostly for Back-end development.
JavaScript code is less secure.	PHP code is highly secure.
It is faster but difficult to learn.	It is slower but easy to learn.
It is supportable by every web browser,	It is supportable on Windows, Linux, Mac, etc. platforms.
It supports fewer features.	It supports more features.

**5. Explain two reasons why pure interpretation is an acceptable implementation method for several recent scripting languages.**

**Ans:**

- Pure interpretation is an acceptable implementation method for several scripting language because it requires less coding (amount of computation is small) and better readability. Since the program does not need to be compiled, the program can be rerun without restarting its application.
- Pure interpretation does not require a translation and an easier way to find errors because errors are immediately displayed.

## **6. Why was BASIC an important language in the early 1980s?**

**Ans:** BASIC was an important language in the early 1980s because-

- It was easy for beginners to learn, especially those who were not science background.
- its smaller dialects can be implemented on computers with very small memories.

## **7. What is the primary reason why PL/I became more widely used than ALGOL 68?**

**Ans:**

- PL/I became more widely used than ALGOL 68 because of IBM's promotional efforts and the problems of understanding and implementing ALGOL 68.
- Implementation was a difficult problem for both, but PL/I had the resources of IBM to apply to build a compiler. ALGOL 68 had no such facility.