

BCA – 401: Java Programming

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What is Java:-

Java is a high level, robust, object-oriented and secure programming language.

Java was developed by Sun Microsystems (which is now the subsidiary of Oracle) in the year 1995. James Gosling is known as the father of Java. Before Java, its name was Oak. Since Oak was already a registered company, so James Gosling and his team changed the name from Oak to Java.

History of Java:-

The history of Java is very interesting. Java was originally designed for interactive television, but it was too advanced technology for the digital cable television industry at the time. The history of Java starts with the **Green Team**. Java team members (also known as **Green Team**), initiated this project to develop a language for digital devices such as set-top boxes, televisions, etc. However, it was best suited for internet programming. Later, Java technology was incorporated by Netscape.

The principles for creating Java programming were "**Simple, Robust, Portable, Platform-independent, Secured, High Performance, Multithreaded, Architecture Neutral, Object-Oriented, Interpreted, and Dynamic**". Java was developed by **James Gosling**, who is known as the father of Java, in

1995. James Gosling and his team members started the project in the early '90s.

Currently, Java is used in internet programming, mobile devices, games, e-business solutions, etc.

Following are given significant points that describe the history of Java.

James Gosling, Mike Sheridan, and Patrick Naughton initiated the Java language project in June 1991. The small team of sun engineers called **Green Team**.

Initially it was designed for small, **embedded systems** in electronic appliances like set-top boxes.

Firstly, it was called "**Greentalk**" by James Gosling, and the file extension was .gt.

After that, it was called **Oak** and was developed as a part of the Green project.

Why Java was named as "Oak"?

Oak is a symbol of strength and chosen as a national tree of many countries like the U.S.A., France, Germany, Romania, etc.

In 1995, Oak was renamed as "Java" because it was already a trademark by Oak Technologies.

Why Java Programming named "Java"?

The team gathered to choose a new name. The suggested words were "**dynamic**", "**revolutionary**", "**Silk**", "**jolt**", "**DNA**",

etc. They wanted something that reflected the essence of the technology: revolutionary, dynamic, lively, cool, unique, and easy to spell, and fun to say.

According to James Gosling, "**Java** was one of the top choices along with **Silk**". Since Java was so unique, most of the team members preferred Java than other names.

Java is an island in Indonesia where the first coffee was produced (called Java coffee). It is a kind of espresso bean. Java name was chosen by James Gosling while having a cup of coffee nearby his office.

Notice that Java is just a name, not an acronym.

Initially developed by James Gosling at Sun Microsystems (which is now a subsidiary of Oracle Corporation) and released in 1995.

In 1995, Time magazine called Java one of the Ten Best Products of 1995.

JDK 1.0 was released on January 23, 1996. After the first release of Java, there have been many additional features added to the language. Now Java is being used in Windows applications, Web applications, enterprise applications, mobile applications, cards, etc. Each new version adds new features in Java.

Java Version History:-

Many java versions have been released till now. The current stable release of Java is **Java SE 20**.

JDK Alpha and Beta (1995)

JDK 1.0 (23rd Jan 1996)

JDK 1.1 (19th Feb 1997)

J2SE 1.2 (8th Dec 1998)

J2SE 1.3 (8th May 2000)

J2SE 1.4 (6th Feb 2002)

J2SE 5.0 (30th Sep 2004)

Java SE 6 (11th Dec 2006)

Java SE 7 (28th July 2011)

Java SE 8 (18th Mar 2014)

Java SE 9 (21st Sep 2017)

Java SE 10 (20th Mar 2018)

Java SE 11 (25th September 2018)

Java SE 12 (19th March 2019)

Java SE 13 (17th September 2019)

Java SE 14 (17th Mar 2020)

Java SE 15 (15th September 2020)

Java SE 16 (16th Mar 2021)

Java SE 17 (14th September 2021)

Java SE 18 (14th March 2022)

Java SE 19 (20th September 2022)

Java SE 20 (21st March 2023)

Since Java SE 8 release, the Oracle corporation follows a pattern in which every even version is release in March month and an odd version released in September month.

Applications of Java:-

According to Sun, 3 billion devices run Java. There are many devices where Java is currently used. Some of them are as follows:

1. Desktop Applications such as acrobat reader, media player, antivirus, etc.
2. Web Applications such as irctc.co.in, javatpoint.com, etc.
3. Enterprise Applications such as banking applications.
4. Mobile
5. Embedded System
6. Smart Card
7. Robotics
8. Games, etc.

Types of Java Applications:-

There are mainly 4 types of applications that can be created using Java programming:

1) Standalone Application

Standalone applications are also known as desktop applications or window-based applications. These are traditional software that we need to install on every machine. Examples of standalone application are Media player, antivirus, etc. AWT and Swing are used in Java for creating standalone applications.

2) Web Application

An application that runs on the server side and creates a dynamic page is called a web application. Currently, Servlet, JSP, Struts, Spring, Hibernate, JSF, etc. technologies are used for creating web applications in Java.

3) Enterprise Application

An application that is distributed in nature, such as banking applications, etc. is called an enterprise application. It has advantages like high-level security, load balancing, and clustering. In Java, EJB is used for creating enterprise applications.

4) Mobile Application

An application which is created for mobile devices is called a mobile application. Currently, Android and Java ME are used for creating mobile applications.