**History of Java**

The history of Java starts from **Green Team**. Java team members (also known as **Green Team**), initiated a revolutionary task to develop a language for digital devices such as set-top boxes, televisions etc. This project was called **Stealth project** but later its name was changed to **Green project.**

For the green team members, it was an advance concept at that time. But, it was suited for internet programming. Later, Java technology as incorporated by **Netscape**.

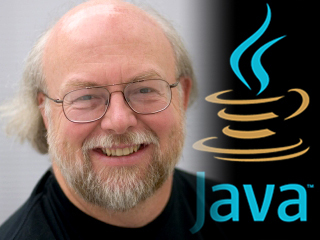
[](http://img.c4learn.com/2012/03/James-Gosling-Father-and-Creator-of-Java-Programming-Language.jpg)

Fig. [**James Gosling**](http://en.wikipedia.org/wiki/James_Gosling)

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

**Major points that describes 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**.
* Originally designed for small, embedded systems in electronic appliances like set-top boxes.
* Earlier Gosling thought C and C++ could be used to develop the project. But the problem he faced with them is that they were system dependent languages and hence could not be used on various processors, which the electronic devices might use. So he started developing a new language, which was completely system independent.
* Firstly, it was called as **"Greentalk"** by James Gosling and file extension was .gt.
* After that, it was called **Oak** and was developed as a part of the Green project.



* **Why Oak?**   
  Oak is a symbol of strength and chosen as a national tree of many countries like U.S.A., France, Germany, Romania etc.
* Oak was first slated to appear in television set-top boxes designed to provide video-on-demand services. Just as the deals with the set-top box manufacturers were falling through, the World Wide Web was coming to life. As Oak’s developers began to recognize this trend, their focus shifted to the Internet and Web Runner, an Oak-enabled browser, was born. Oak’s name was changed to Java and Web Runner became the **HotJava web browser**.
* In 1995, Oak was renamed as **"Java"** because it was already a trademark by Oak Technologies.
* **Why they choose Java name for Java language?**

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.

The symbol for Java language is **Coffee Cup and Saucer**.

**Java is an island of Indonesia** where first coffee was produced (called Java coffee).

* Notice that Java is just a name not an acronym.
* Originally 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 released (in January 23, 1996).

**Note:** Basic aim of Java was to solve the problem of **connecting many household machines** together. Project was **unsuccessful because no one wanted to use it**.

**JAVA STEP BY STEP :**

**January 15, 1991**   
 "Stealth Project" (as named by Scott McNealy) brainstorming meeting in Aspen with Bill Joy, Andy Bechtolsheim, Wayne Rosing, Mike Sheridan, James Gosling and Patrick Naughton.

**February 1, 1991**   
 Gosling, Sheridan, and Naughton begin work in earnest. Naughton focuses on "Aspen" graphics system, Gosling on programming language ideas, Sheridan on business development.

J**une 1991**   
 Gosling starts working on the "Oak" interpreter, which, several years later (following a trademark search), is renamed "Java."

**August 19, 1991**   
 Green team demonstrates basic user interface ideas and graphics system to Sun co-founders Scott McNealy and Bill Joy.

**Summer 1992**   
 Massive amounts of hacking on Oak, and related components.

**October 1, 1992**   
 Wayne Rosing joins from SunLabs (which had formed in July 1990) and assumes management of the team.

**March 15, 1993**   
 Development team, now incorporated as FirstPerson, focuses on interactive television after learning about Time Warner's RFP for its interactive cable TV trial in Orlando, FL.

**April, 1993**   
 NCSA Mosaic 1.0, the first graphical browser for the Internet, is released.

**June 14, 1993** Time Warner goes with SGI for its interactive cable TV trial, despite acknowledged superiority of Sun technology and assurances in mid-April that Sun won the deal.

**Summer, 1993** Naughton flies 300,000 miles selling Oak to anyone involved in consumer electronics and interactive television; meanwhile, the rate at which people are gaining access to the Internet reaches breakneck speed.

**August, 1993** After months of promising negotiations with 3DO to provide set-top box OS, 3DO president Trip Hawkins offers to buy the technology outright. McNealy refuses, and deal falls through.

**September, 1993** Arthur Van Hoff joins team, originally to do application development environment aimed at interactive television; ends up doing mostly language design.

**February 17, 1994**   
 Alternative FirstPerson business plan for doing CD-ROM/online multimedia platform based on Oak presented to Sun executives to very mixed reviews.

**April 25, 1994**   
 Sun Interactive created, half of FirstPerson employees leave to join it.

**June, 1994**   
 "Liveoak" project started. Designed by Bill Joy to use Oak for a big small operating system project.

**July, 1994**   
 Naughton reduces the "Liveoak" project's scope to simply retargeting Oak at the Internet after writing a throwaway implementation of a Web browser in a long weekend hack.

**September 16, 1994**   
 Jonathon Payne and Naughton start writing "WebRunner," a Mosaic-like browser later renamed "HotJava"

**September 29, 1994**   
 HotJava prototype is first demonstrated to Sun executives.

**Autumn, 1994**   
 Van Hoff implements Java compiler *in* Java. (Gosling had previously implemented it in C.)

**May 23, 1995**   
 Sun formally announces Java and HotJava at SunWorld '95.

**May 23, 1995** Netscape announces its intention to license Java for use in Netscape browser.

**September 21, 1995** Sun-sponsored Java development conference held in New York City.

**September 25, 1995**   
 Sun announces expanded alliance with Toshiba and a joint project to develop remote information retrieval products which incorporate Java.

**September 26, 1995**   
 Sunsoft announces suite of business-oriented development products incorporating Java.

**October 30, 1995**   
 Oracle announces its WebSystem suite of WWW software which includes a Java-compatible browser.

**October 30, 1995**   
 At the Internet World Conference in Boston, Lotus Development Corp., Intuit Inc., Borland International Inc., Macromedia Inc., and Spyglass Inc. announce plans to license Java.

**December 4, 1995**   
 Sun and Netscape announce Javascript, a scripting language based on the Java language which is designed to be accessible to non-programmers.

**December 4, 1995** Sun, Netscape and Silicon Graphics announce new software alliance to develop Internet interactivity tools.

**December 4, 1995**   
 Borland, Mitsubishi Electronics, Sybase and Symatec annouce plans to license Java.

**December 6, 1995**   
 IBM and Adobe announce licensing agreement with Sun for use of Java.

**December 7, 1995** Microsoft announces plans to license Java during announcement of suite of new Internet products, including Visual Basic Script.   
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| WHO WAS WHO |
| **This are the people who belong to the Green Team , listed alphabetically:**  **Lisa Friendly** – FirstPerson employee, original member of the Java Products Group  **John Gage** -- Director of the Science Office, Sun Microsystems  **James Gosling** -- Green Team original, FirstPerson employee, original member Java Products Group, lead engineer and key architect of Java technology  **Bill Joy** -- Cofounder and vice president, Sun Microsystems, Inc., principal designer of the University of California, Berkeley, version of the UNIX® operating system  **Jonni Kanerva** -- Original Java Products Group employee, author of The Java FAQ  **Tim Lindholm** -- FirstPerson employee, original member Java Products Group  **Scott McNealy** -- chairman, president, and CEO of Sun Microsystems  **Patrick Naughton** -- Green Team member, FirstPerson cofounder  **George Paolini** -- Director of corporate marketing, Sun's Java Software Division  **Kim Polese** -- FirstPerson product marketing/P>  **Lisa Poulson** -- Original director of public relations for Java technology (Burson-Marsteller)  **Wayne Rosing** -- FirstPerson president  **Eric Schmidt** -- Former Sun Microsystems chief technical officer  **Mike Sheridan** -- Green Team member | |

### Summary

| **Designed By** | **Sun Microsystems** |
| --- | --- |
| **Designed In** | early 1990s |
| **Basic Aim** | For Communicating Between Household things |
| **Earlier Name of Java** | OAK |
| **Creator of Java** | James Gosling |
| **First Public Release** | 27 May 1995 |
| **Java was targeted at** | Internet Development |
| **Type of Software** | Open Source Software |

## Language was created with 5 main goals:

1. It should be object oriented
2. A single representation of a program could be executed on multiple operating systems
3. It should fully support network programming
4. It should execute code from remote sources securely
5. It should be easy to use

**Java:**

Java is a high-level programming language originally developed by **Sun Microsystems** and released in **1995**. Java runs on a variety of platforms such as windows, Macintosh, Solaris and the several of UNIX, LINUX etc.

Java Language is used for developing platform independent applications. If Java app is developed in one OS, then the app can run on any other OS.

A Java program is normal test file, saved with the extension of .Java, and is compiled by the Java compiler to create a .class file (A byte code file which contains, byte code instructions or machine language for the JVM) and is interpreted by JVM (Java Virtual Machine) to generate the OS understandable code or the native code of the machine. As a result of this, a Java application developed in one OS will run in any other OS which has in-built appropriate JVM.

Native Code

MyApp.class

MyApp.java

**The software Java is available in the industry in three categories. They are:**

1. J2SE (Java 2 Standard Edition),
2. J2EE (Java 2 Enterprise Edition) and
3. J2ME (Java 2 Micro/Mobile Edition).

**J2SE:**

It is used by the industry for development of **client side** applications.

**J2EE:**

It is used for developing **server side** applications. To exchange the data between J2SE and J2EE applications, we use protocol called http,

**J2ME:**

It is used for developing **mobile/wireless applications** by using a protocol called WAP. (Wireless Access /Application Protocol ).

**Note:** As of today, J2SE must be taken as JE, similarly J2EE as JEE and J2ME as JME.

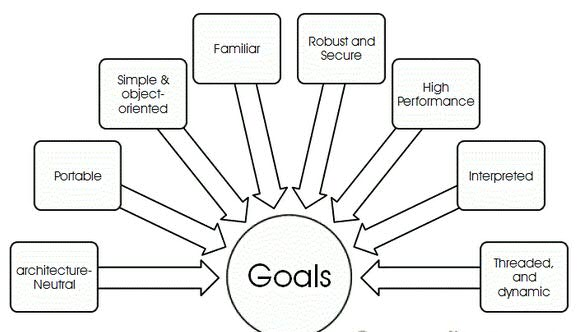
## What is Java?

Java is widely used programming language which has wide verity of applications such as desktop applications, Mobile Applications, Enterprise applications etc.  
Java is a –

1. Class Based and Object Oriented Programming Language
2. Computing platform
3. Fast, Secure, and Reliable.
4. Free
5. General Purpose
6. Concurrent

## Five primary goals in the creation of the Java language :

1. It should be “simple, object-oriented and familiar”.
2. It should be “robust and secure”.
3. It should be “architecture-neutral and portable”.
4. It should execute with “high performance”.
5. It should be “interpreted, threaded, and dynamic”.



## Java’s Contribution to the Internet (World Wide Web):

1. Great feature of the Java is that **Java is platform independent**.
2. It can work on **any network, any operating system,** thus making programs more flexible.
3. In addition to **simplifying web programming in general**, Java innovated a new type of networked program called the **applet** that changed the way the online world thought about content.
4. Portability and Security of Java makes **World Wide Web to spread across globe**.

## Java Applets :

1. An applet is a special kind of Java program that is designed to be transmitted over the Internet and automatically executed by a **Java-compatible web browser**.
2. Applet can be **downloaded on demand**.
3. Applet programs can be **run on ant Java compatible browser**.
4. Applets are intended to be small programs.
5. They are typically used to display data provided by the server, handle user input, or provide simple functions, such as a loan calculator, that execute locally, rather than on the server.
6. In essence, the applet allows some **functionality to be moved from the server to the client**.

## Security :

1. Applets can be **downloaded to user PC** .
2. They are executed **independently without accessing other parts of user’s PC**.
3. The ability of Java provides security and thus Java prove itself more secure.

## Portability :

1. Java Programming is Portable.
2. Java Program is **Operating System Independent**.
3. Java Program is converted into **byte code and byte code is executed by JVM** Java Applets are thus portable and can be downloaded from any place in globe and can be executed on Java compatible browser thus making Java programs portable.

## Java is considered as Portable because –

Java is considered as Platform independent because of many different reasons which are listed below –

1. Output of a Java compiler is **Non Executable Code i.e Bytecode**.
2. Bytecode is a **highly optimized set of instructions**
3. Bytecode is executed by Java run-time system, which is called the Java Virtual Machine (**JVM**).  
     
   **Note:** As the output of Java Compiler is Non-Executable Code, we can consider it as Secure (it cannot be used for automated execution of malicious programs).
4. **JVM is an interpreter.**
5. JVM accepts **Bytecode as input and execute it**.
6. Translating a Java program into bytecode makes it much easier to run a program in a wide variety of environments because only **the JVM needs to be implemented for each platform**.
7. For a given System we have Run-time package, once **JVM is installed for particular system** then any Java program can run on it.
8. However internal details of JVM **will differ from platform to platform** but still all understand the **Same Java Bytecode**.

## Why Java Code is Safe ?

1. Java program is **executed by the JVM**.
2. The JVM **prevent** Java code from **generating side effects outside** of the system.
3. Safety is also enhanced by certain restrictions that exist in the Java language.

## Interpreter are slower than Compiler

Java Code is executed by JVM (interpreter).Other programming language uses compiler which can create executable code much faster then why we are using Interpreter.

1. When a program is interpreted, it generally runs slower than the same program would run if compiled to executable code.
2. In Java Compiler will generate **Bytecode which is highly optimized**.
3. Thus running highly optimized code using interpreter makes execution of **Java program faster**.

