



VIETNAM NATIONAL UNIVERSITY – HO CHI MINH CITY  
**UNIVERSITY OF INFORMATION TECHNOLOGY**

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## Chapter 1

# Introduction to Java

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# What is Java?

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- ❖ **History**
- ❖ **Characteristics of Java**

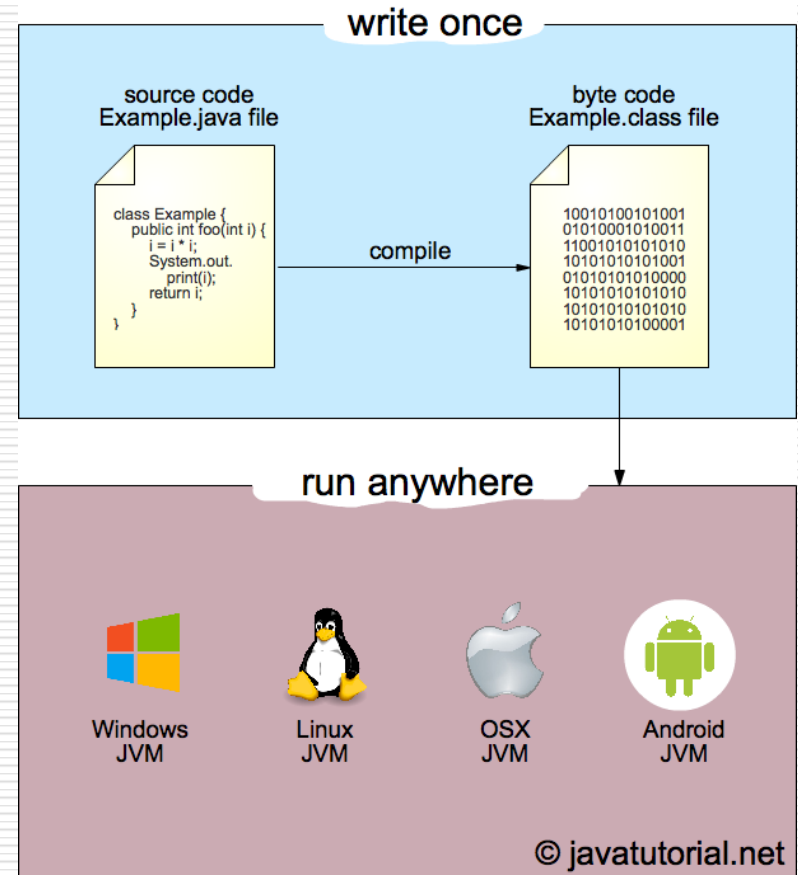
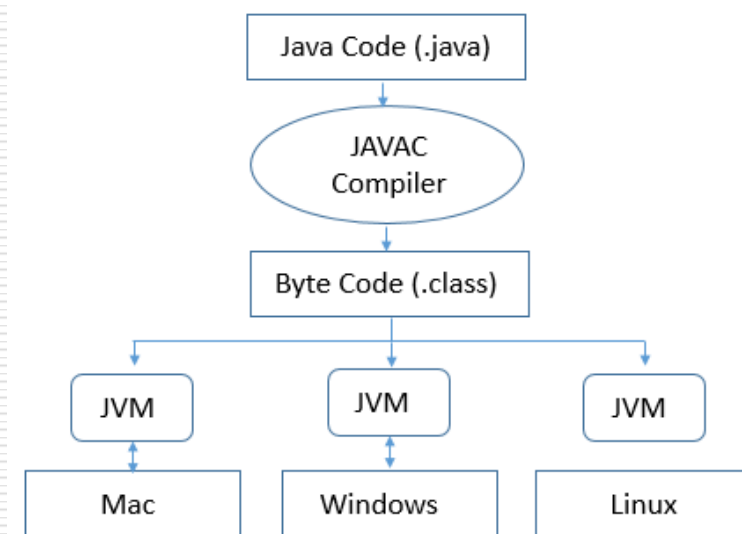
# History

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- ❖ **1991: James Gosling and Sun Microsystem**
- ❖ **Oak**
- ❖ **1995: Java**
- ❖ **JDK Evolutions: 1.0 (23/01/1996) → 15.0.2**  
**([19 January 2021](#))**
- ❖ **Java Technologies: J2SE, J2ME, J2EE,**

# Characteristics of Java

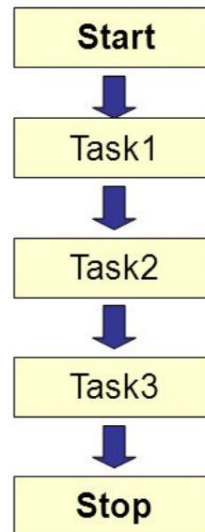
- ❖ Write one, run anywhere.
- ❖ OOP
- ❖ Run by JVM



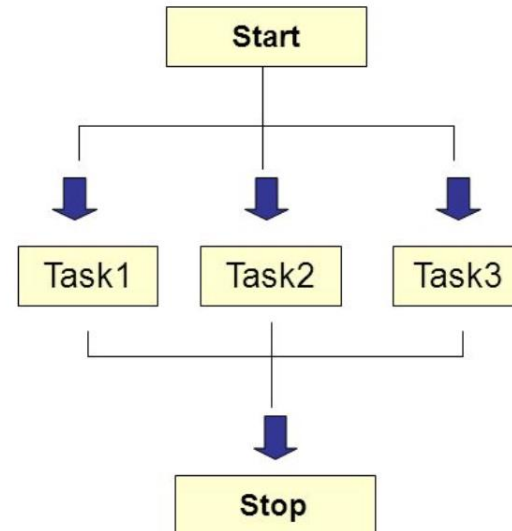
# Characteristics of Java (Cont.)

- ❖ **Multithreaded**
- ❖ **Remove multiple inheritance**

A typical program



Multi-Thread



# Java Technologies

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## ❖ **Java Standard Edition (J2SE)**

- J2SE can be used to develop client-side standalone applications or applets.
- OOP, Swing, JDBC, ...

## ❖ **Java Enterprise Edition (J2EE)**

- J2EE can be used to develop server-side applications such as Java servlets and Java ServerPages.
- Servlet, JSP, ...

## ❖ **Java Micro Edition (J2ME)**

- J2ME can be used to develop applications for mobile devices such as cell phones.

# Programming Languages Ranking

❖ **Theo TIOBE:** the popularity of programming languages.

Feb 2019	Feb 2018	Change	Programming Language	Ratings	Change
1	1		Java	15.876%	+0.89%
2	2		C	12.424%	+0.57%
3	4	⬆	Python	7.574%	+2.41%
4	3	⬇	C++	7.444%	+1.72%
5	6	⬆	Visual Basic .NET	7.095%	+3.02%
6	8	⬆	JavaScript	2.848%	-0.32%
7	5	⬇	C#	2.846%	-1.61%
8	7	⬇	PHP	2.271%	-1.15%
9	11	⬆	SQL	1.900%	-0.46%
10	20	⬆	Objective-C	1.447%	+0.32%

# Programming Language Ranking (Cont.)

## □ PYPL PopularitY of Programming Language

Analyzing how often  
language tutorials are  
searched on Google

Rank	Change	Language	Share	Trend
1	↑	Python	26.42 %	+5.2 %
2	↓	Java	21.2 %	-1.3 %
3	↑	Javascript	8.21 %	-0.3 %
4	↑	C#	7.57 %	-0.5 %
5	↓↓	PHP	7.34 %	-1.2 %
6		C/C++	6.23 %	-0.3 %
7		R	4.13 %	-0.1 %
8		Objective-C	3.04 %	-0.8 %
9		Swift	2.56 %	-0.6 %
10		Matlab	1.98 %	-0.4 %



# Getting Started with Java Programming

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- ❖ A Simple Java Application
- ❖ Compiling Programs
- ❖ Executing Applications

# A Simple Application

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## ❖ Example 1.1

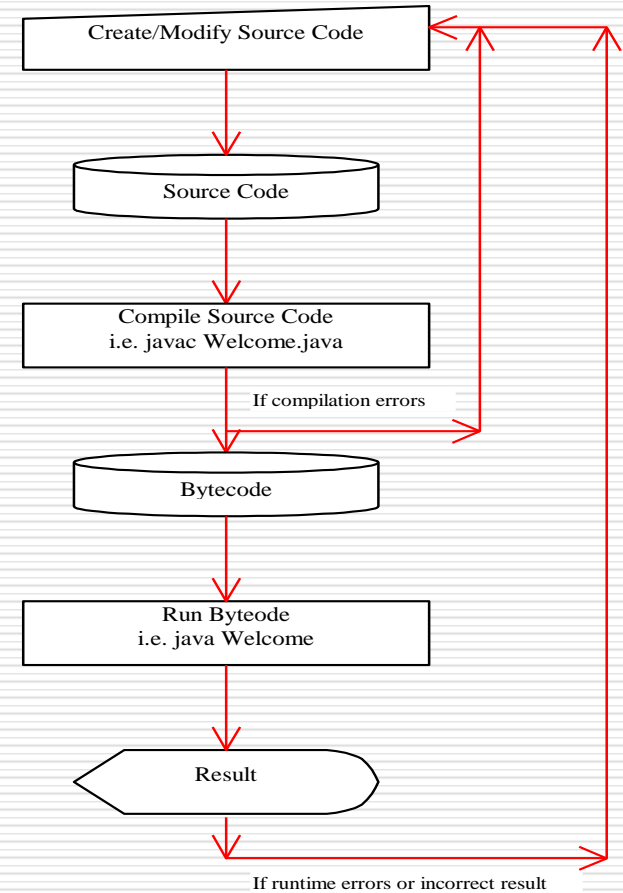
```
//This application program prints Hello  
World!
```

```
public class Welcome {  
    public static void main(String[] args) {  
        System.out.println("Hello World!");  
    }  
}
```

# Creating and Compiling Programs

❖ On command line

**javac file.java**

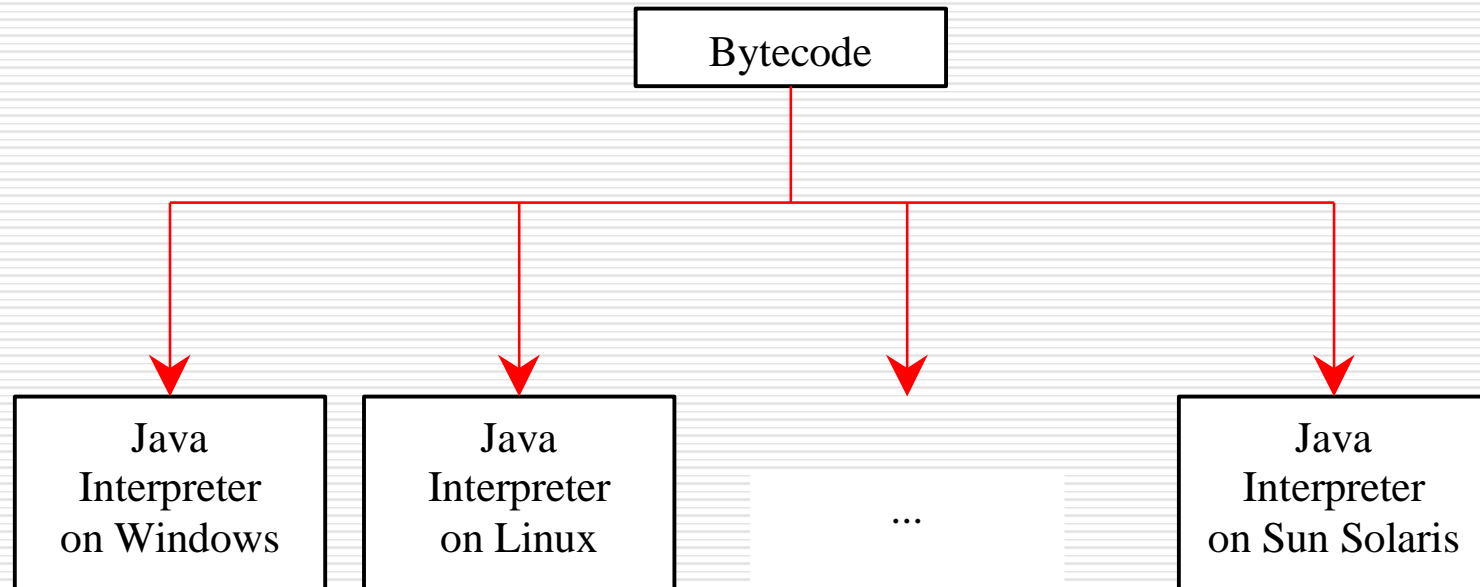


# Executing Applications

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❖ On command line

**java classname**



# Example

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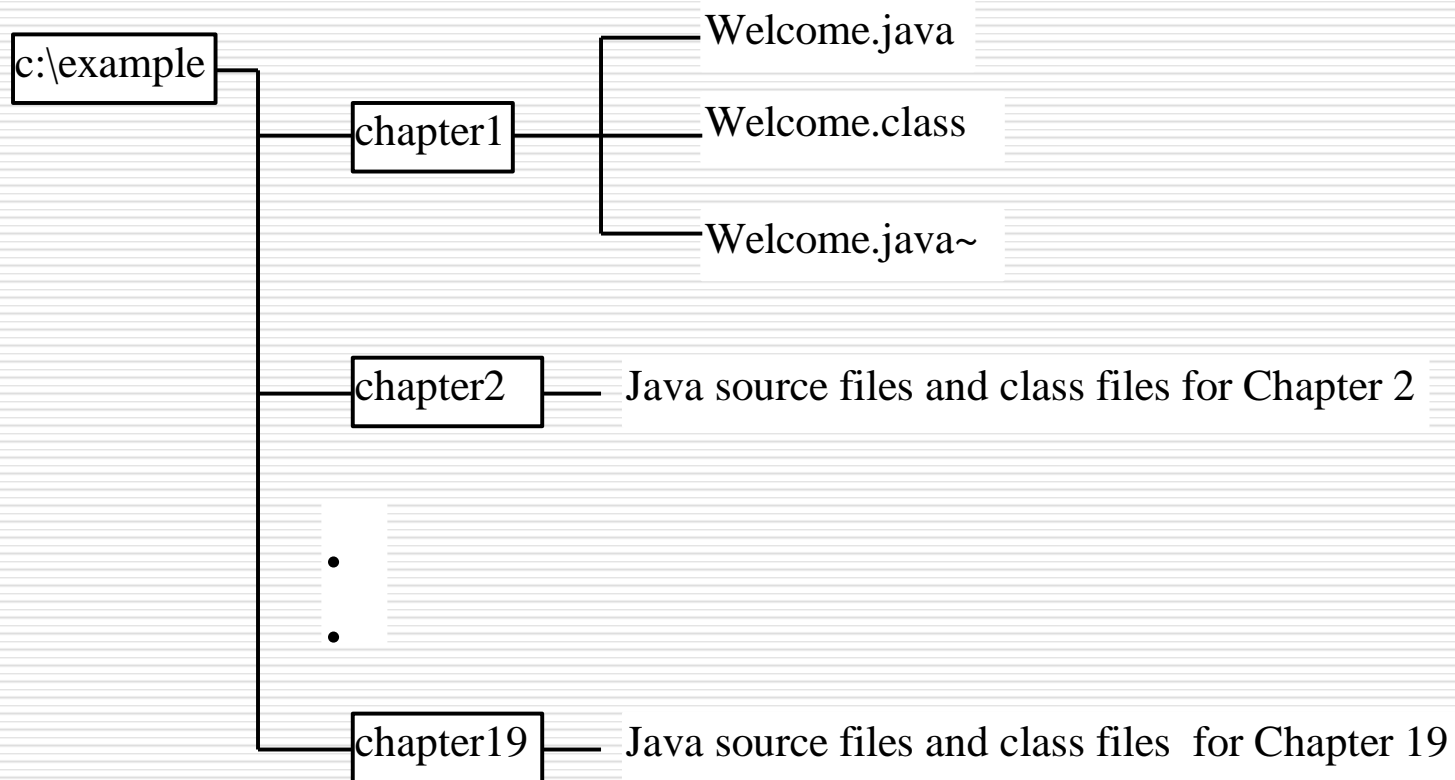
```
javac Welcome.java
```

```
java Welcome
```

```
output:...
```

# Compiling and Running a Program

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# Q&A

**Thank you!**