

# **Session 01**

# **Introduction to JAVA**

**Trinh Thi Van Anh – PTIT**

# What is Java?

An island

- Largest island of the equatorial archipelago of Indonesia
- Famous for beaches and coffee

A language

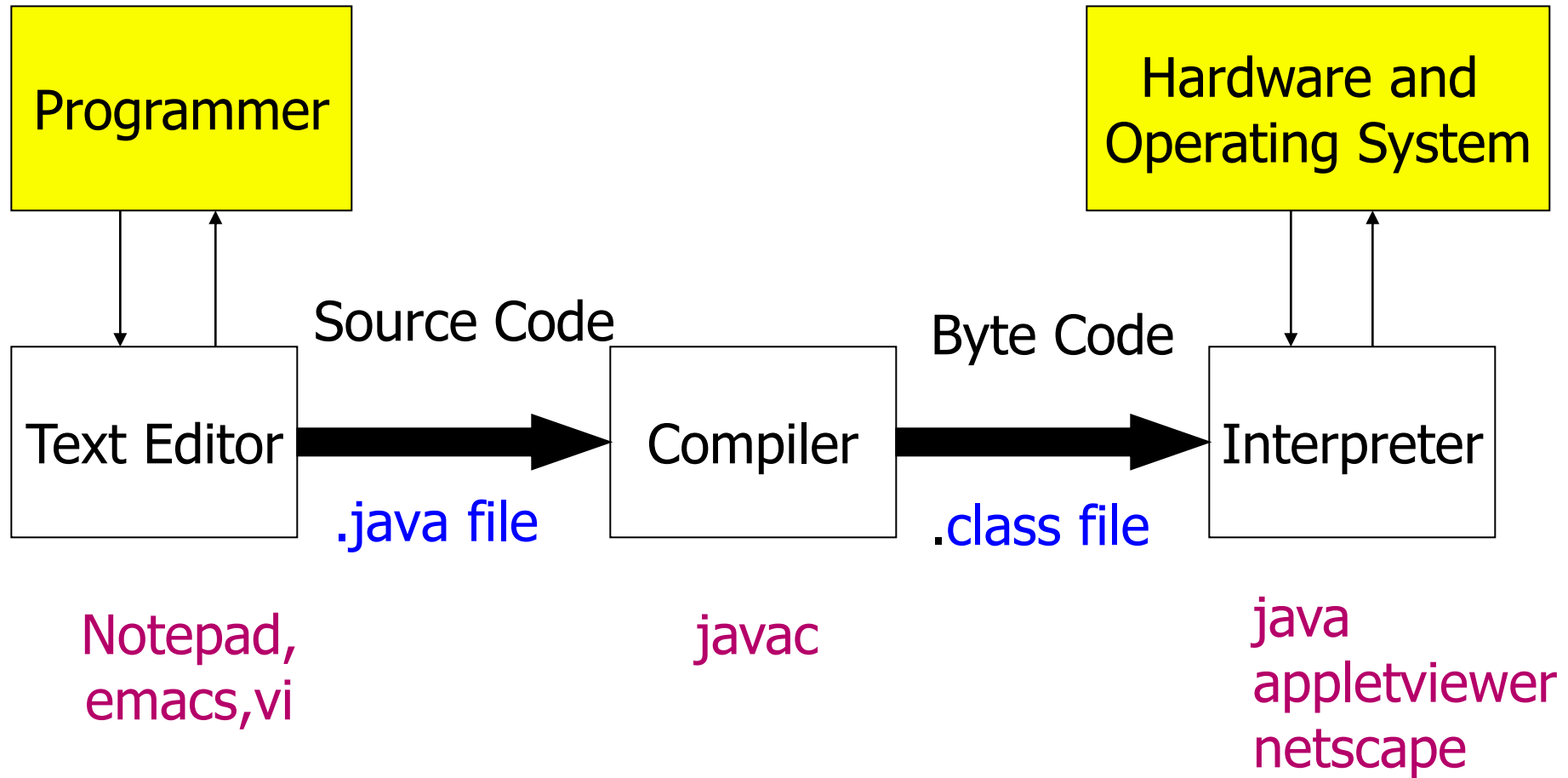
- Developed by Sun
- Open specification



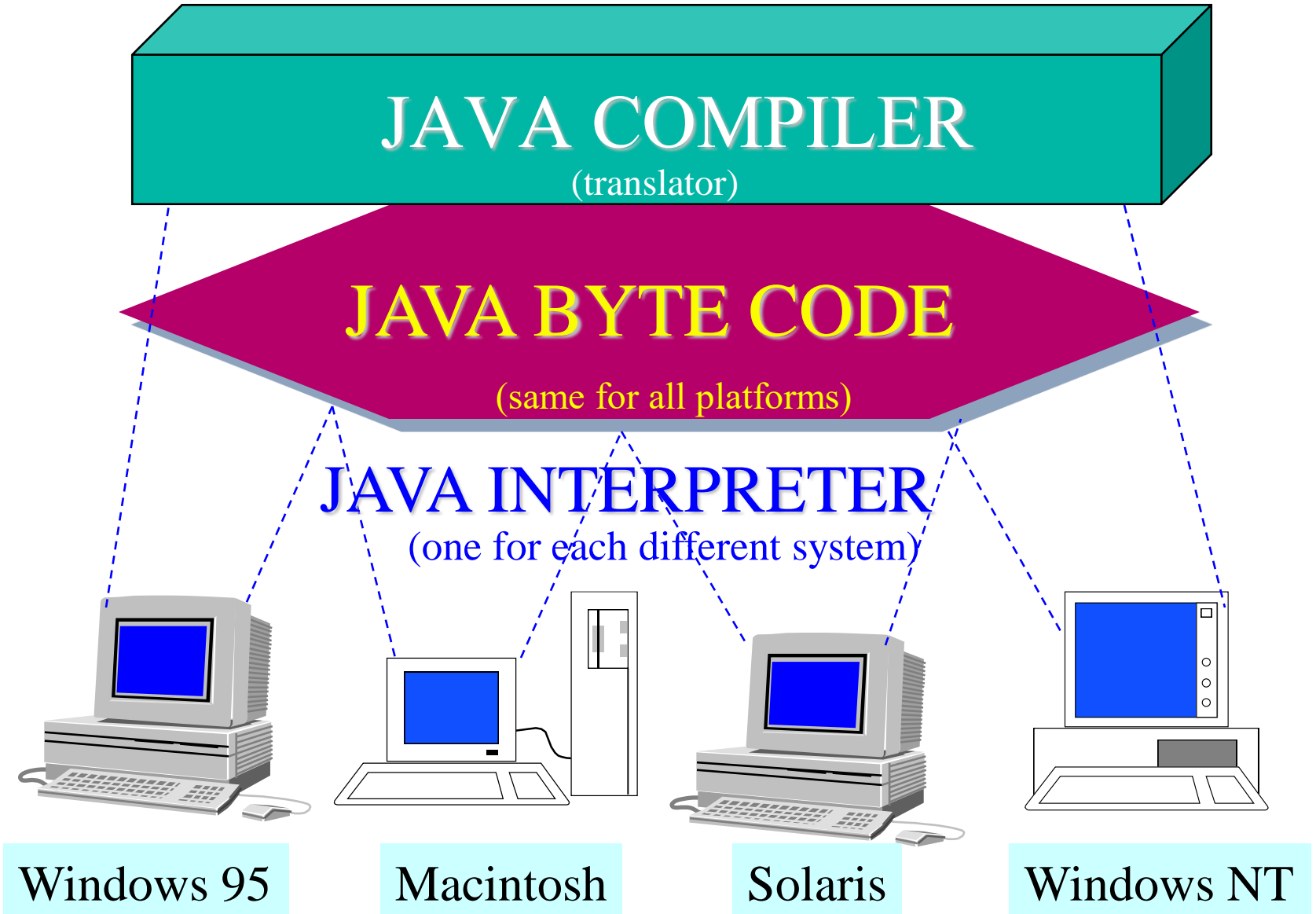
# The History of Java Technology

- Java - The new programming language developed by Sun Microsystems in 1991.
- Originally called Oak by James Gosling, one of the inventors of the Java Language.
- Java Authors: James Gosling, Arthur Van , and others
- Originally created for consumer electronics (TV, VCR, Freeze, Washing Machine, Mobile Phone).
- Java - CPU Independent language

# Java is Compiled and Interpreted



# Total Platform Independence



# Rich Class Environment

- Core Classes

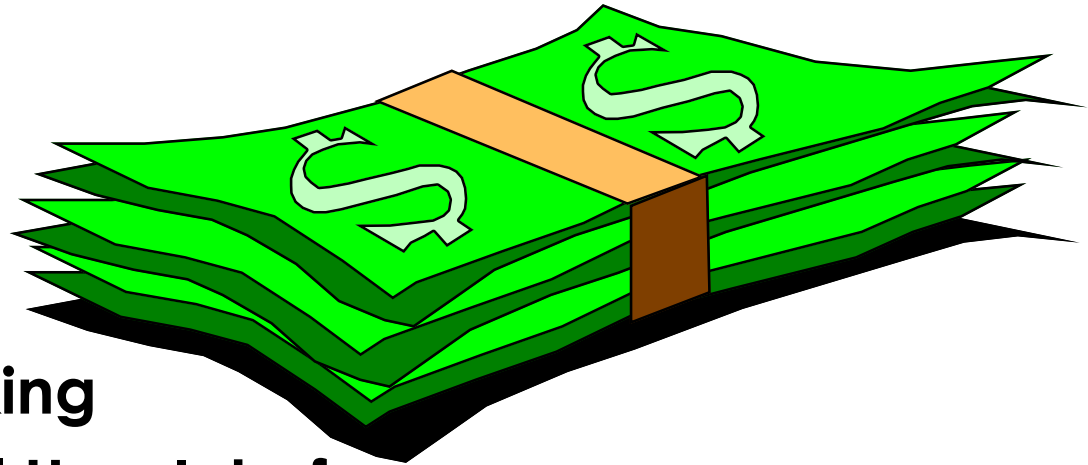
language

Utilities

Input/Output

Low-Level Networking

Abstract Graphical User Interface



- Internet Classes

TCP/IP Networking

WWW and HTML

Distributed Programs

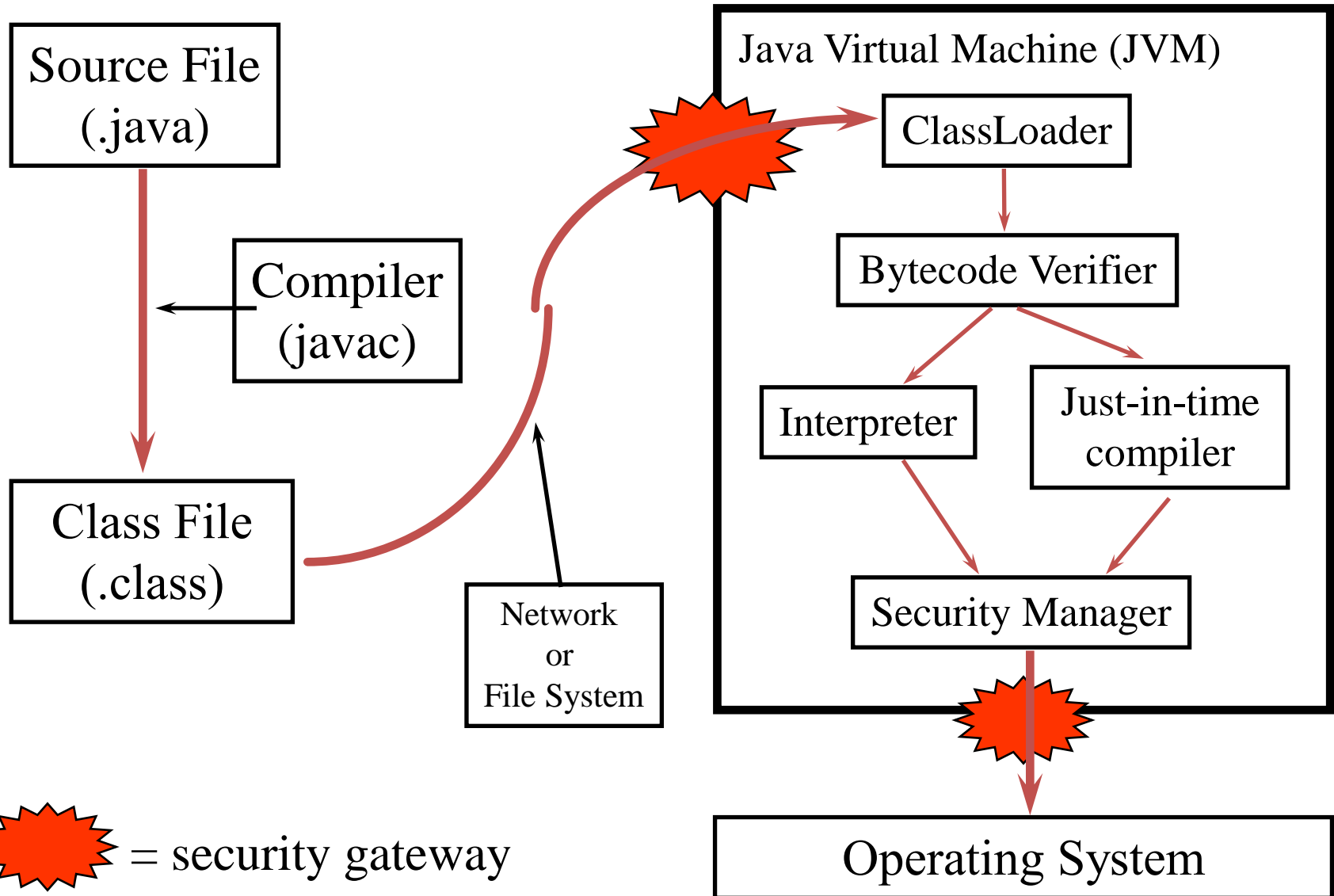
# Java Applications

- We can develop two types of Java programs:
  - Stand-alone applications

**Application**- A stand-alone program that can be invoked from command line . A program that has a “main” method
  - Web applications (applets)

**Applet**- A program embedded in a web page , to be run when the page is browsed . A program that contains no “main” method
- **Application** –Executed by the Java interpreter.
- **Applet**- Java enabled web browser.

# Java Class Lifecycle





# **Let us Try Out**

## Building your first Java Program

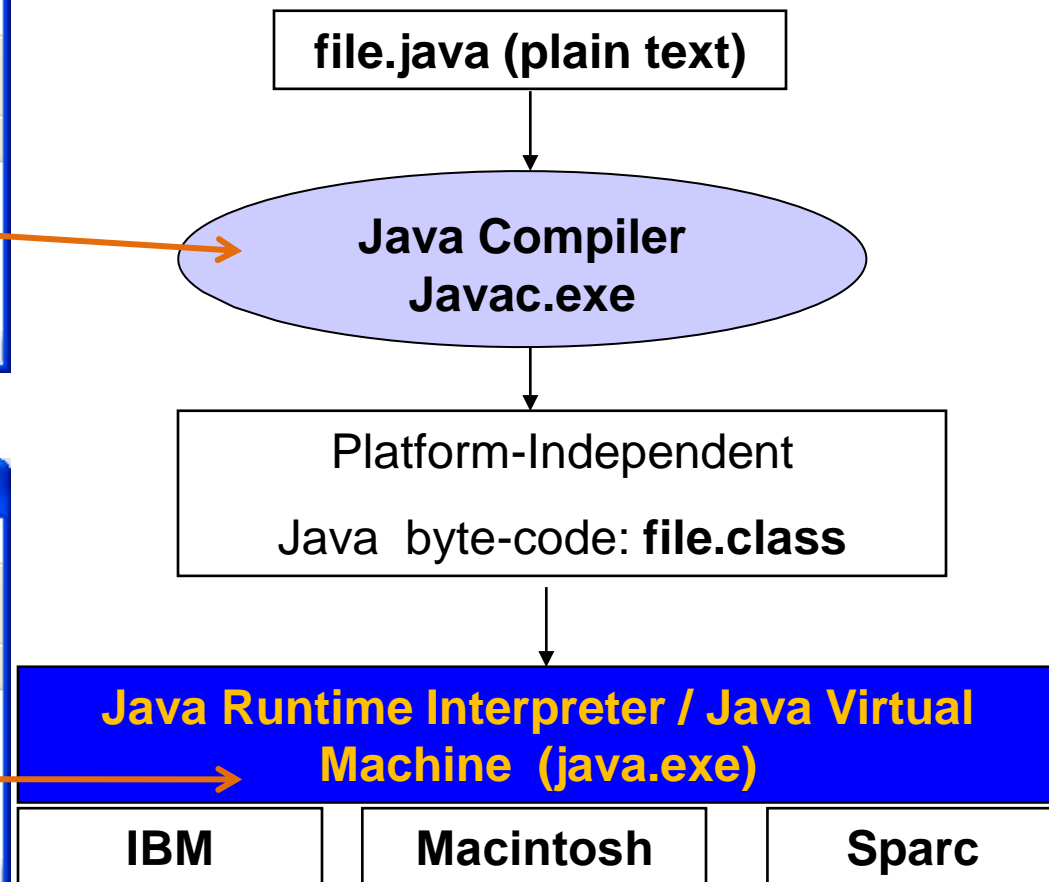
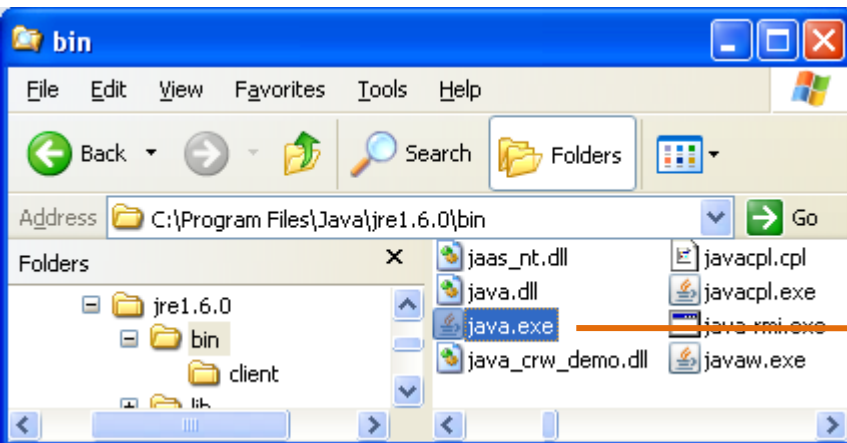
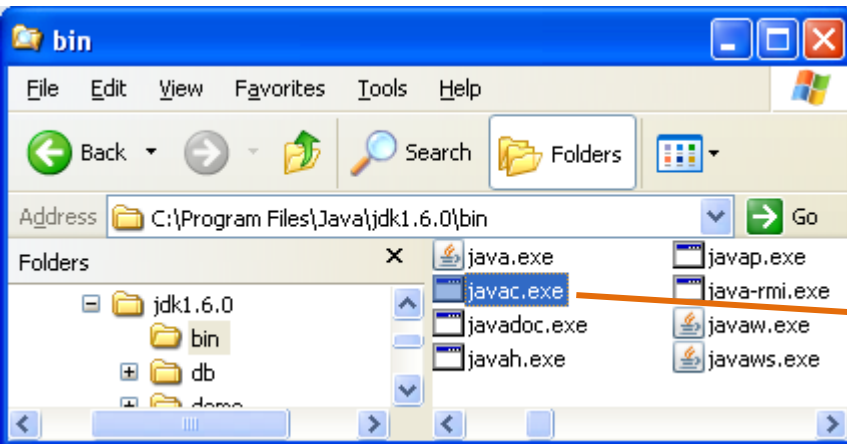


```
// HelloWorld.java: Hello World program
public class HelloWorld
{
    public static void main(String args[])
    {
        System.out.println("Hello World");
    }
}
```

# Program Processing

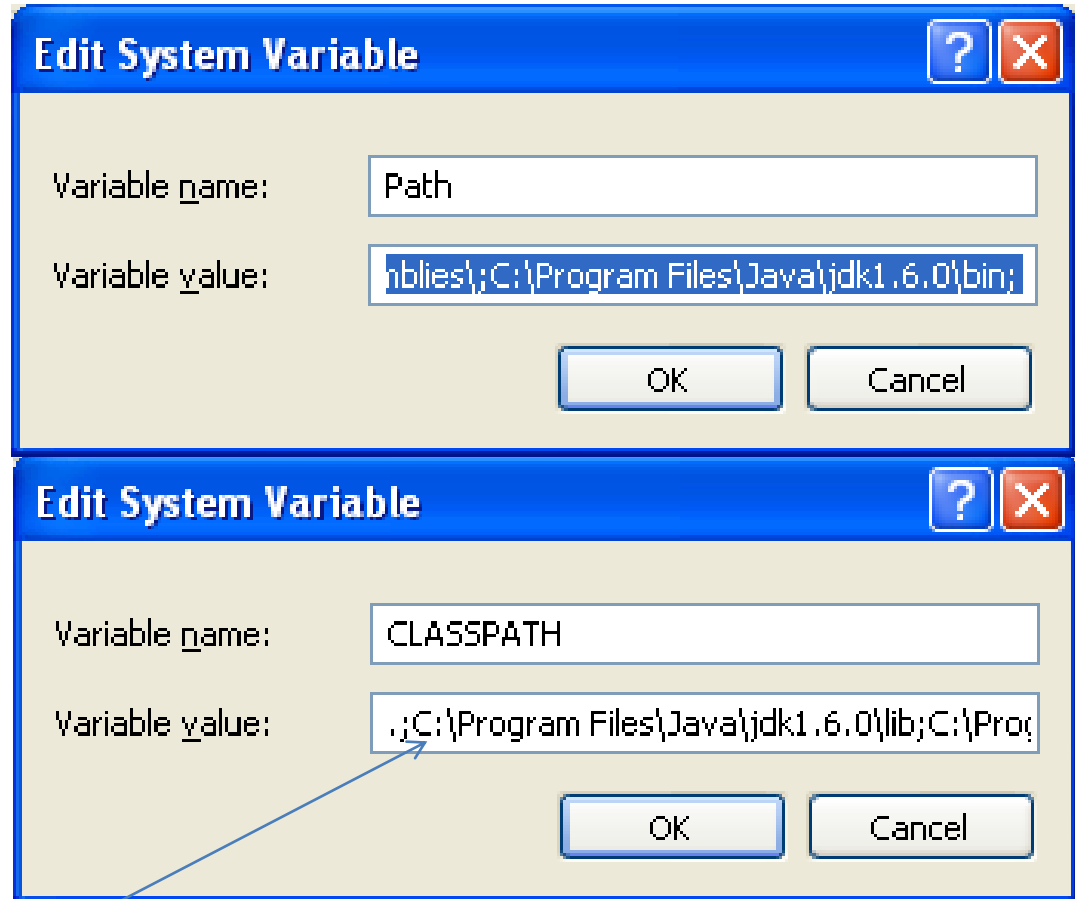
- Compilation
  - # javac HelloWorld.java
  - results in HelloWorld.class
- Execution
  - # java HelloWorld
  - Hello World
  - #

# How can Java support platform-independence?



# Set up Environment Variables

- After installing JavaSE (Java Development Kit Standard Edition), environment variables should be setup to point to the folder in which JavaSE is installed.
- Steps: My Computer/ Properties/ Advanced/Environment Variables/System Variables/ Path/ Edit
- **Why?**



The point at the beginning of the CLASSPATH means that classes will be searched first in the current working folder.

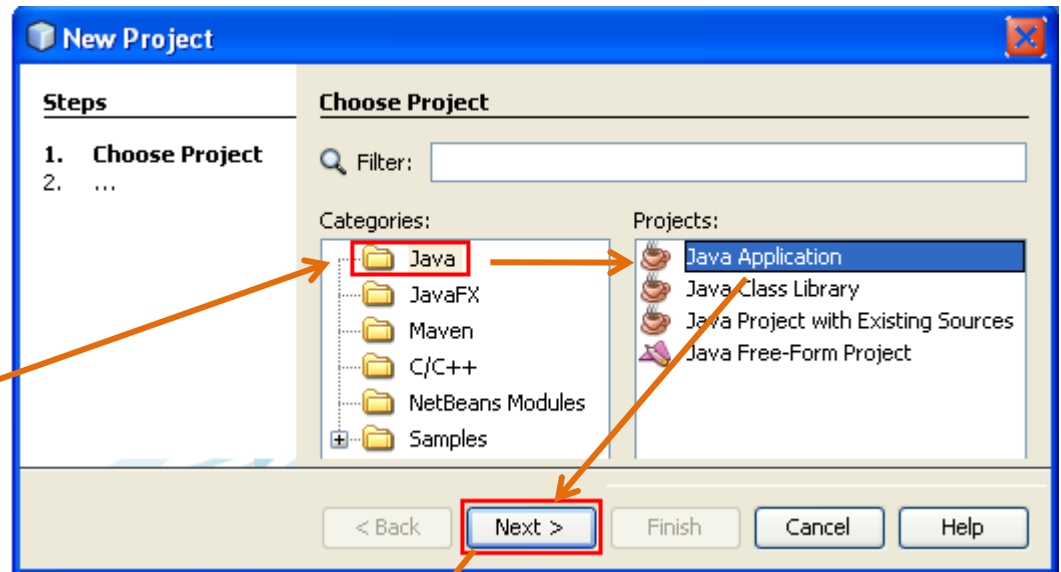
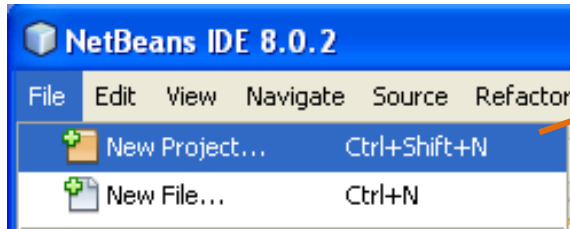
# The first Java program in the NetBeans

This program will show the string “Hello World” to the screen.

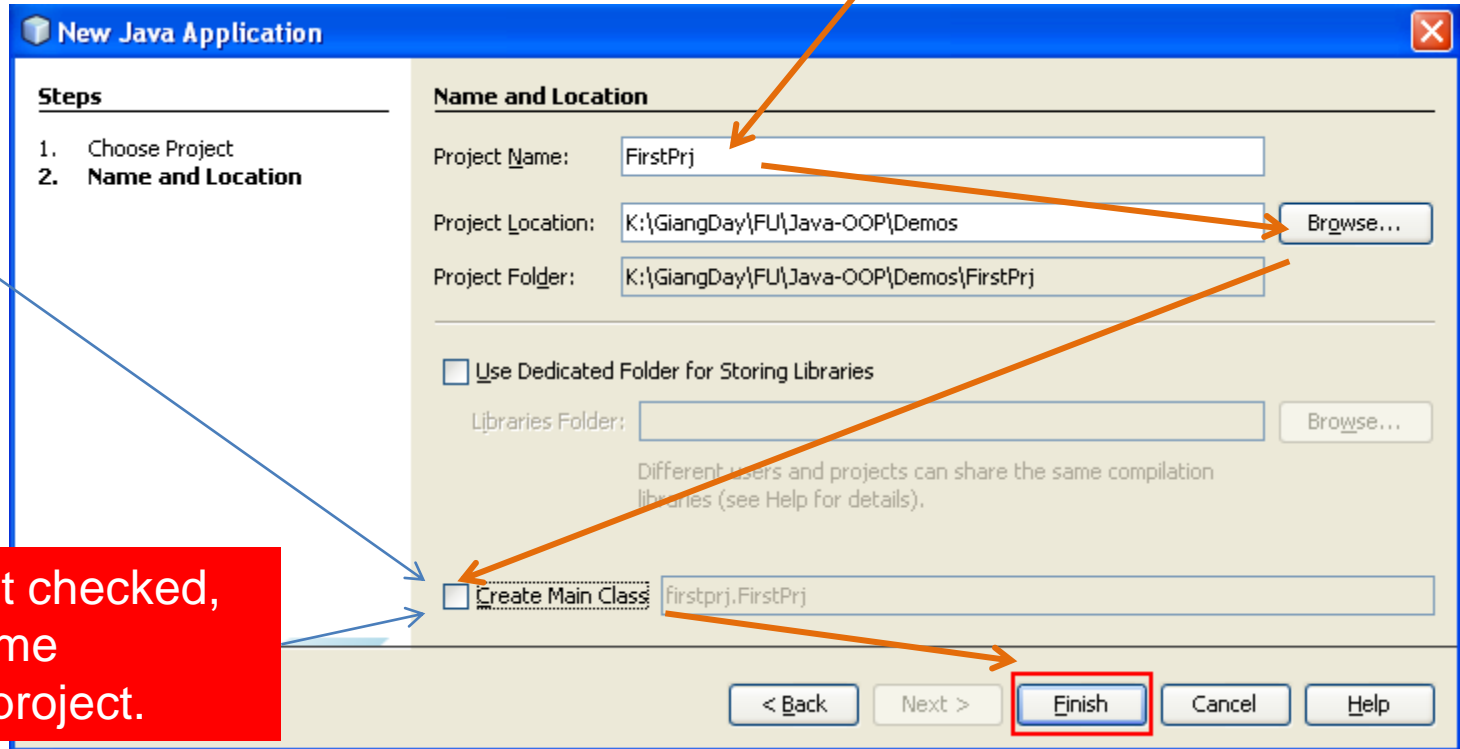
## Steps

- 1- Create a new Java NetBeans project
- 2- Add a Java class
- 3- Write code
- 4- Compile/Run the program

# Step 1- New Project

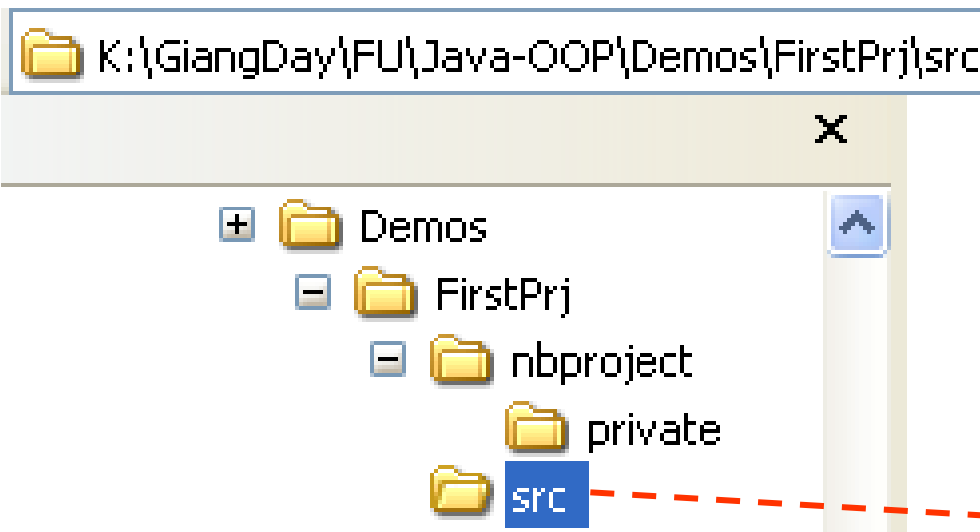


If this option is checked, NetBeans will automatically generate a class, named Main, for the project.

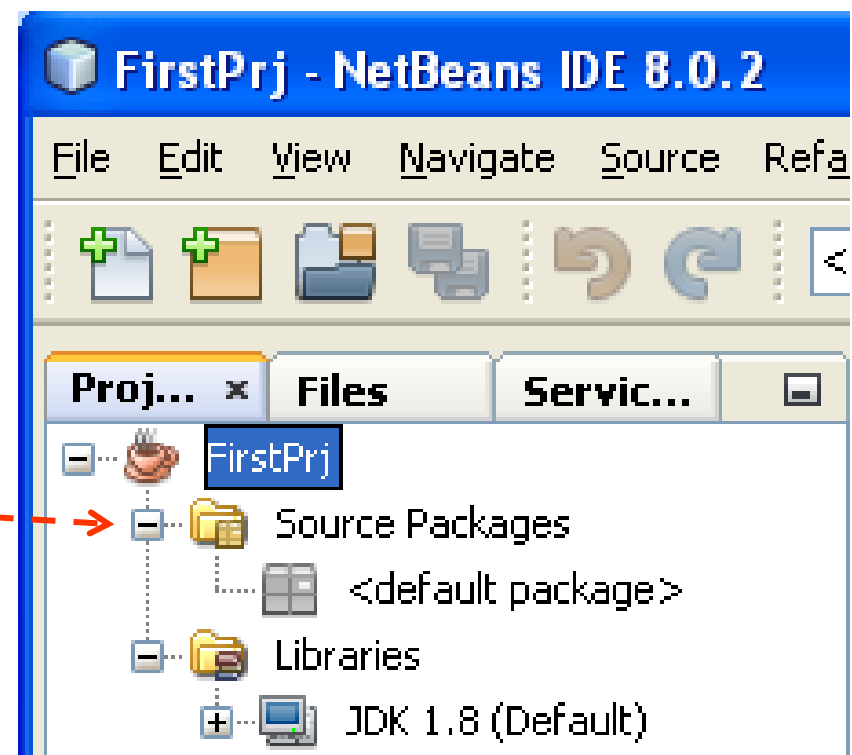


If this option is not checked, we can create some programs in one project.

# New Project...: Initial Project Structure



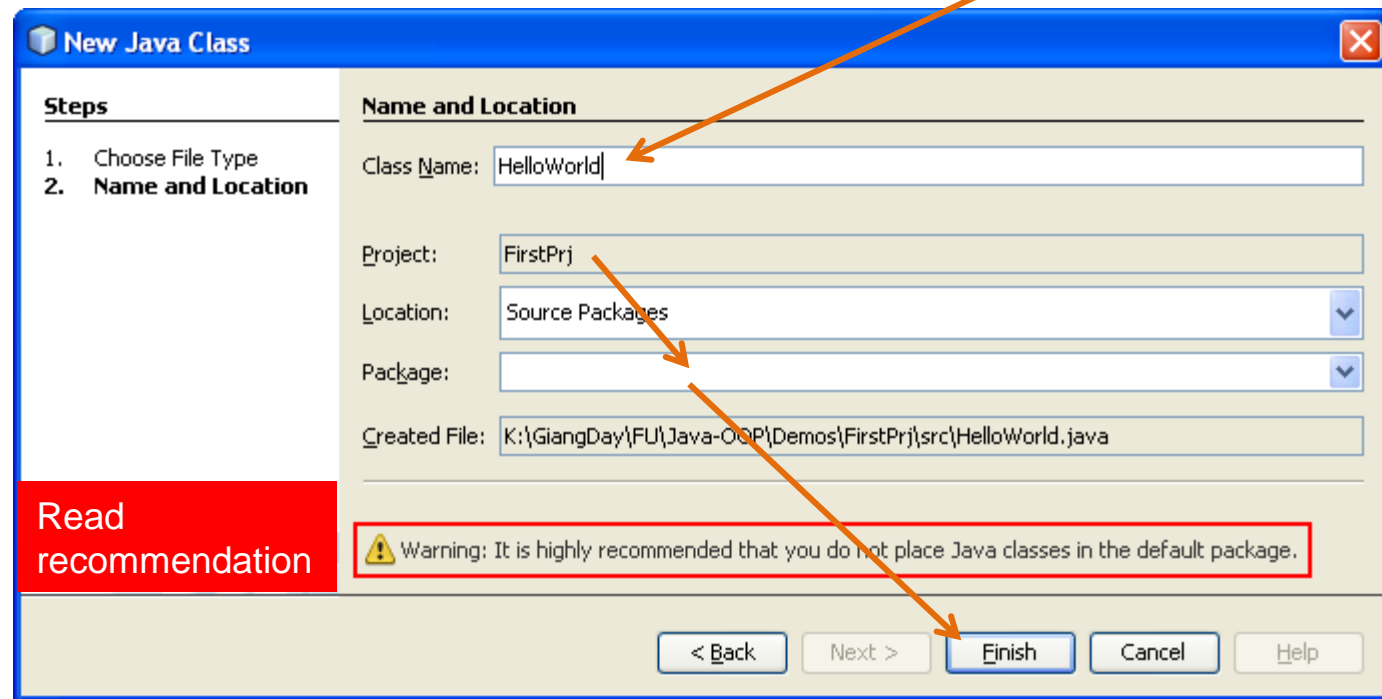
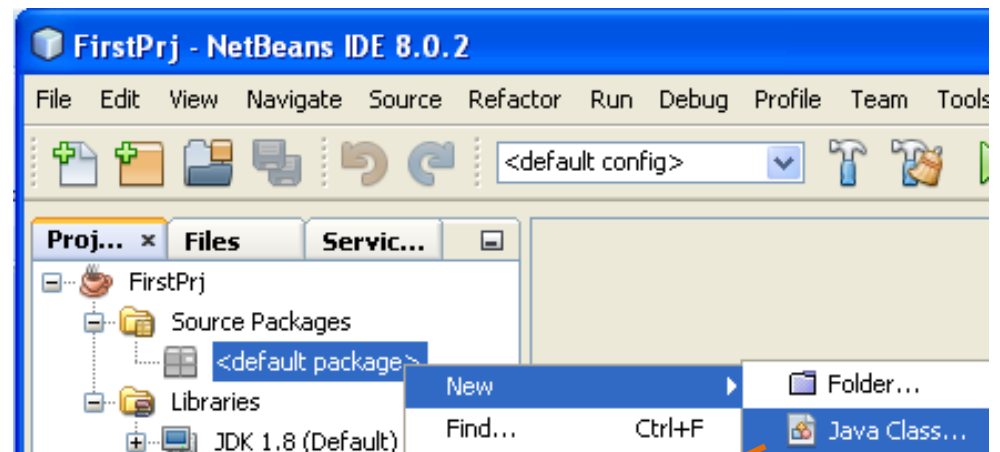
In Windows Explorer



In NetBeans



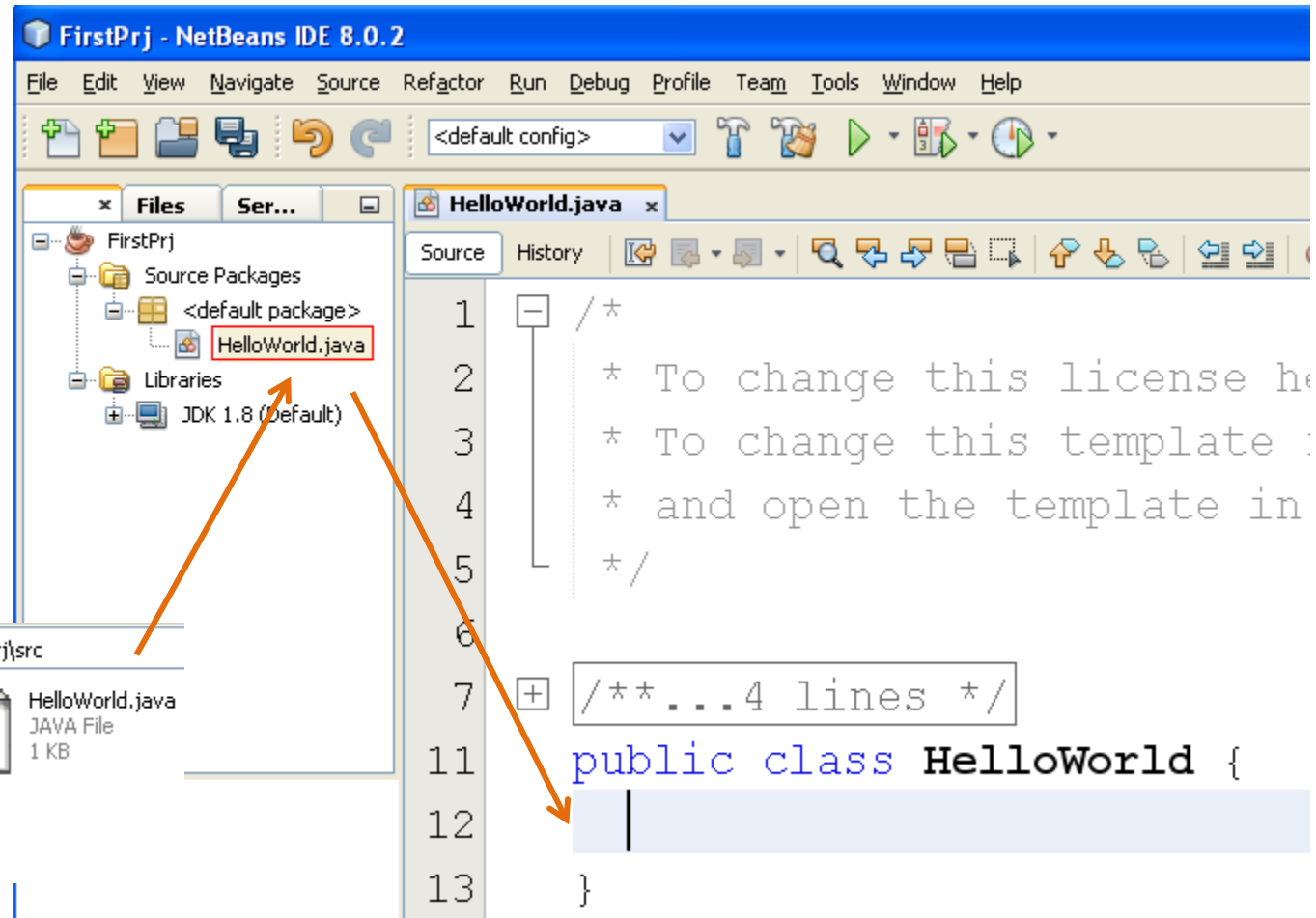
# Step 2: Add a Java Class



Read  
recommendation

In this demo, we do not specify  
package intentionally

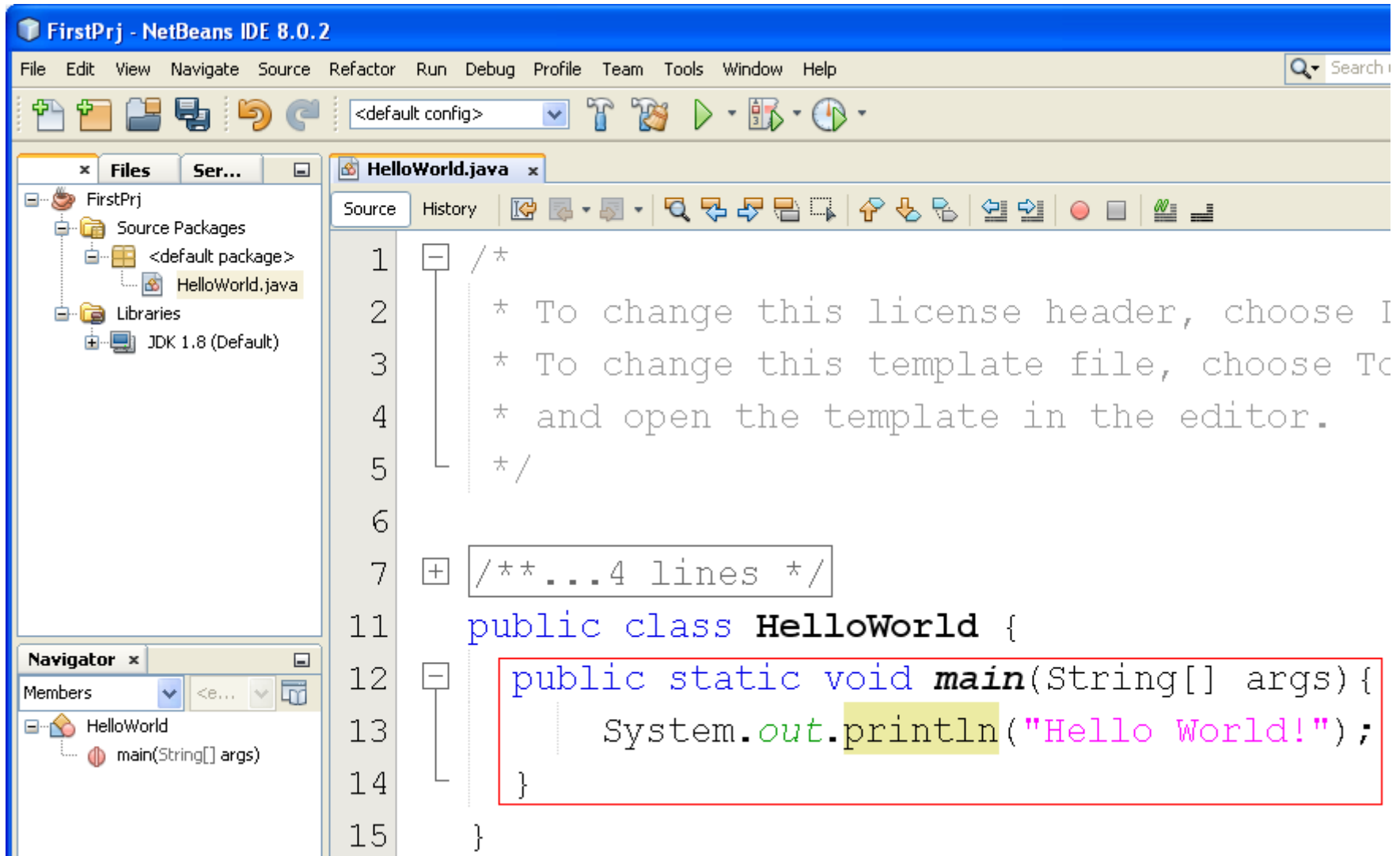
# Add a Java Class...



In Windows Explorer

In NetBeans

# Step 3: Write code



# Explain JDK and its tools

- javac (Java compiler)

```
javac [option] source
```

where,

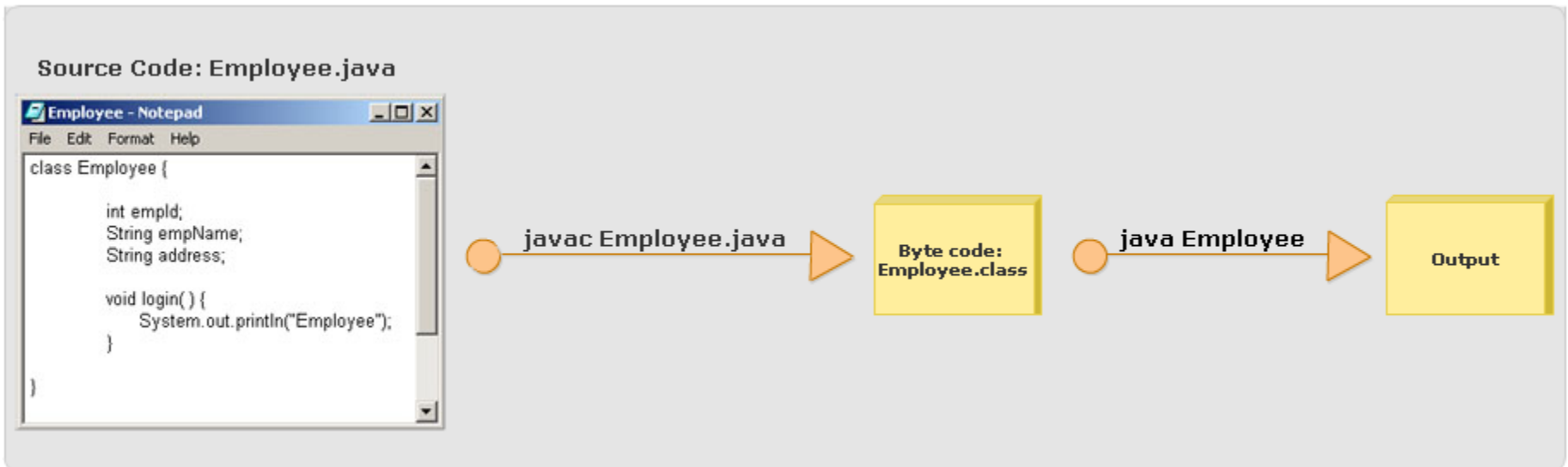
source is one or more file names that end with the extension .java.

- java (Java interpreter)

```
java [option] classname [arguments]
```

where,

classname is the name of the class file.



# Summary

- An overview of Java technology as a whole.
- What to download, what to install, and what to type, for creating a simple "Hello World!" application.
- Discusses the "Hello World!" application.