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## The Java Programming Environment

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# The Java Programming Environment

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- *types of programs :*
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## 2.1 Installing the Java Development Kit

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The most complete and up-to-date versions of JDK are available from Oracle for Linux, Mac OS X, Solaris, and Windows.

Versions in various states of development exist for many other platforms.

### 2.1.1 Downloading the JDK

- url: [www.oracle.com/technetwork/java/javase/downloads](http://www.oracle.com/technetwork/java/javase/downloads)
- *get the software you need :*

Name	Acronym	Explanation
Java Development Kit	<b>JDK</b>	If you want to <b>write</b> Java programs
Java Runtime Environment	<b>JRE</b>	If you want to <b>run</b> Java programs
<b>Server JRE</b>	-	If you want to <b>run</b> Java programs on <b>servers</b>
Standard Edition	<b>SE</b>	If you want to use <b>desktops</b> and <b>simple server application</b>
Enterprise Edition	<b>EE</b>	The <b>Java platform</b> for complex <b>server</b> application
Micro Edition	<b>ME</b>	<b>The</b> Java platform for use on <b>cell phones</b> and other <b>small devices</b>
<b>Java FX</b>	-	An alternate toolkit for <b>graphical user interfaces</b> that is included in Oracle's Java SE distribution
<b>OpenJDK</b>	-	A <b>free and open source implementation of Java SE</b> . It does not include browser integration or JavaFX
Java 2	<b>J2</b>	An <b>outdated term</b> that described <b>Java versions</b> from 1998 until 2006
Software Development Kit	<b>SDK</b>	An <b>outdated term</b> that described the <b>JDK</b> from 1998 until 2006
Update	<b>u</b>	Oracle's term for bug fix release
NetBeans	-	Oracle's integrated development

## 2.1.2 Setting up the JDK

### Under Window

- *Install path :*
  - *warning: without spaces* (路径不要带有空格)

In this note, when referring to the **jdk/bin** directory, we mean the directory with a name such as **C:\Java\jdk1.8.0\_31\bin**

- *setting path :* Add the **jdk/bin** directory to the executable path<sup>1</sup>
  - *way: Control Panel => System and Security => System => Advanced System Settings => System Properties => Advanced Tab => Environment button => System Variables => Path*

启动控制面板、选择系统和安全、选择系统、选择高级系统设置、选择系统属性、选择高级属性、单击环境按钮、滚动系统变量、找到Path系统环境变量、添加以分号结尾的**bin**直接路径(例如:  
**C:\Java\jdk1.8.0\_31\bin;**)

- *testing path: open a terminal window => type the line: **javac -version***

打开终端窗口，键入: javac -version 并回车进行测试，得到类似这样的响应: javac 1.8.0\_31

- *download the documentation : [www.oracle.com/technetwork/java/javase/downloads](http://www.oracle.com/technetwork/java/javase/downloads)*
- *download the Core Java program examples : <http://horstmann.com/corejava>*

## 2.2 Using the Command-Line Tools

1. Open a terminal window
2. Go to **codejava/v1ch02/Welcome** directory
3. such that :

```
C:\WINDOWS\system32>cd F:\Java\corejava\v1ch02\Welcome
C:\WINDOWS\system32>F:
F:\Java\corejava\v1ch02\Welcome>javac Welcome.java
F:\Java\corejava\v1ch02\Welcome>java Welcome
Welcome to Core Java!
=====
F:\Java\corejava\v1ch02\Welcome>
```

- *javac program: the Java compiler*
  - **.java => .class**
- *java program: executes the bytecodes*
  1. **launches** the **Java virtual machine(JVM)**
  2. **executes** the **bytecodes** that the compiler placed in the **class file**

```
/**
 * This program displays a greeting for the reader.
 * @version 1.0 2018-03-07
 * @author KiOii(_EM_Cpper)
 */
public class Welcome
{
    public static void main(String[] args)
    {
        String greeting = "Hello,World!";
        System.out.println(greeting);
        for(int i = 0;i < greeting.length();i++)
            System.out.print("=");
        System.out.println();
    }
}
```

Tip: The excellent tutorial at <http://docs.oracle.com/javase/tutorial/getStarted/cupjava>

## 2.3 Using an Integrated Development Environment

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Updating

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1. 将直接路径名添加到可执行路径中，这将使得操作系统在遍历目录列表时定位到可执行文件。[e](#)