

# Module II

## 第一支Java程式

---

1. Java開發環境建立
2. 第一支Java程式
3. Java程式基本形式

# Java開發環境建立 (1/5)

## 課程實作

- 1. 下載JDK
  - <http://www.oracle.com/technetwork/java/javase/downloads/index.html>
  - 選擇對應的系統平台下載對應的JDK (參考附圖)
- 2. 安裝JDK
  - 請預先在C:/ (以WINDOWS系統)下建立資料夾，如jdk1.8.0\_XX (XX為版本號碼，注意資料夾名稱勿有空白)
  - 執行JDK安裝程式，並將檔案安裝在剛建立的資料夾裡
- 3. 環境變數設定 (我的電腦→右鍵→內容→進階→環境變數)
  - 下方的系統變數→新增或編輯以下三行：
    - **java\_home**           如：**C:\jdk1.8.0\_XX**
    - **path**                如：**%java\_home%\bin;...;...**
    - **classpath**          如：**.;...;...**

原因課程中說明

注意：JRE與JDK (Java Development Kits)的差別為何？

# Java開發環境建立 (2/5)

1. 點選Downloads

2. 點選Java for Developers

The screenshot shows the Oracle website's main page. The top navigation bar includes links for Products, Solution, Downloads, Store, Support, Training, Partners, and About. The 'Downloads' link is highlighted with a red box. Below the navigation bar, there are several sections: Popular Downloads, Database, Enterprise Management, Developer Tools, and Applications. The 'Popular Downloads' section is highlighted with a red box, and the 'Java for Developers' link is highlighted with a red box. The 'Database' section lists Oracle Database, Oracle Database 11g Express Edition, MySQL, Oracle Berkeley DB, Oracle Instant Client, and Oracle Application Express. The 'Enterprise Management' section lists Oracle Enterprise Manager, Oracle Application Testing Suite, and See All... The 'Developer Tools' section lists SQL Developer, JDeveloper and ADF, Developer Tools for Visual Studio, Enterprise Pack for Eclipse, NetBeans IDE, and See All... The 'Applications' section lists Oracle Fusion Applications, Oracle E-Business Suite, PeopleSoft, JD Edwards, Siebel CRM, Agile, and AutoVue. The 'Popular Downloads' section lists Computer, JavaFX, Solaris, MySQL, Oracle Fusion Middleware 11g, Oracle Database, and Prebuilt Developer VMs. The 'Database' section lists Oracle Database, Oracle Database 11g Express Edition, MySQL, Oracle Berkeley DB, Oracle Instant Client, and Oracle Application Express. The 'Enterprise Management' section lists Oracle Enterprise Manager, Oracle Application Testing Suite, and See All... The 'Developer Tools' section lists SQL Developer, JDeveloper and ADF, Developer Tools for Visual Studio, Enterprise Pack for Eclipse, NetBeans IDE, and See All... The 'Applications' section lists Oracle Fusion Applications, Oracle E-Business Suite, PeopleSoft, JD Edwards, Siebel CRM, Agile, and AutoVue. The 'Popular Downloads' section lists Computer, JavaFX, Solaris, MySQL, Oracle Fusion Middleware 11g, Oracle Database, and Prebuilt Developer VMs.

www.oracle.com/index.html

Oracle OpenWorld: Minds, Technology, Registration. All Open.

Rich HR and Talent Solutions

Only 15% of HR's time is spent strategically

Announcing Exadata X4, What's New

Kerridge

Customers grow with engineered systems

Watch the video

See all customers

www.oracle.com/technetwork/java/javase/downloads/index.html

# Java開發環境建立 (3/5)

← → ↻ 🏠 [www.oracle.com/technetwork/java/javase/downloads/jdk8-downloads-2133151.html](http://www.oracle.com/technetwork/java/javase/downloads/jdk8-downloads-2133151.html)  
📁 應用程式 📁 Dropbox 📁 Google Drive 📁 SkyDrive

## 1. 點選同意條款

- Java SE
- Java EE
- Java ME
- Java SE Support
- Java SE Advanced & Suite
- Java Embedded
- Java DB
- Web Tier
- Java Card
- Java TV
- New to Java
- Community
- Java Magazine

Overview Downloads Documentation Community Technologies Training

### Java SE Development Kit 8 Downloads

Thank you for downloading this release of the Java™ Platform, Standard Edition Development Kit (JDK™). The JDK is a development environment for building applications, applets, and components using the Java programming language.

The JDK includes tools useful for developing and testing programs written in the Java programming language and running on the Java platform.

See also:

- Java Developer Newsletter (tick the checkbox under Subscription Center > Oracle Technology News)
- Java Developer Day hands-on workshops (free) and other events
- Java Magazine

JDK MD5 Checksum

Looking for JDK 8 on ARM?

JDK 8 for ARM downloads have moved to the [JDK 8 for ARM download page](#).

### Java SE Development Kit 8u5

You must accept the [Oracle Binary Code License Agreement for Java SE](#) to download this software.

☐ Accept License Agreement ☒ Decline License Agreement

Linux x86	133.58 MB	<a href="#">jdk-8u5-linux-i586.rpm</a>
Linux x86	152.5 MB	<a href="#">jdk-8u5-linux-i586.tar.gz</a>
Linux x64	133.87 MB	<a href="#">jdk-8u5-linux-x64.rpm</a>
Linux x64	151.64 MB	<a href="#">jdk-8u5-linux-x64.tar.gz</a>
Mac OS X x64	207.79 MB	<a href="#">jdk-8u5-macosx-x64.dmg</a>
Solaris SPARC 64-bit (SVR4 package)	135.68 MB	<a href="#">jdk-8u5-solaris-sparcv9.tar.Z</a>
Solaris SPARC 64-bit	95.54 MB	<a href="#">jdk-8u5-solaris-sparcv9.tar.gz</a>
Solaris x64 (SVR4 package)	135.9 MB	<a href="#">jdk-8u5-solaris-x64.tar.Z</a>
Solaris x64	93.19 MB	<a href="#">jdk-8u5-solaris-x64.tar.gz</a>
Windows x86	151.71 MB	<a href="#">jdk-8u5-windows-i586.exe</a>
Windows x64	155.18 MB	<a href="#">jdk-8u5-windows-x64.exe</a>

### Java SE Development Kit 8u5 Demos and Samples Downloads

Java SE Development Kit 8u5 Demos and Samples Downloads are released under the [Oracle](#)

### Java SDKs and Tools

- [Java SE](#)
- [Java EE and Glassfish](#)
- [Java ME](#)
- [Java Card](#)
- [NetBeans IDE](#)
- [Java Mission Control](#)

### Java Resources

- [Java APIs](#)
- [Technical Articles](#)
- [Demos and Videos](#)
- [Forums](#)
- [Java Magazine](#)
- [Java.net](#)
- [Developer Training](#)
- [Tutorials](#)
- [Java.com](#)



## 2. 點選對應系統平台的JDK

# Java開發環境建立 (4/5)

← → ↺ 🏠 [www.oracle.com/technetwork/java/javase/downloads/jdk8-downloads-2133151.html](http://www.oracle.com/technetwork/java/javase/downloads/jdk8-downloads-2133151.html) ☆ 🇨🇳 🖨️ ☰

📁 應用程式 📁 Dropbox 📁 Google Drive 📁 SkyDrive

Java Card

Java TV

New to Java

Community

Java Magazine

- Java Developer Newsletter (tick the checkbox under Subscription Center > Oracle Technology News)
- Java Developer Day hands-on workshops (free) and other events
- Java Magazine

JDK MD5 Checksum

**Looking for JDK 8 on ARM?**  
JDK 8 for ARM downloads have moved to the [JDK 8 for ARM download page](#).

Java SE Development Kit 8u5

You must accept the [Oracle Binary Code License Agreement for Java SE](#) to download this software.

Thank you for accepting the Oracle Binary Code License Agreement for Java SE; you may now download this software.

Product / File Description	File Size	Download
Linux x86	133.58 MB	<a href="#">jdk-8u5-linux-i586.rpm</a>
Linux x86	152.5 MB	<a href="#">jdk-8u5-linux-i586.tar.gz</a>
Linux x64	133.87 MB	<a href="#">jdk-8u5-linux-x64.rpm</a>
Linux x64	151.64 MB	<a href="#">jdk-8u5-linux-x64.tar.gz</a>
Mac OS X x64	207.79 MB	<a href="#">jdk-8u5-macosx-x64.dmg</a>
Solaris SPARC 64-bit (SVR4 package)	135.68 MB	<a href="#">jdk-8u5-solaris-sparcv9.tar.Z</a>
Solaris SPARC 64-bit	95.54 MB	<a href="#">jdk-8u5-solaris-sparcv9.tar.gz</a>
Solaris x64 (SVR4 package)	135.9 MB	<a href="#">jdk-8u5-solaris-x64.tar.Z</a>
Solaris x64	93.19 MB	<a href="#">jdk-8u5-solaris-x64.tar.gz</a>
Windows x86	151.71 MB	<a href="#">jdk-8u5-windows-i586.exe</a>
Windows x64	155.18 MB	<a href="#">jdk-8u5-windows-x64.exe</a>

Java SE Development Kit 8u5 Demos and Samples Downloads

Java SE Development Kit 8u5 Demos and Samples Downloads are released under the [Oracle BSD License](#).

Product / File Description	File Size	Download
Linux x86	52.66 MB	<a href="#">jdk-8u5-linux-i586-demos.rpm</a>
Linux x86	52.65 MB	<a href="#">jdk-8u5-linux-i586-demos.tar.gz</a>
Linux x64	52.72 MB	<a href="#">jdk-8u5-linux-x64-demos.rpm</a>
Linux x64	52.7 MB	<a href="#">jdk-8u5-linux-x64-demos.tar.gz</a>
Mac OS X	53.42 MB	<a href="#">jdk-8u5-macosx-x86_64-demos.zip</a>
Solaris SPARC 64-bit	12.15 MB	<a href="#">jdk-8u5-solaris-sparcv9-demos.tar.Z</a>
Solaris SPARC 64-bit	8.29 MB	<a href="#">jdk-8u5-solaris-sparcv9-demos.tar.gz</a>

Technical Articles

Demos and Videos

Forums

Java Magazine

Java.net

Developer Training

Tutorials

Java.com

NEW!

Java magazine

Get it now for FREE!

Subscribe Today

Webcast

Introducing Java 8

Watch Now

5

全部顯示

## 2. 開始下載JDK

# Java開發環境建立 (5/5)

- 程式開發工具
  - 文字編輯輔助工具
    - Notepad++ (<http://notepad-plus-plus.org/zh/>) 免費
    - UltraEdit (<http://www.ultraedit.com/>)
  - 整合開發環境 (Integrated Development Environment, IDE)
    - NetBeans (<http://www.netbeans.org/>) Oracle官方建議使用IDE
    - Eclipse (<http://www.eclipse.org/>) 免費並為本課程所使用

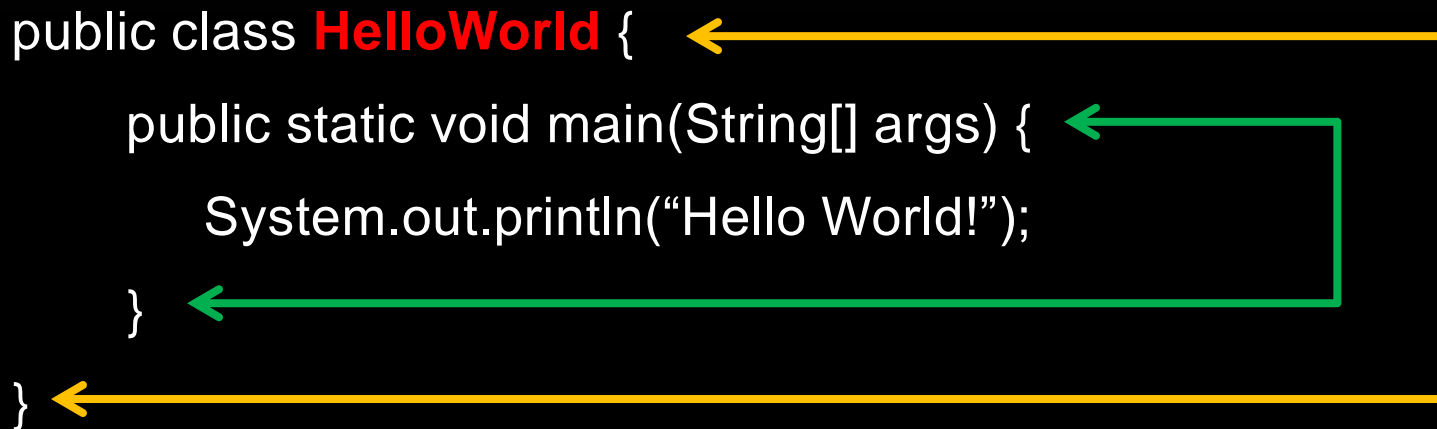
注意：

建議初學者先使用文字編輯工具，瞭解Java編譯與執行方式後，從撰寫錯誤與找bug過程中成長，再行使用IDE以增加生產力與開發效率

# 第一支Java程式

- 撰寫你的第一支Java程式：HelloWorld.java

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



- Java的檔案名稱必須以class的名稱來命名，所以檔名要儲存為  
**HelloWorld.java**

# Java程式基本形式 (1/3)

- 基本的Java類別架構：

```
<modifier>* class <class name> {  
    <attribute _declaration>*  
    <constructor_declaration>*  
    <method_declaration>*  
}
```

- 一個類別(class)的成員分為變數與方法兩種成員



# Java程式基本形式 (2/3)

- 類別(class)宣告：

- `<modifier>*`            `class`    `<class_name>`    `{...}`
- 修飾存取方式            `class`    類別名稱            `{...}`

- 屬性變數宣告與初始化：

- `<modifier>*`            `<type>`        `<name>`            `[ = <initial_value>;`
- 修飾存取方式            資料型態        變數名稱            `[ = 初始值            ];`

- 方法(method)宣告：

- `<modifier>*`            `<return_type>`    `<name>`            `(<argument>*){...}`
- 修飾存取方式            傳回值型態        方法名稱            `( 傳入參數        ){...}`

- 註解：單行→`//.....`        多行→`/*.....`

`.....`  
`*/`

# Java程式基本形式 (3/3)

- HelloWorld.java範例

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

- **main方法遵循先前所提的語法，比較特別的地方為：**
  - main方法包含**兩個修飾子public與static**，兩者都一定要有
  - main方法並不回傳值，因此**傳回值型態為void**
  - main方法其本身方法名稱為main
  - main方法可以接受0 ~ 多個字串作為參數從(String[] args)傳入，可以讓你在命令列執行時，將參數傳入程式碼中 (詳細於陣列array章節說明)

# 章節整理

- 熟悉如何建立一個可以使用Java進行開發的環境，並實際操作JDK的下載與安裝步驟流程
- 注意環境變數如java\_home, path與classpath的設定與瞭解其設定原因
- 選擇合適的開發工具，如Eclipse, Netbeans等IDE，並清楚如何下載與安裝
- 撰寫、編譯並執行你的第一支Java程式
- 藉由你的第一支程式，瞭解一支Java程式的基本形式：
  - 類別宣告
  - 屬性變數宣告與初始化
  - 方法宣告
  - 註解說明
- main方法特別注意事項，需要public與static兩個修飾子，且無傳回值型別，故回傳型態為void，另可傳入0～多個字串參數與程式一起執行