








JDK and Eclipse Installation

Java JDK and IDE

- Java is a programming language. The JDK is a development environment for building applications, applets, and components using the Java programming language.
- Eclipse is the IDE of Java. IDE is short for Integrated development environment which provides comprehensive facilities to computer programmers for software development.

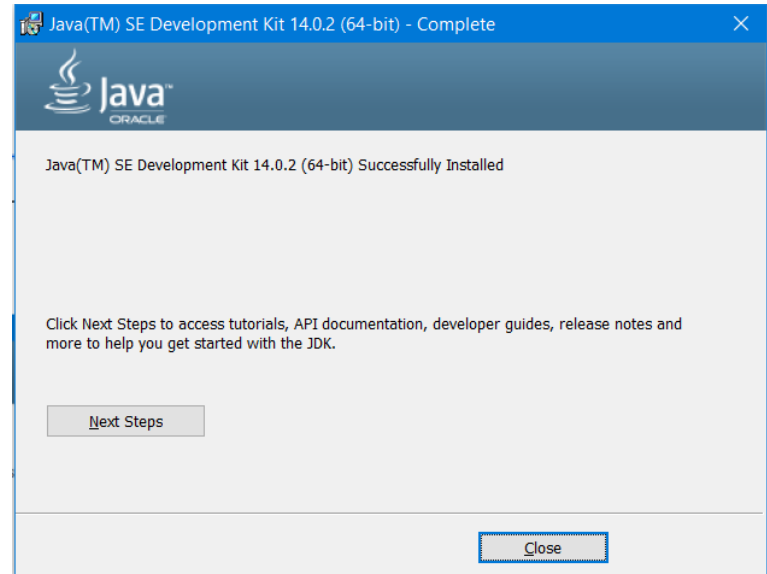
Install JDK

- Go to <https://www.oracle.com/java/technologies/javase-jdk14-downloads.html>, and the windows installer to download.

Java SE Development Kit 14.0.2		
This software is licensed under the Oracle Technology Network License Agreement for Oracle Java SE		
Product / File Description	File Size	Download
Linux Debian Package	157.93 MB	 jdk-14.0.2_linux-x64_bin.deb
Linux RPM Package	165.06 MB	 jdk-14.0.2_linux-x64_bin.rpm
Linux Compressed Archive	182.06 MB	 jdk-14.0.2_linux-x64_bin.tar.gz
macOS Installer	176.37 MB	 jdk-14.0.2_osx-x64_bin.dmg
macOS Compressed Archive	176.79 MB	 jdk-14.0.2_osx-x64_bin.tar.gz
Windows x64 Installer	162.11 MB	 jdk-14.0.2_windows-x64_bin.exe
Windows x64 Compressed Archive	181.56 MB	 jdk-14.0.2_windows-x64_bin.zip

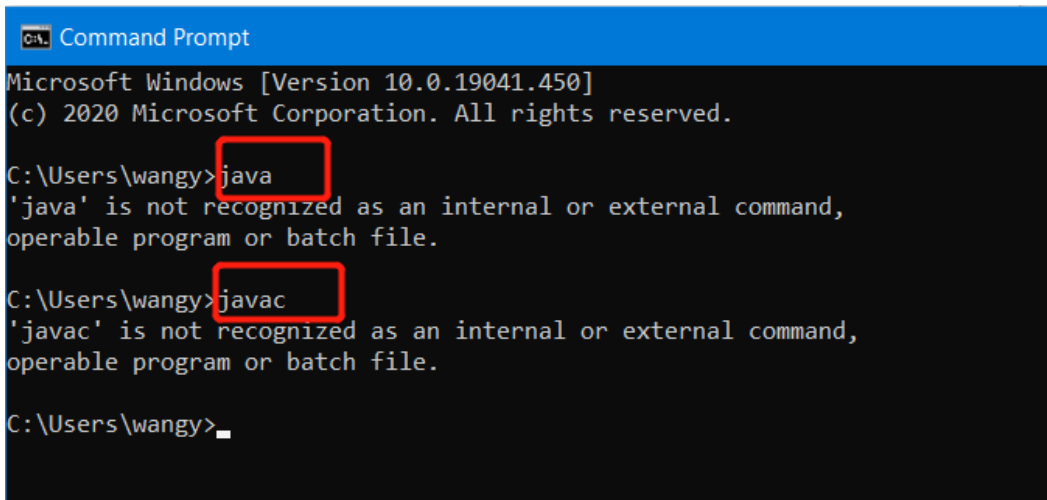
Install JDK

- Click the .exe file you just downloaded and following the instructions to install the JDK, you should get the following result.



Set the system path for the java

- After successfully installed the JDK, it is highly recommended to set the system path for java
- Usually if you have not configured the environment variables before, when you type java/javac in command prompt, it looks like this



```
Command Prompt
Microsoft Windows [Version 10.0.19041.450]
(c) 2020 Microsoft Corporation. All rights reserved.

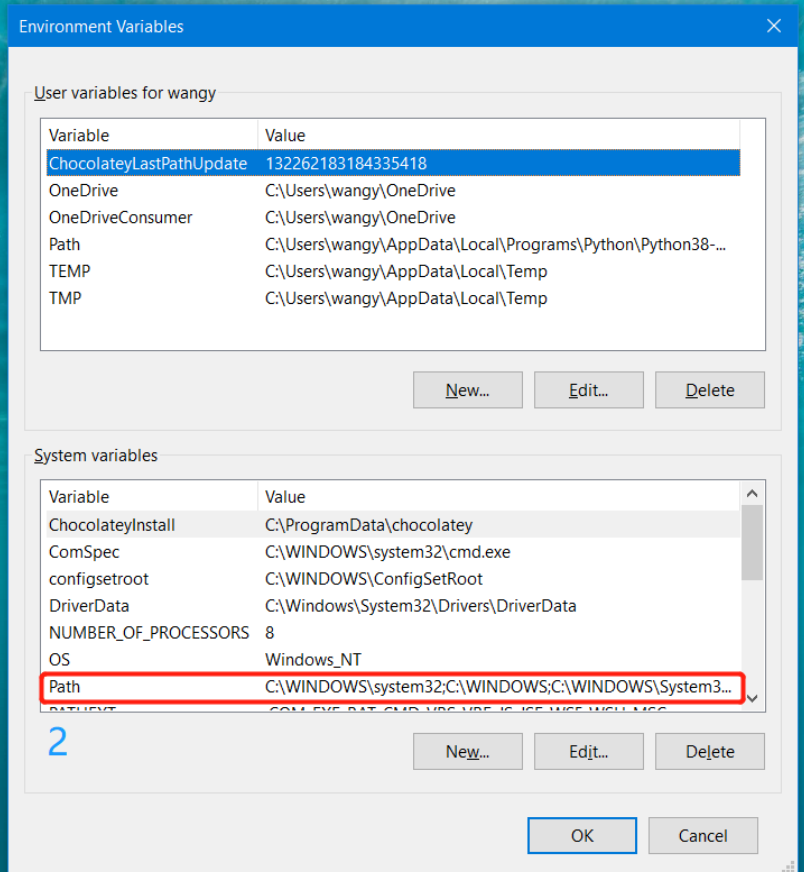
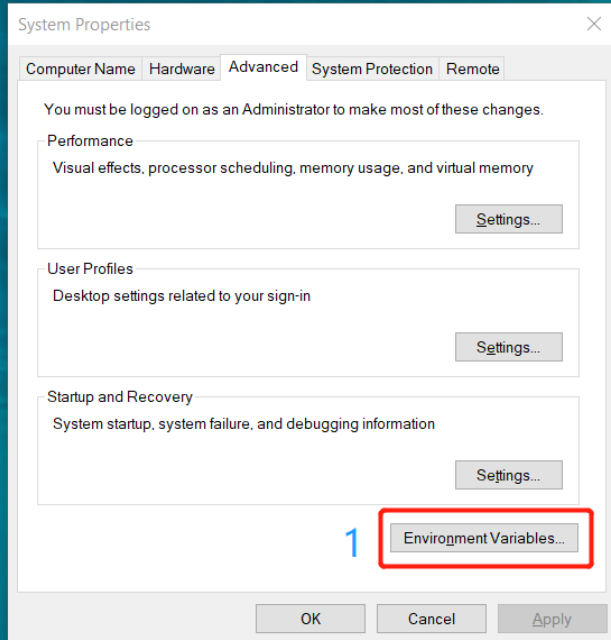
C:\Users\wangy>java
'java' is not recognized as an internal or external command,
operable program or batch file.

C:\Users\wangy>javac
'javac' is not recognized as an internal or external command,
operable program or batch file.

C:\Users\wangy>
```

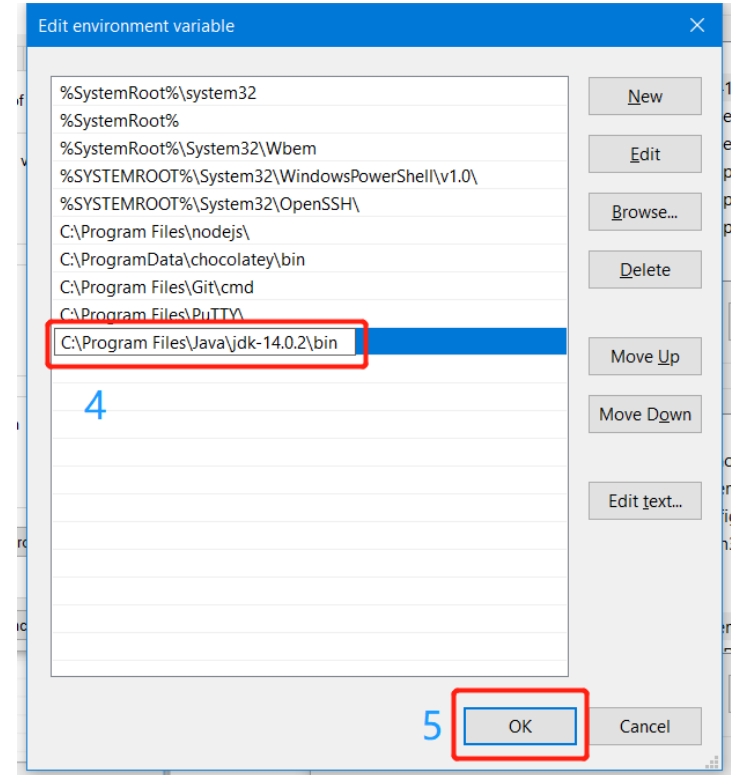
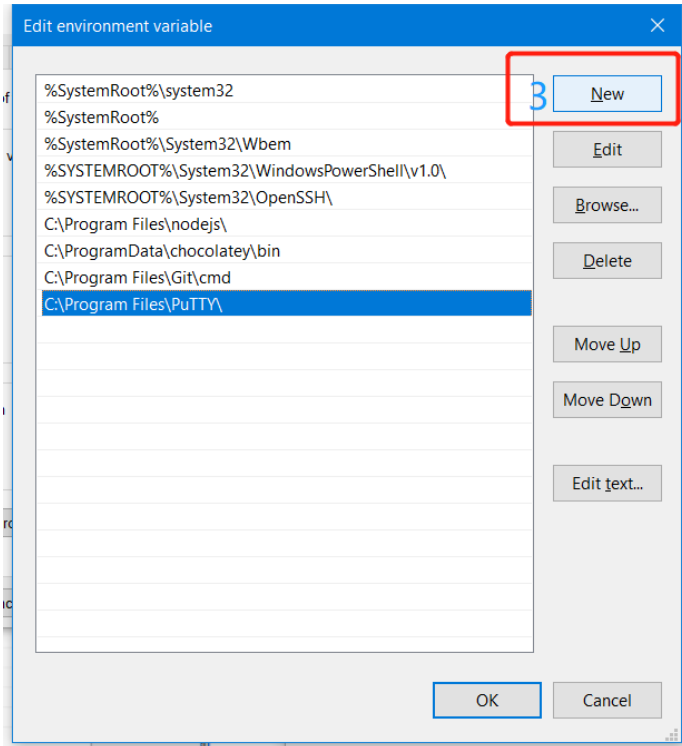
Set the system path for the java

- In the windows start menu, type `**environment variables**`, you should get the following dialog.



Type 'C:\Program Files\Java\jdk-14.0.2\bin' in the new section and hit OK

Note: In the Step 4, it depends on where you installed your JDK, if the path is default when you installed the JDK, it should be the same as me.



Test your JDK

- Now you should have global variable name 'java' as the 'global environment variables'. To test it, open your '**Command Prompt**' and type 'java' or 'javac', you should get the following

```
Microsoft Windows [Version 10.0.19041.450]
(c) 2020 Microsoft Corporation. All rights reserved.

C:\Users\wang>java
Usage: java [options] <mainclass> [args...]
        (to execute a class)
or java [options] -jar <jarfile> [args...]
        (to execute a jar file)
or java [options] -m <module>[/<mainclass>] [args...]
    java [options] --module <module>[/<mainclass>] [args...]
        (to execute the main class in a module)
or java [options] <sourcefile> [args]
        (to execute a single source-file program)

Arguments following the main class, source file, -jar <jarfile>,
-m or --module <module>/<mainclass> are passed as the arguments to
main class.
```

```
C:\Users\wang>javac
Usage: javac <options> <source files>
where possible options include:
    @<filename>                Read options and filenames
    -Akey[=value]              Options to pass to annotation
    --add-modules <module>(,<module>)*
                                Root modules to resolve in addition to the initial
                                on the module path if <module> is ALL-MODULE-PATH
    --boot-class-path <path>, -bootclasspath <path>
                                Override location of bootstrap class files
    --class-path <path>, -classpath <path>, -cp <path>
                                Specify where to find user class files and annotations
    -d <directory>             Specify where to place generated
    -deprecation                Output source locations where deprecated APIs are
                                used
```

Your first java code

- Create a new folder under your desktop called 'Hello'
- Create a new file 'HelloWorld.java' under the newly created folder
- Open this 'HelloWorld.java' by text for example 'Notepad' which is already installed in windows.
- Copy the following code:

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



HelloWorld.java - Notepad

File Edit Format View Help

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

Compile your HelloWorld.java

- CD(Change Directory) your Command Prompt into your new folder `Hello`

Note: My path is like this `C:\Users\wangy\Desktop\Hello`, I assume the only difference between my path and your path is the user name. So the general case of the path (if you create the folder under Desktop) is like this

C:\Users\your_user_name\Desktop\Hello

- Type `javac HelloWorld.java` (javac means 'java compile')
- Type `java HelloWorld` (run the compiled java code)
- You can see the result of your first java code!!!

Command Prompt

Microsoft Windows [Version 10.0.19041.450]
(c) 2020 Microsoft Corporation. All rights reserved.

C:\Users\wangy>cd C:\Users\wangy\Desktop\Hello

1

C:\Users\wangy\Desktop\Hello>javac HelloWorld.java

2

C:\Users\wangy\Desktop\Hello>java HelloWorld

3

Hello World!

Result of your code!

C:\Users\wangy\Desktop\Hello>_

Installation of Eclipse

- Go to <https://www.eclipse.org/downloads/download.php?file=/oomph/epp/2020-06/R/eclipse-inst-win64.exe> and download Eclipse and install.
- Click Eclipse IDE for JAVA DEVELOPERS when installing Eclipse

 Download

Download from: Canada - Rafal Rzczkowski (http)

File: `eclipse-inst-win64.exe` SHA-512



>> Select Another Mirror



The screenshot shows the Eclipse Installer website interface. At the top, there is a navigation bar with the 'eclipseinstaller' logo, the text 'by Oomph', a 'DONATE' button, and a menu icon. Below the navigation bar is a search bar with the placeholder text 'type filter text'. The main content area displays two product cards. The first card, 'Eclipse IDE for Java Developers', is highlighted with a red rectangular border. It features an icon with a purple 'T' and a green 'E' and describes itself as 'The essential tools for any Java developer, including a Java IDE, a Git client, XML Editor, Maven and Gradle integration'. The second card, 'Eclipse IDE for Enterprise Java Developers', features a gear icon with 'Java EE IDE' text and describes itself as 'Tools for developers working with Java and Web applications, including a Java IDE, tools for Web Services, JPA and Data Tools, JavaServer Pages and Faces,...'.


Usually Eclipse will find your installed JDK automatically. Like the following.

If Eclipse did not find it correctly, you have to do it manually by click the 'FOLDER' icon.

Java 1.8+ VM	C:\Program Files\Java\jdk-14.0.2 (Current)	▼	
Installation Folder	C:\Users\wangy\eclipse\java-2020-06		

☒ create start menu entry

☒ create desktop shortcut

 **INSTALL**

Click INSTALL to continue if everything looks fine.

Launch Eclipse

After successfully installed your Eclipse, you should see this and let's LAUNCH it!

Java 1.8+ VM

C:\Program Files\Java\jdk-14.0.2 (Current)



Installation Folder

C:\Users\wangy\eclipse\java-2020-06



create start menu entry



create desktop shortcut

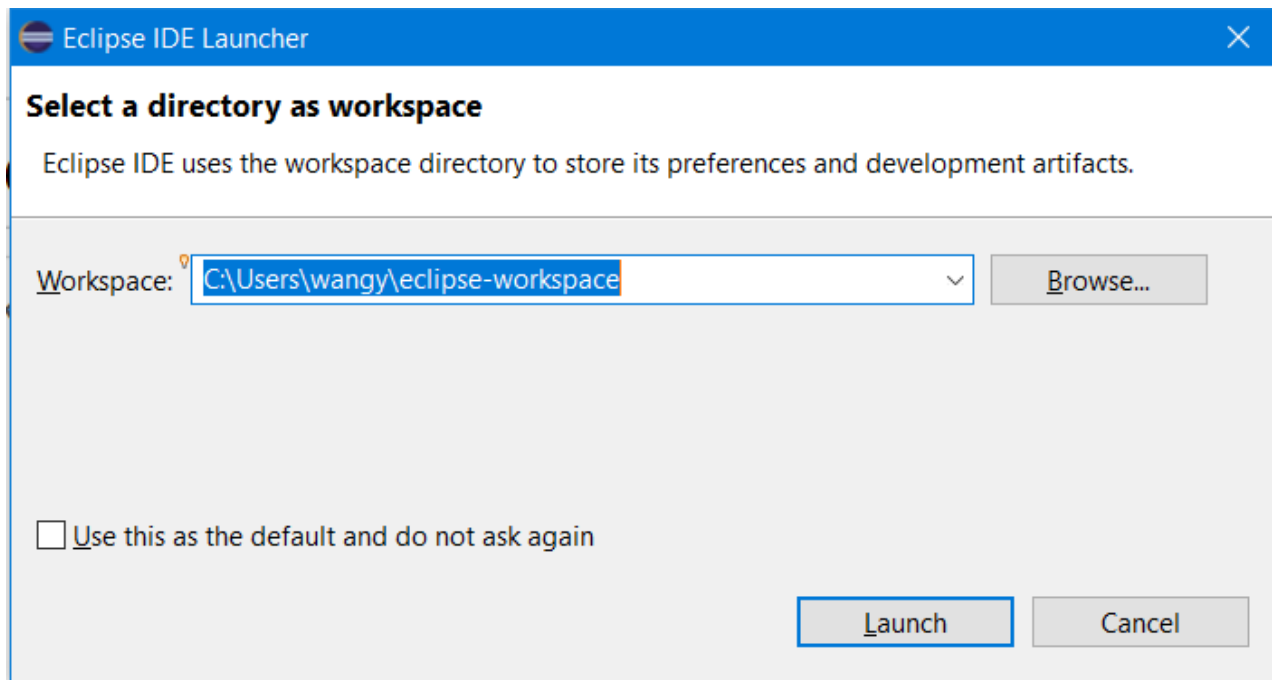
▶ **LAUNCH**

show readme file

open in system explorer

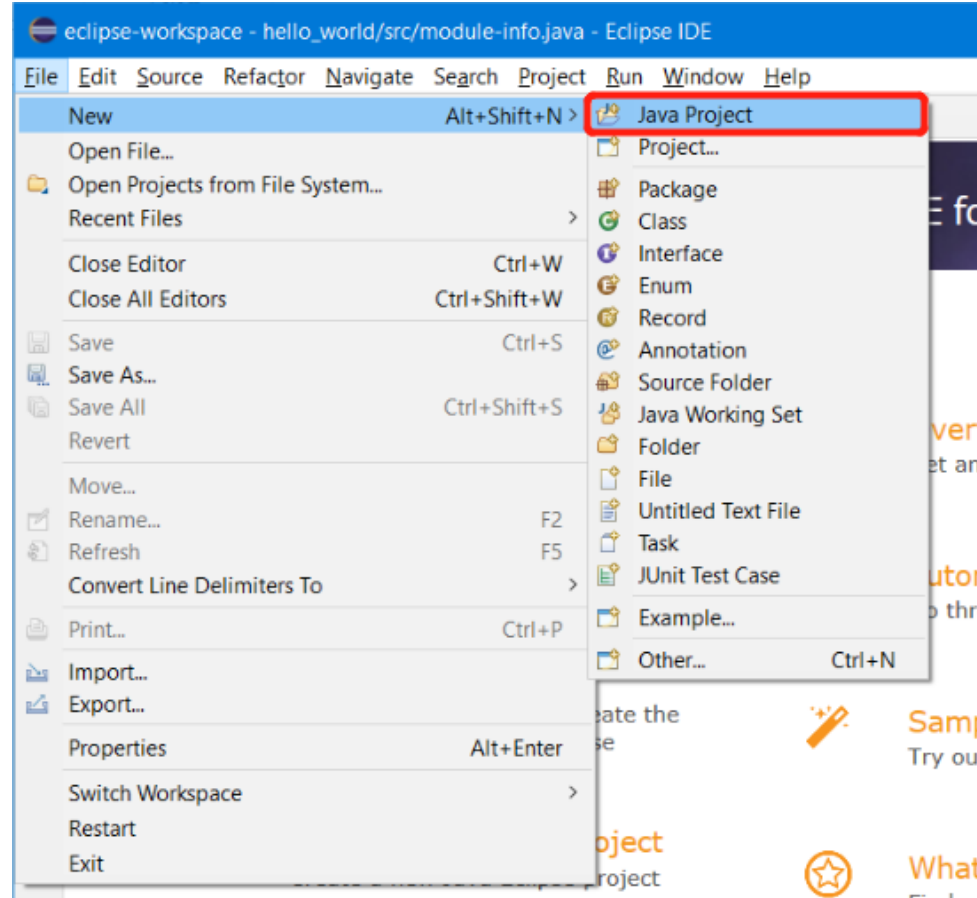
keep installer

Eclipse may ask you to set workspace. Leave it as default.



Create your first Project

File => New => Java Project

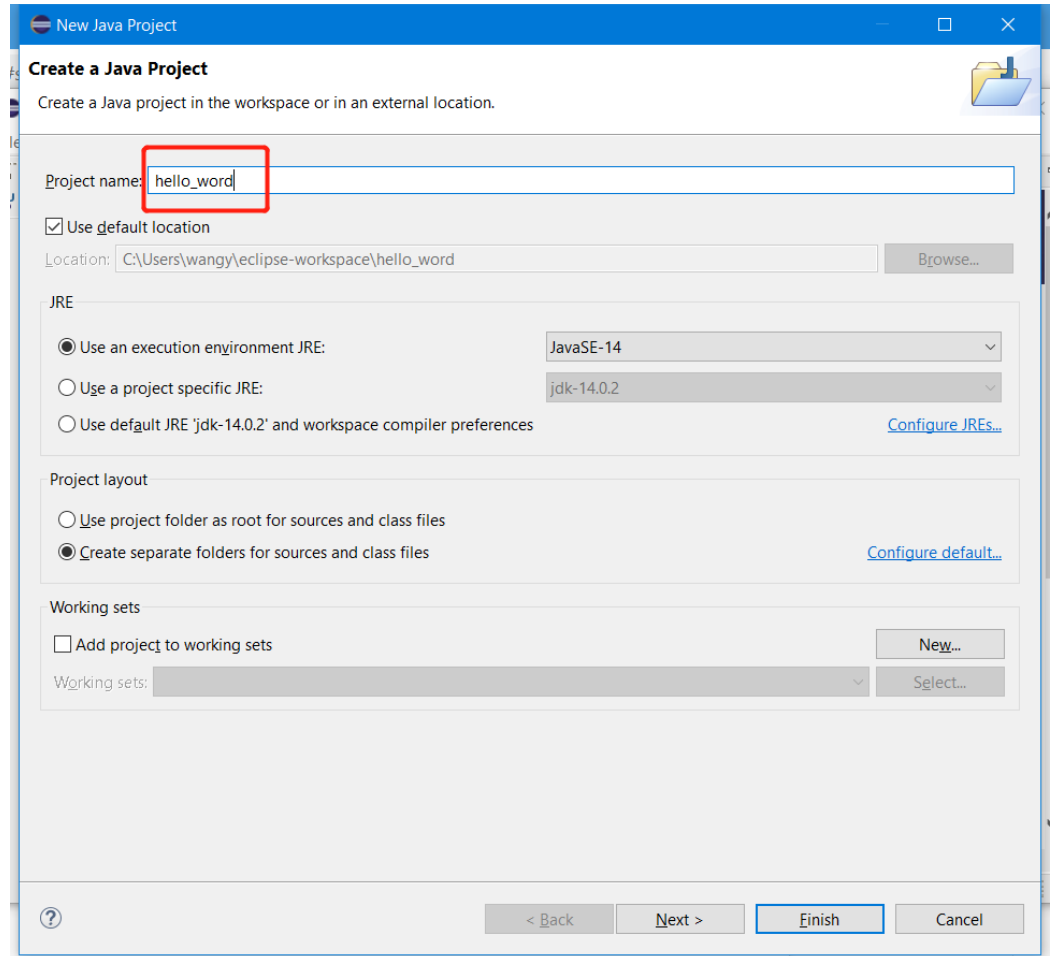


Create your hello_world

Project

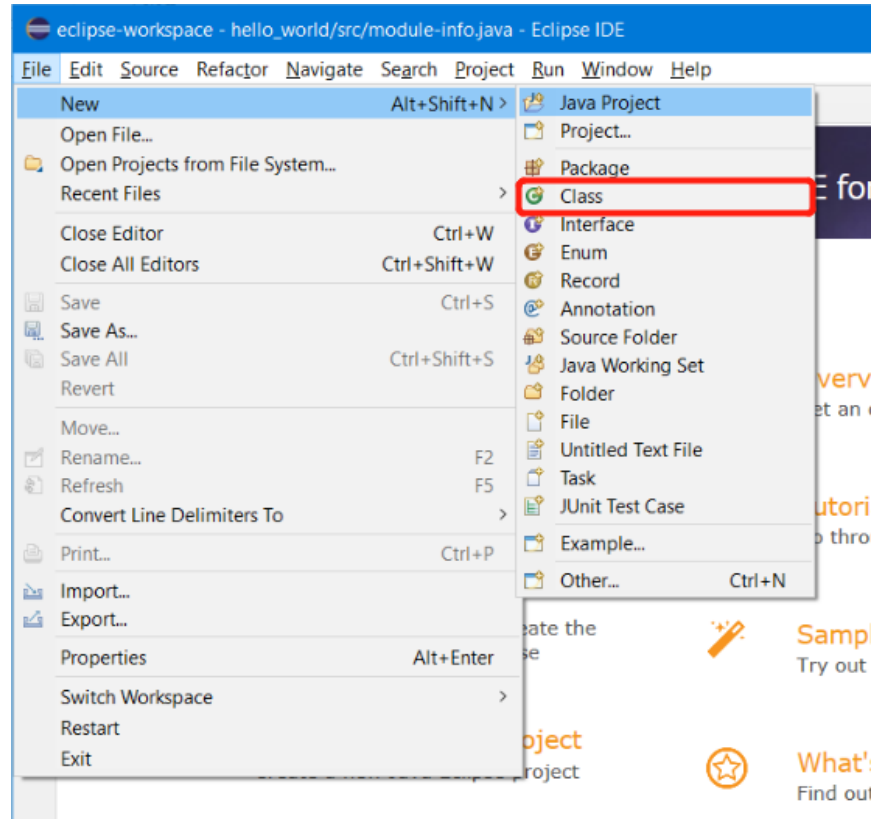
Click finish and you have
already created a java project

Called `hello_world`



Create class

File => New => Class



Create class

You can call your created class

`Main` and click finish

New Java Class

Create a new Java class.

Source folder: [Browse...](#)

Package: [Browse...](#)

☐ Enclosing type: [Browse...](#)

Name:

Modifiers: ☒ public ☐ package ☐ private ☐ protected
☐ abstract ☐ final ☐ static

Superclass: [Browse...](#)

Interfaces: [Add...](#) [Remove](#)

Which method stubs would you like to create?

☐ public static void main(String[] args)
☐ Constructors from superclass
☒ Inherited abstract methods

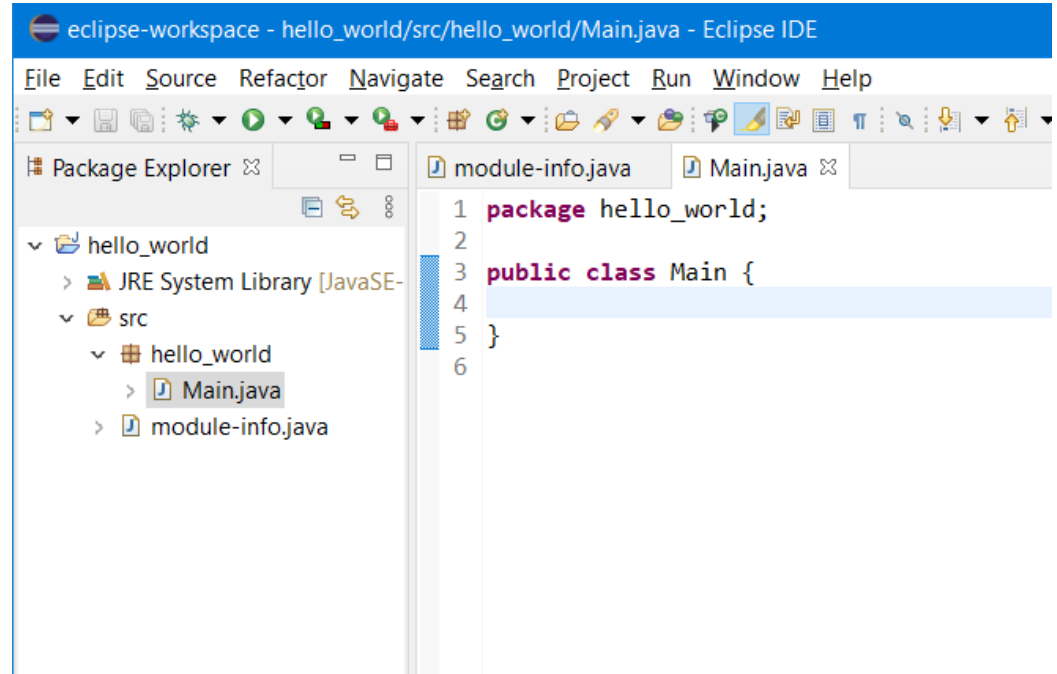
Do you want to add comments? (Configure templates and default value [here](#))
☐ Generate comments

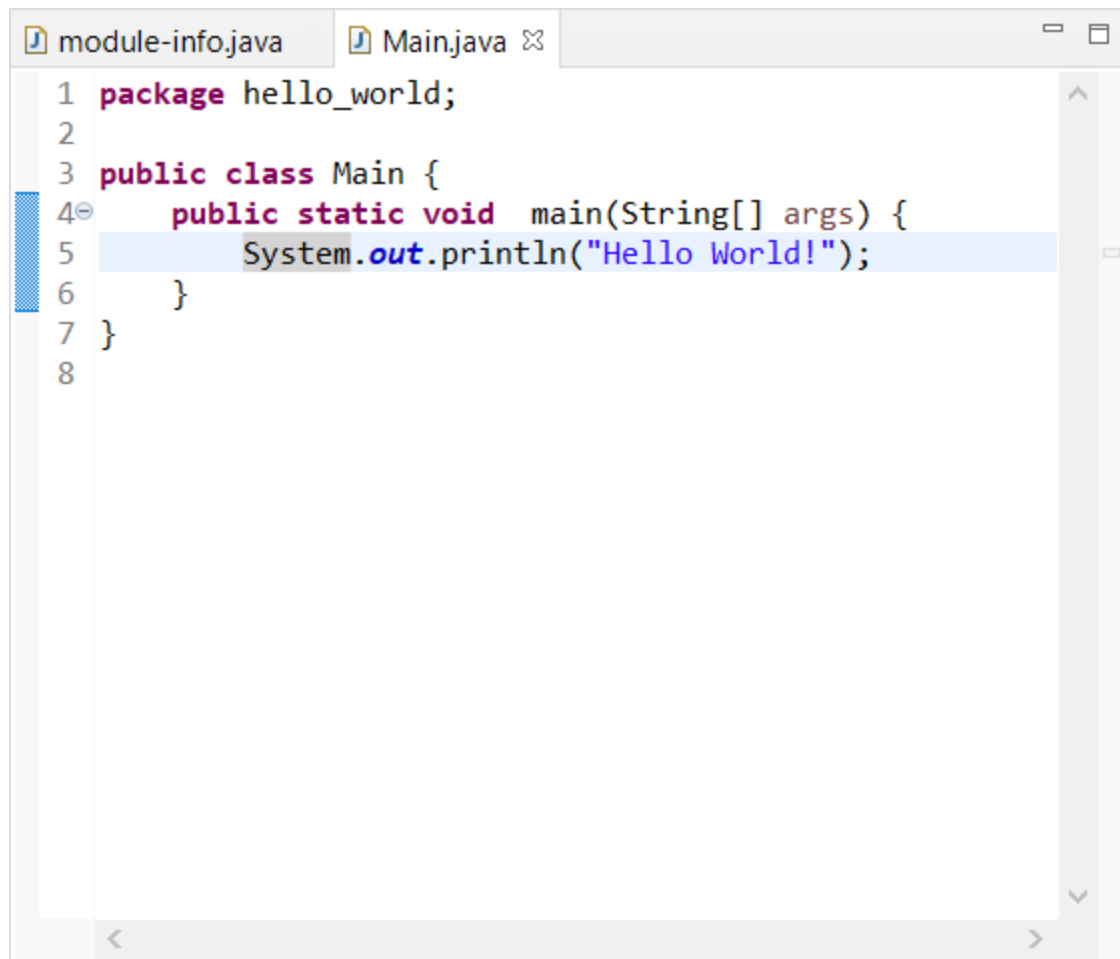
[?](#) [Finish](#) [Cancel](#)

Type in your own code

You can type in your code

In the Main class



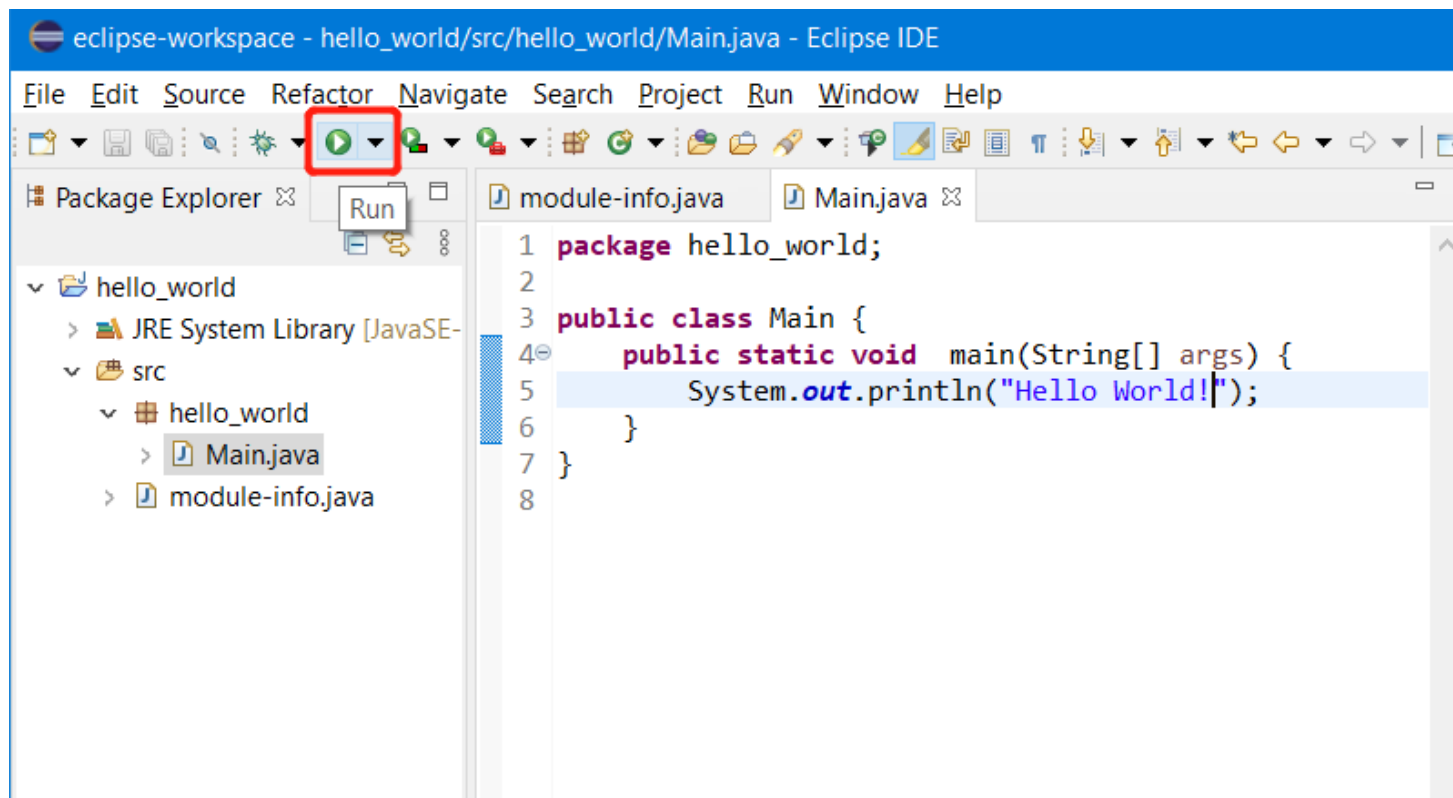


The image shows a code editor window with two tabs: 'module-info.java' and 'Main.java'. The 'Main.java' tab is active and contains the following Java code:

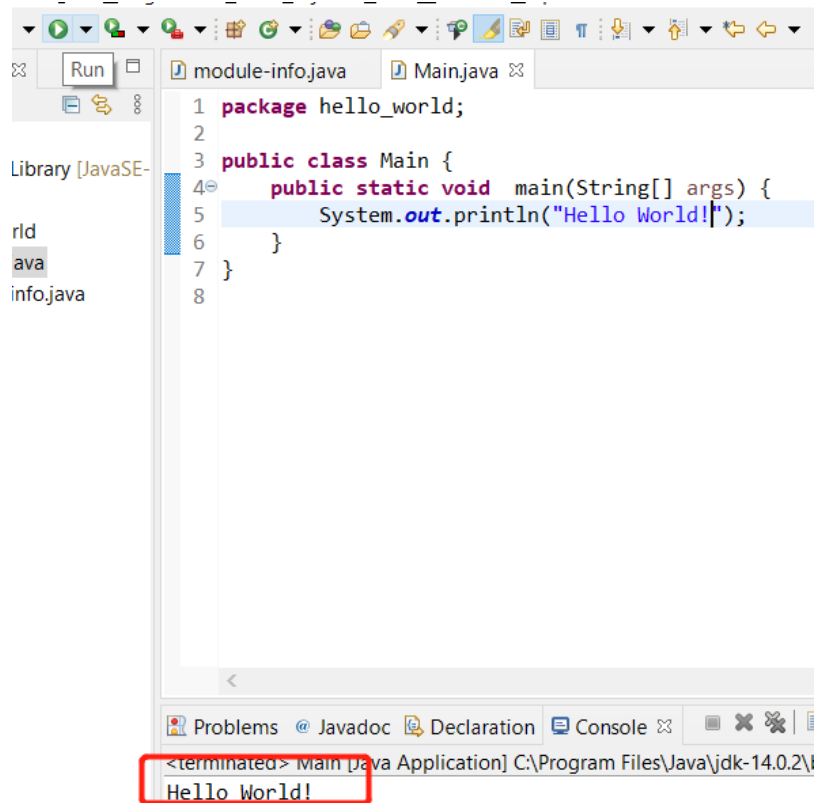
```
1 package hello_world;
2
3 public class Main {
4     public static void main(String[] args) {
5         System.out.println("Hello World!");
6     }
7 }
8
```

The code is syntax-highlighted: keywords like 'package', 'public', 'class', 'static', and 'void' are in purple; the class name 'Main' is in black; the method name 'main' is in black; the parameter 'String[] args' is in black; the variable 'args' is in black; the method call 'System.out.println' is in black; the string "Hello World!" is in blue; and the closing brace of the method is in black. The line numbers 1 through 8 are on the left side of the editor. The editor has a light gray background and a vertical scrollbar on the right side.

Compile and run



DONE!



The screenshot shows an IDE window with a Java file named `Main.java` open. The code is as follows:

```
1 package hello_world;  
2  
3 public class Main {  
4     public static void main(String[] args) {  
5         System.out.println("Hello World!");  
6     }  
7 }  
8
```

The `main` method is highlighted with a blue selection bar. On the left, a 'Library' pane shows 'JavaSE-'. Below the code editor, a 'Console' pane displays the output of the program:

```
<terminated> Main [Java Application] C:\Program Files\Java\jdk-14.0.2\bin\java.exe  
Hello World!
```

The output text is enclosed in a red rectangular box.