COMSC-051

Java Programming Part 1

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Chapter 3

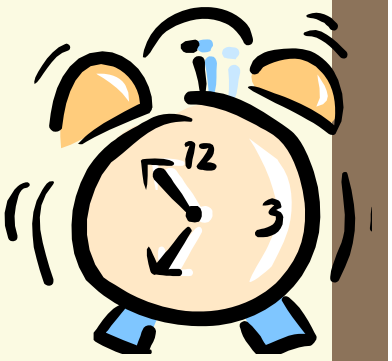
3

Setting Up Your Development Environment

This third chapter takes a short detour from Java concepts to give you a development envi

Chapter 3 Topics:
What you will learn in this chapter:

- How and where to start programming.
- What Integrated Development Environment are
- How to install Eclipse IDE for own use
- How to being using Eclipse for Java Programming



Integrated Development Environments page 42

- IDEs are applications that offer programmers facilities for developing software
- It include tools that support all aspects of software development, including:

Creating Code	**Debugging**	**Compiling**
Checking Syntax	**Running the Code**	**Track Project & Programs**

Java Development Kit (JDK) page 42

- In order to create and compile Java programs, you will need to download and install JDK:

http://www.oracle.com/technetwork/java/javase/downloads/jdk8-downloads-2133151.html

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.

Java SE Development Kit 8u66

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Product / File Description	File Size	Download
Linux x86	154.67 MB	jdk-8u66-linux-i586.rpm
Linux x86	174.83 MB	jdk-8u66-linux-i586.tar.gz
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Linux x64	172.89 MB	jdk-8u66-linux-x64.tar.gz
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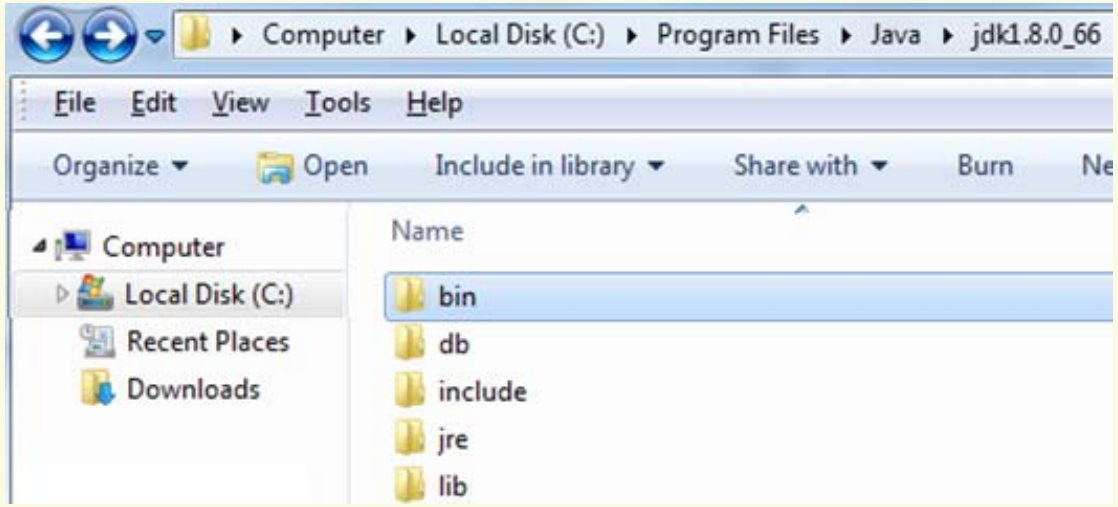
Windows x86	181.33 MB	jdk-8u66-windows-i586.exe
Windows x64	186.65 MB	jdk-8u66-windows-x64.exe

Java Development Kit (JDK) page 43

- JDK will be installed in the following folder:
- Windows Path: C:\Program Files\Java\jdk1.8.0_66



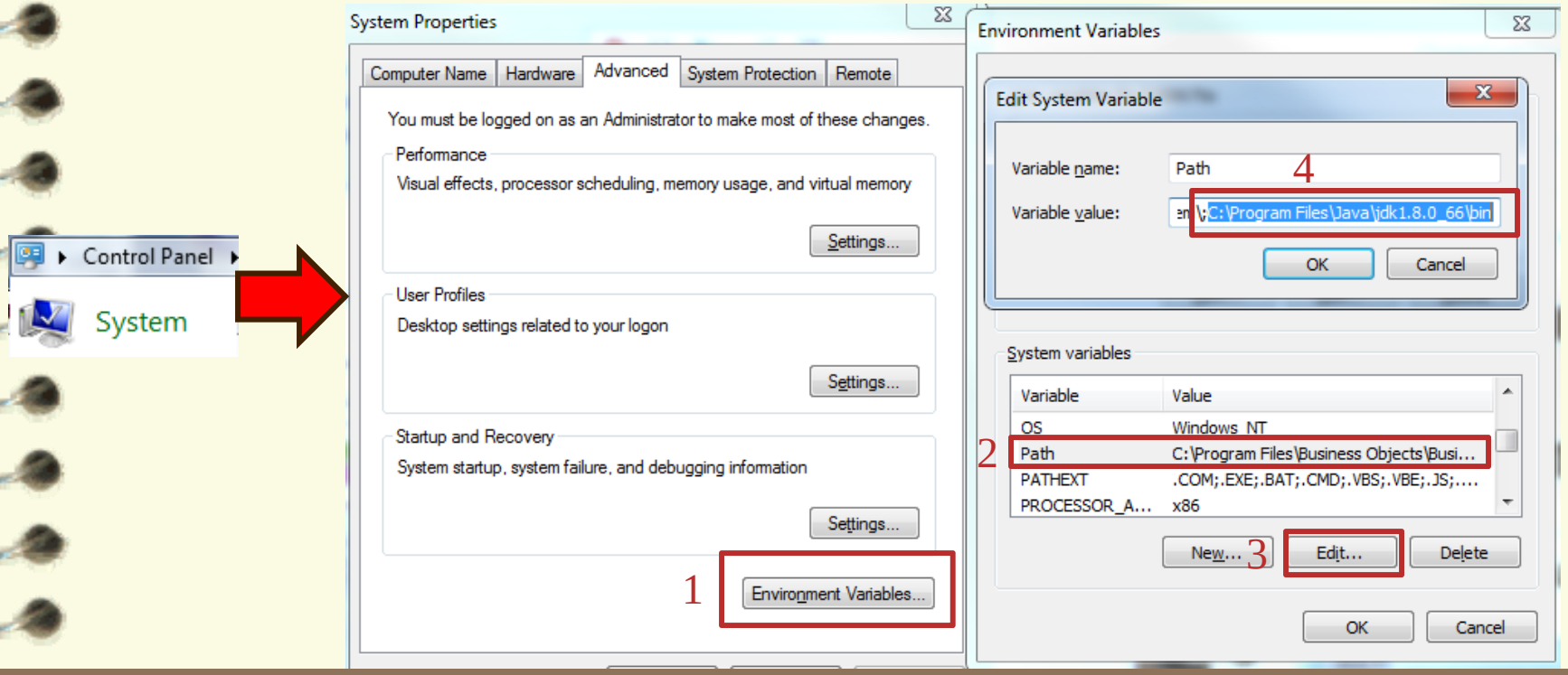
- The Java compiler called "**javac**" is in the following bin folder:

  C:\Program Files\Java\jdk1.8.0_66\bin

Java Development Kit (JDK) page 43

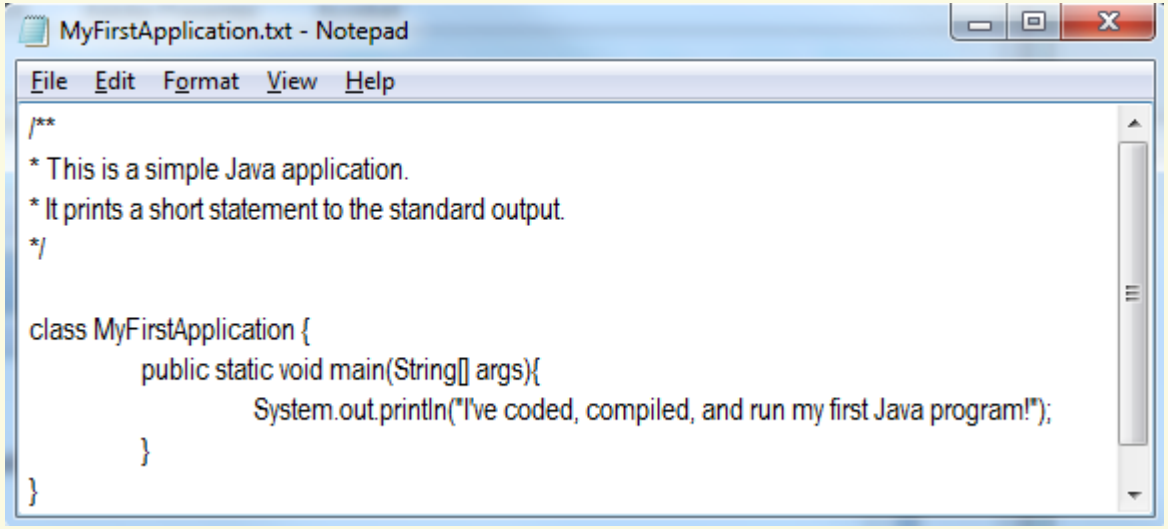
- Add the Java Compiler Path in the System Properties- Environment Variables- Path

C:\Program Files\Java\jdk1.8.0_66\bin



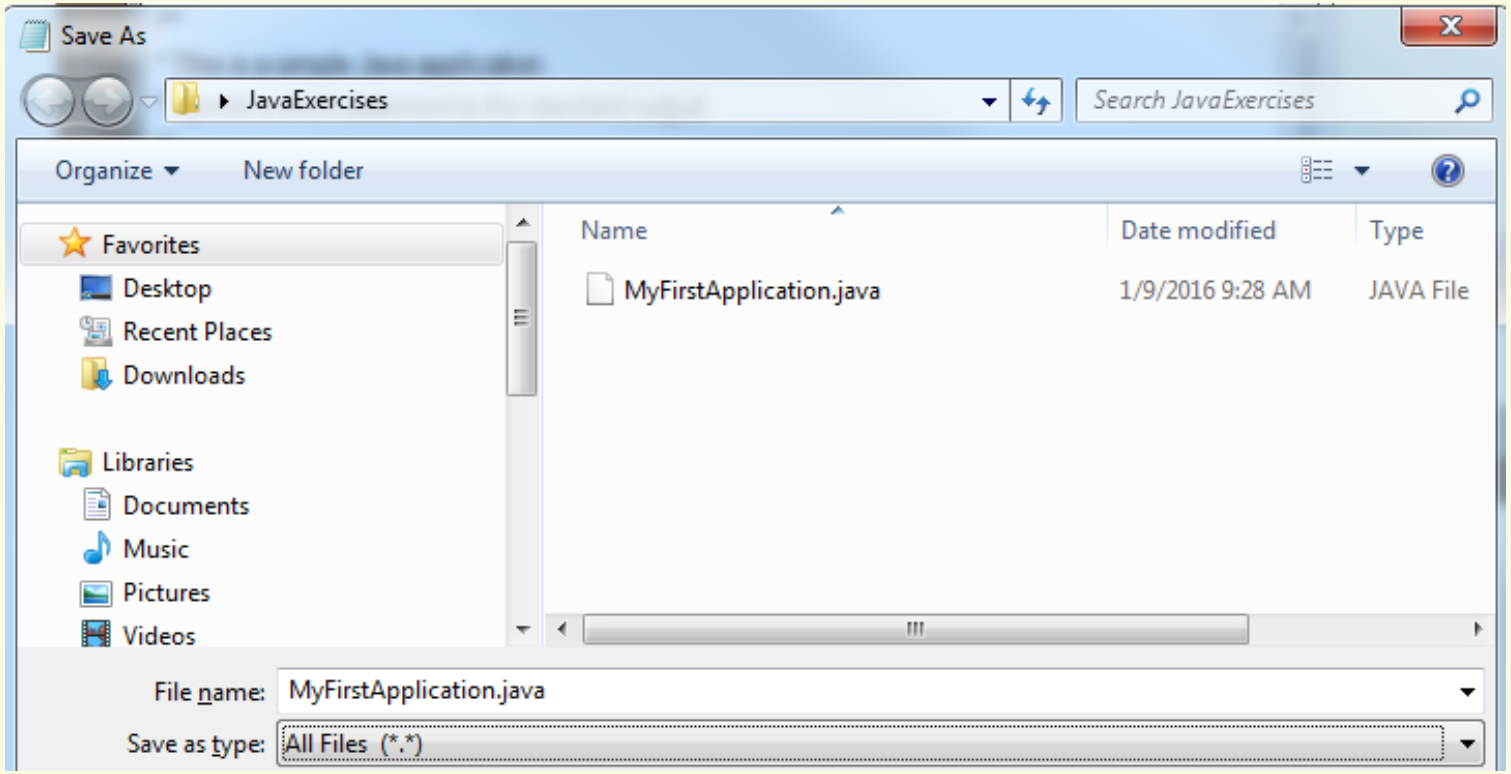
Coding in Text Editors page 43

- Once you installed JDK, you can write the code using a simple text editor like Notepad.
- Java code is case-sensitive, pay attention to upper and lowercase letters as you type your code.



Coding in Text Editors page 44

- Save the file with a **.java** file extension.



Coding in Text Editors page 44

- After the source code is written, use the Java compiler to translates it into machine-readable byte code.
- From the command prompt, to the folder:
- Enter: **javac** “MyFirstApplication.java”

Coding in Text Editors page 45

- After running javac, a newly compiled **.class** file is created

```
Directory of C:\Users\.Desktop\JavaExercises

01/09/2016  09:56 AM    <DIR>          .
01/09/2016  09:56 AM    <DIR>          ..
01/09/2016  09:56 AM               482 MyFirstApplication.class
01/09/2016  09:39 AM               260 MyFirstApplication.java
               2 File(s)            742 bytes
```

- To run the program, enter:

  java –cp . MyFirstApplication

```
Administrator: C:\WINDOWS\system32\cmd.exe

C:\Users\Desktop\JavaExercises>java -cp . MyFirstApplication
I've coded, compiled, and run my first Java program!
```

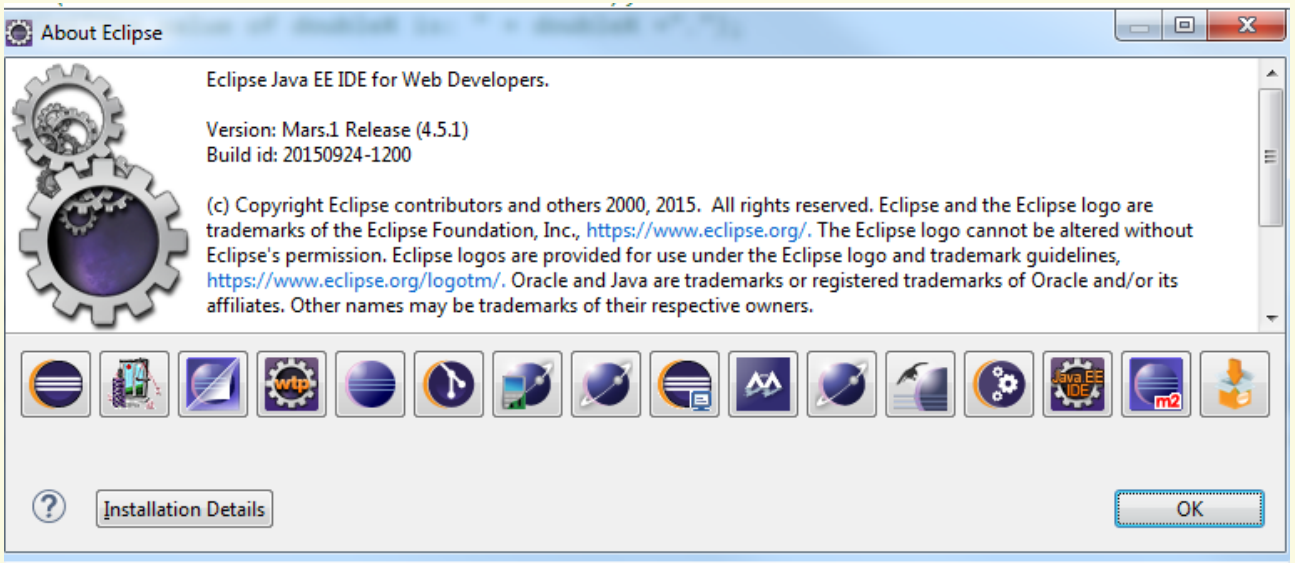
Choosing an IDE page 46

- IDEs offer many tools and conveniences compared to coding in text editors and compiling from the command line.

Eclipse | **NetBeans** | **IntelliJ IDEA**

Installing Eclipse on Your Computer page 48

- In order to program in Java, whether compiling code from your text editor or using IDE, you will need **JDK** installed.
- Latest version of Eclipse is Version Mar 1 Release (4.5.1)

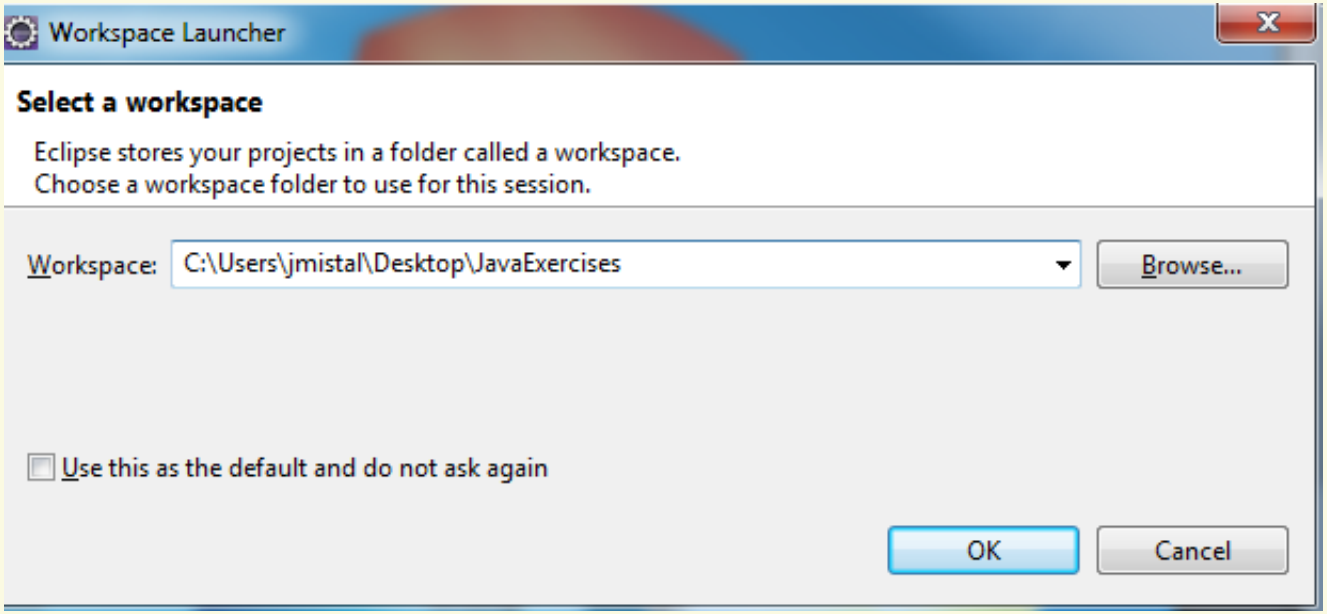


Installing Eclipse on Your Computer page 48

- **Eclipse 4.5.1** (Mars release) includes support for Java 8
- Eclipse can be downloaded from https://eclipse.org/downloads/
- For Comsc-51, install the version below:

Using Eclipse page 50

- When you launch Eclipse, it will ask where you want to store your **Workspace**
- This is the folder where all your projects are stored.

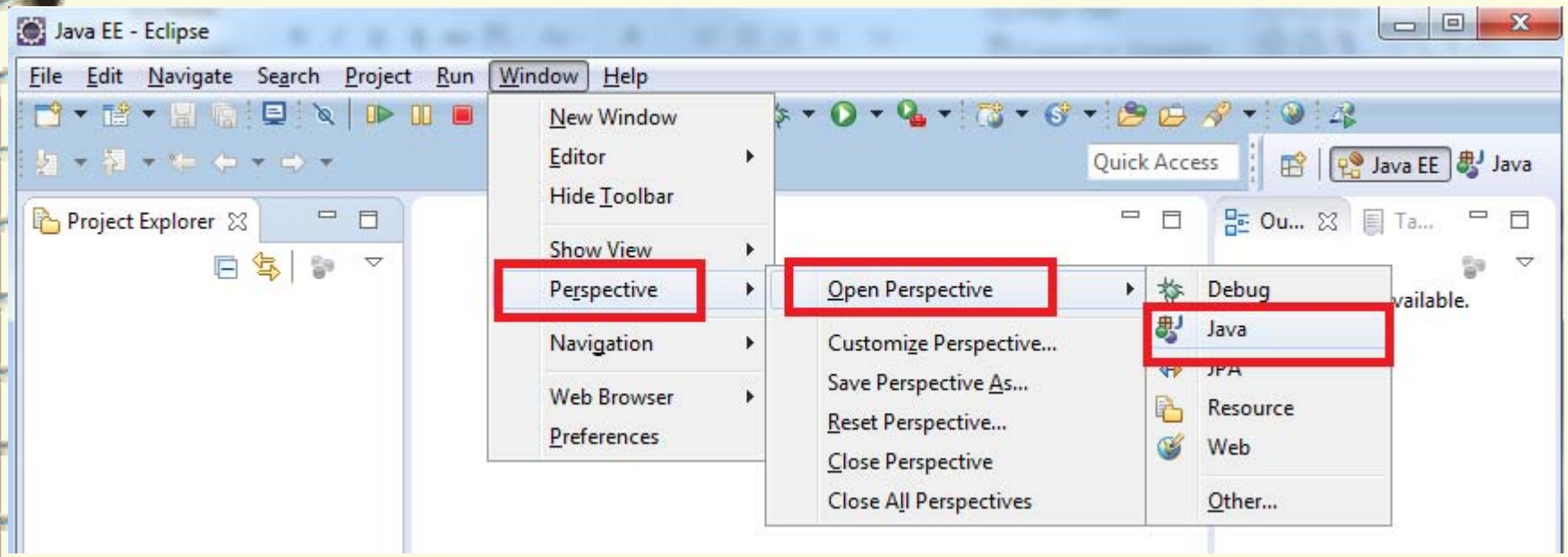


Using Eclipse page 50

- After you choose your workspace, Eclipse opens to the Welcome Screen
- Click on the X, to close the screen.

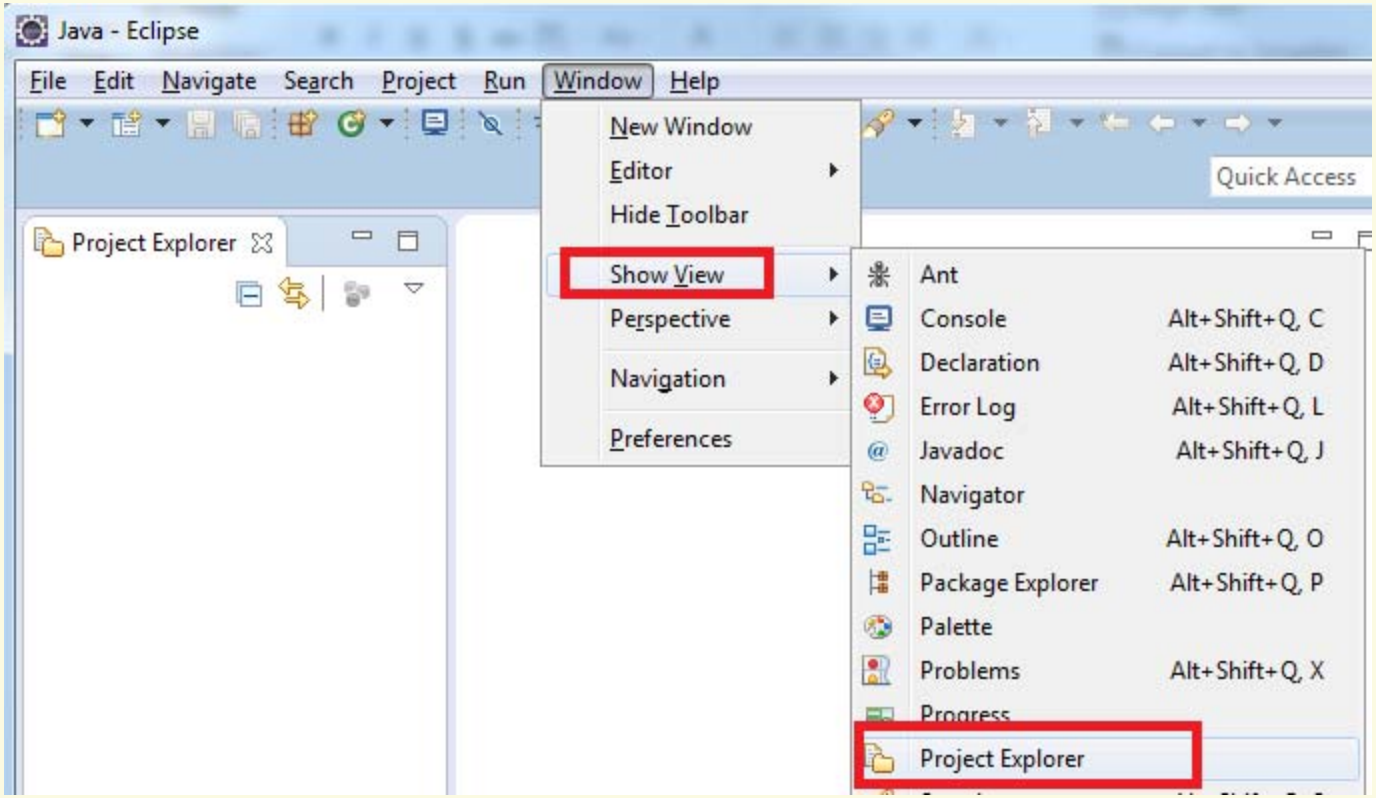
Using Eclipse page 50

- If you installed Eclipse Java EE IDE
- Change the Workbench Perspective to Java.



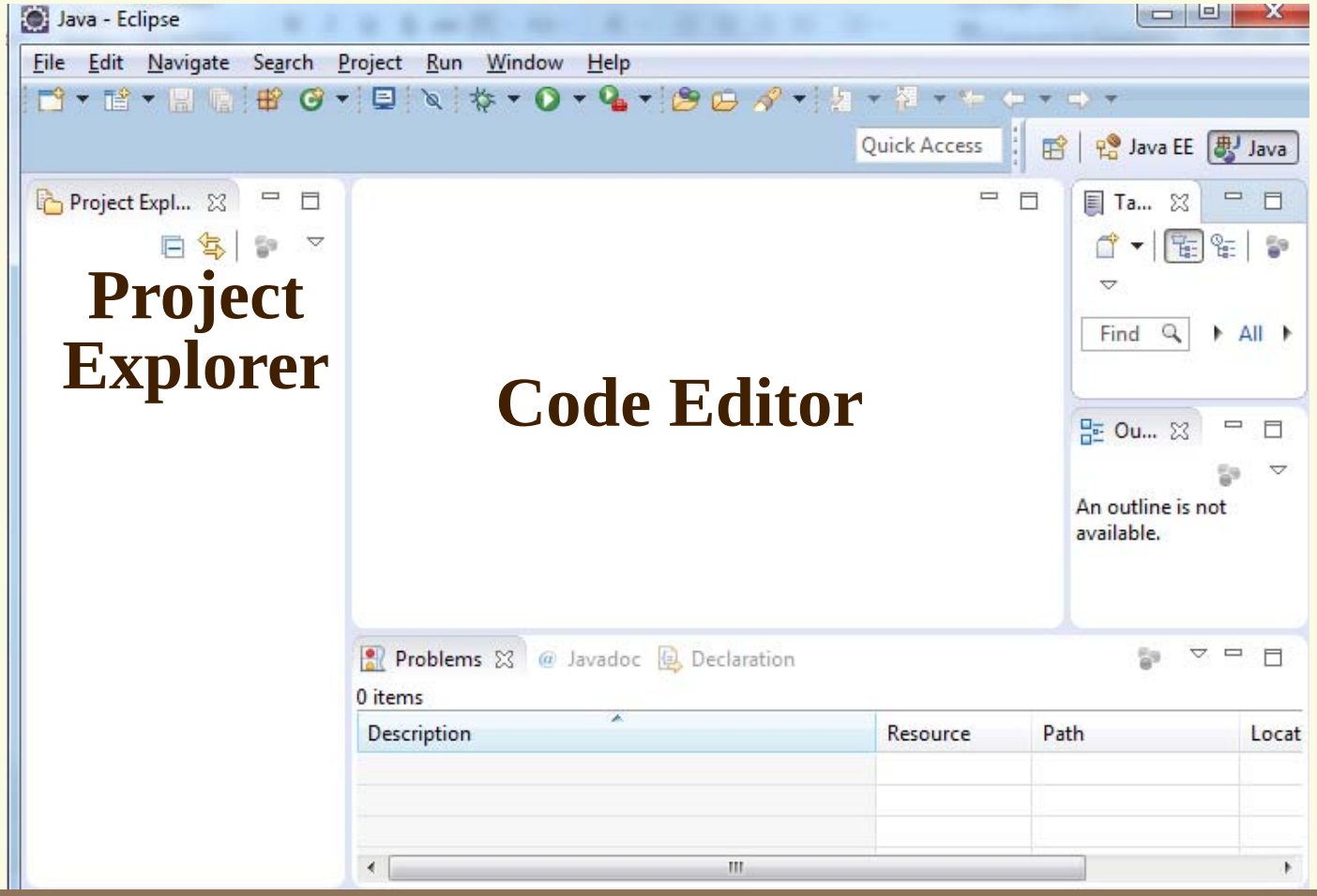
Using Eclipse page 50

- Eclipse Workbench- Using the Project Explorer



Using Eclipse page 50

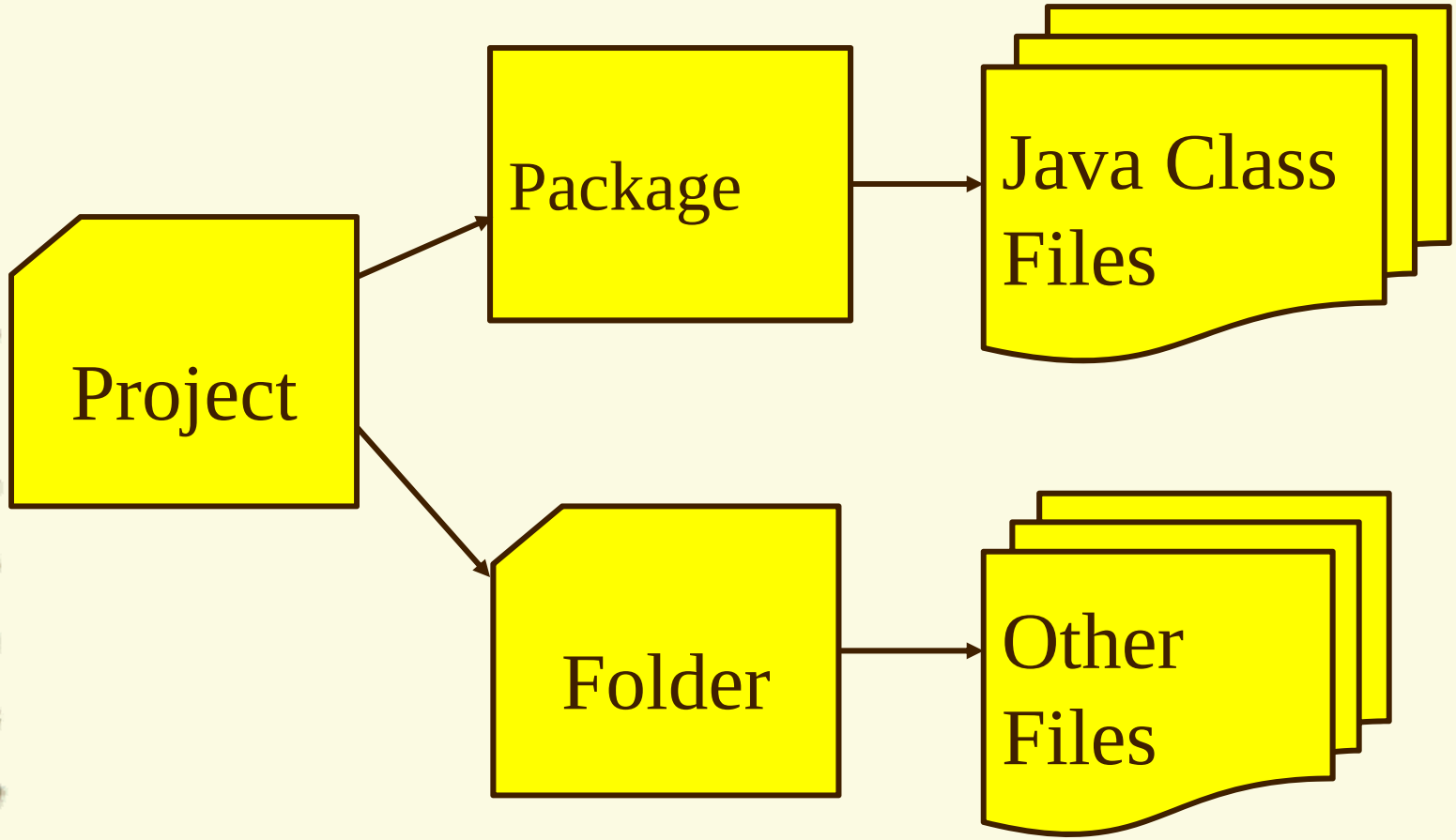
- Eclipse Workbench- Using Project Explorer View



Using Eclipse
Projects page 51

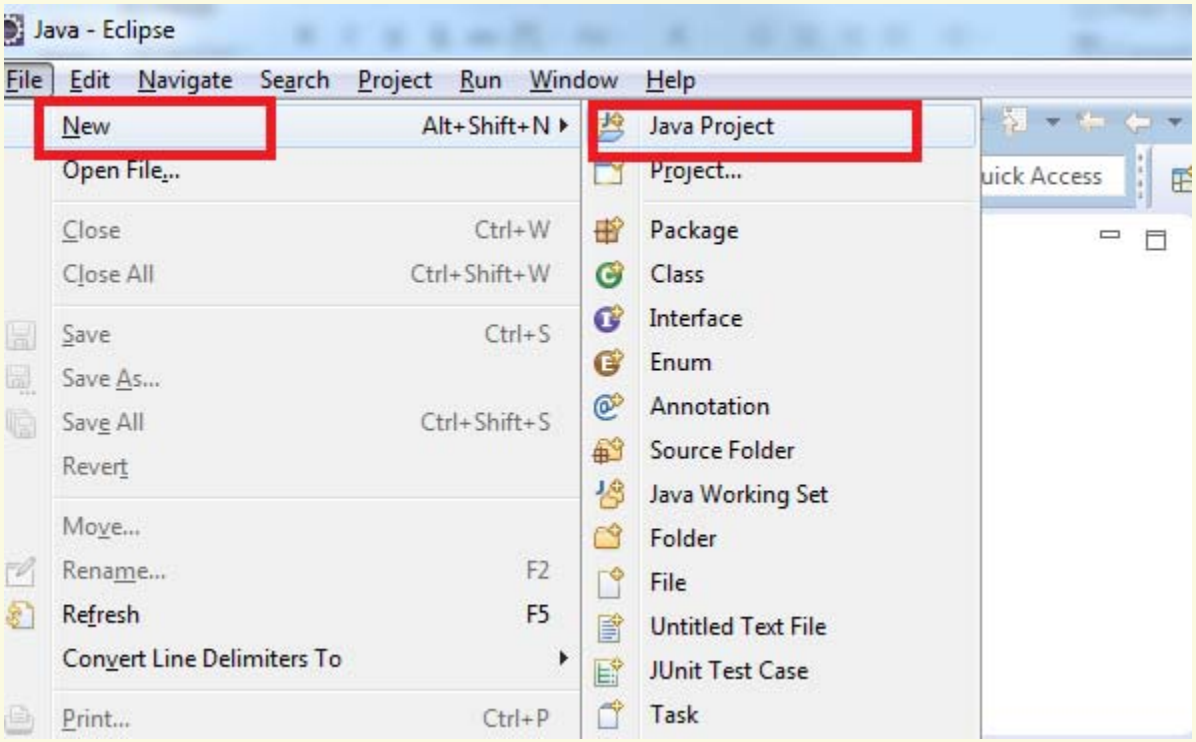
- Java programs are organized in a project hierarchy in Eclipse.
- You should use one project for each program you are working on.
- Projects are divided into packages that keep related Java classes together.
- Packages are a Java construct to organize your class files.
- Projects can also contain folders that can be used to store other non-class files (i.e. text or images)

Using Eclipse Project Explorer page 52



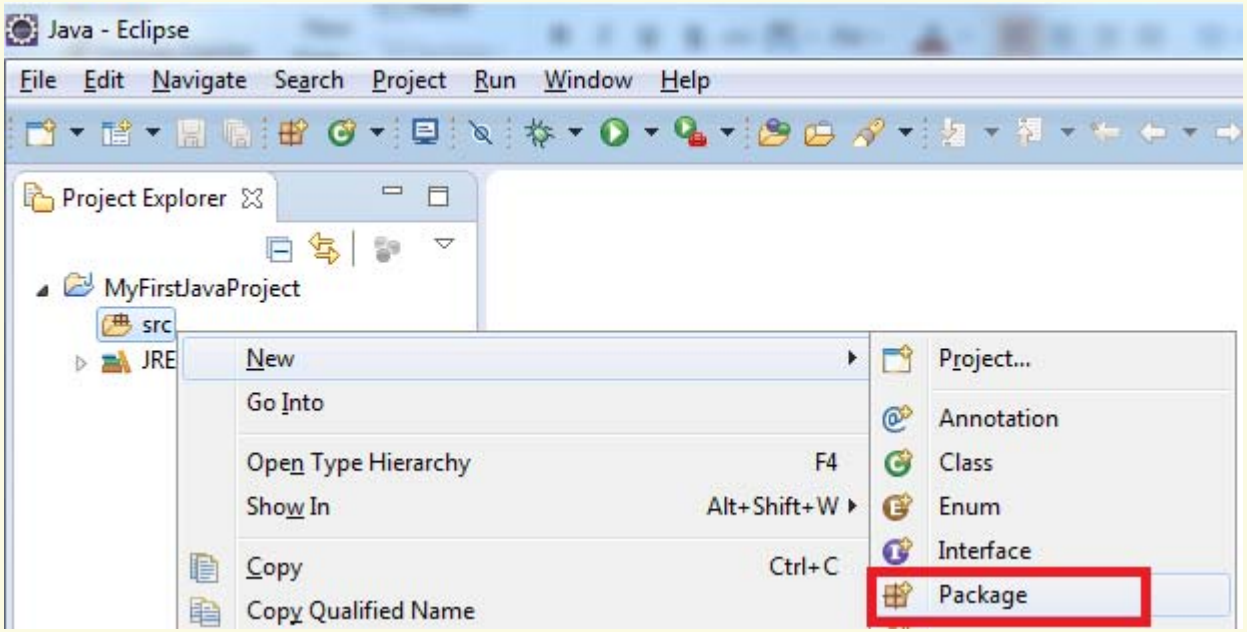
Creating Your First Java Application in Eclipse page 53

- Creating a new Project.



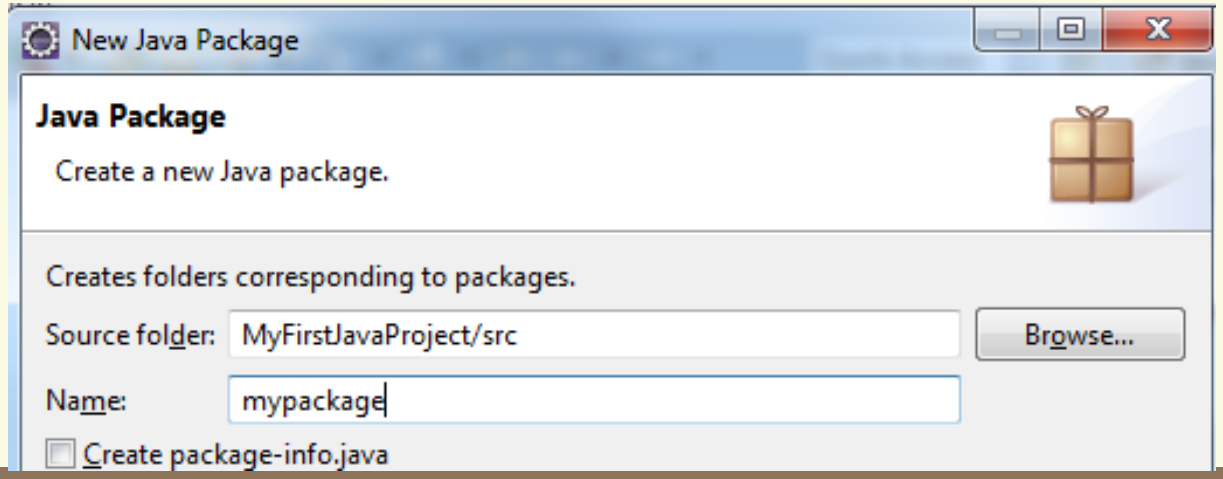
Creating Your First Java Application in Eclipse page 55

- Create a Package



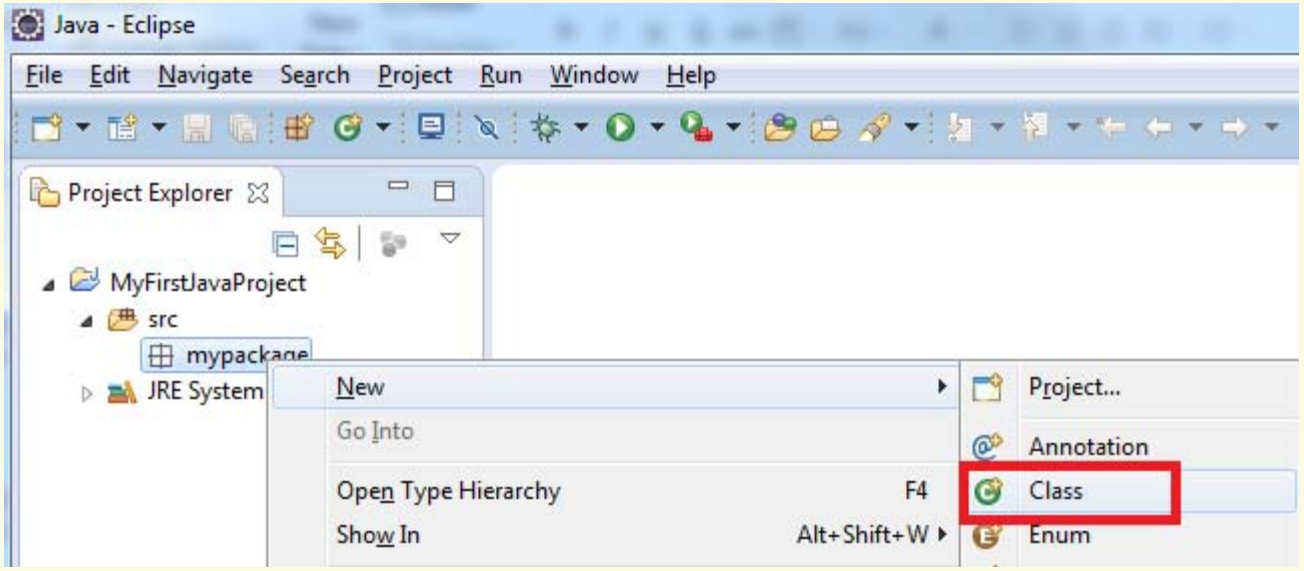
Creating Your First Java Application in Eclipse page 55

- Creating a Package is not necessary, as putting class files directly into the scr folder will place them in a default package.
- However using the default package is discouraged.
- As you develop larger programs, it will become more important to use packages.



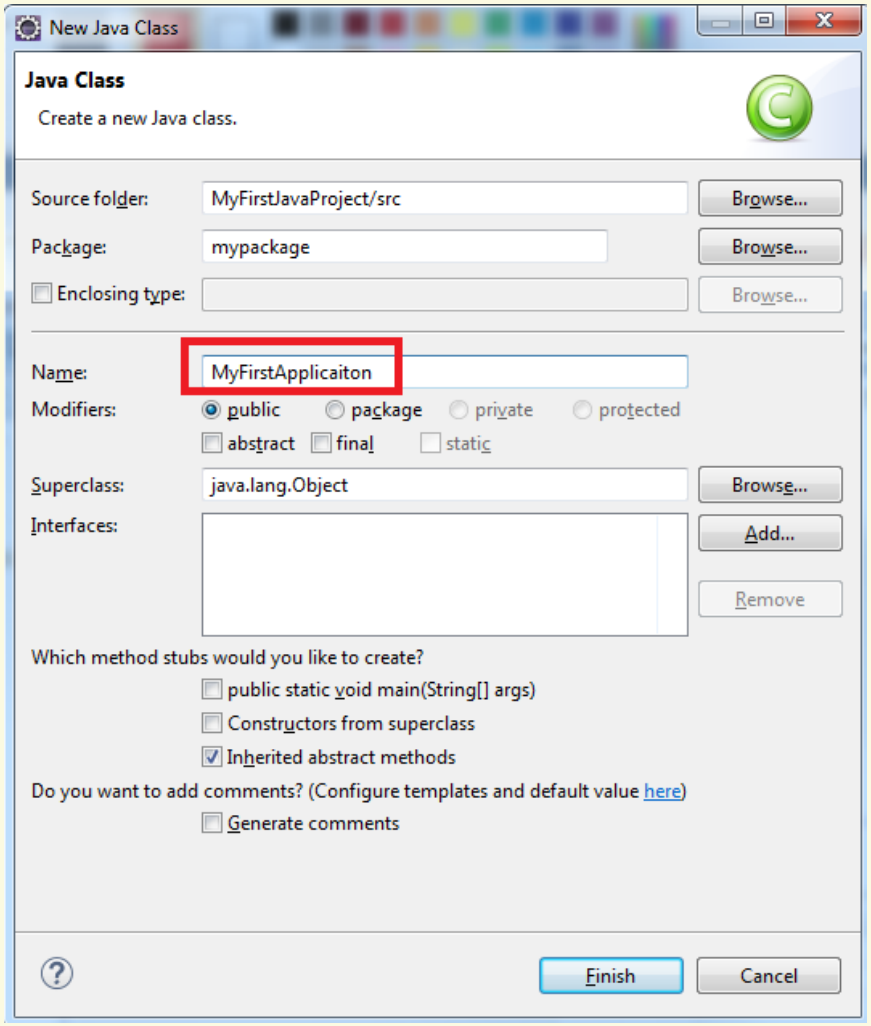
Creating Your First Java Application in Eclipse page 55

- Create a New Class



Creating Your First Java Application in Eclipse page 55

- Create a New Class



Creating Your First Java Application in Eclipse page 57

- Writing the Java Code and running the program

Java - MyFirstJavaProject/src/mypackage/MyFirstApplicaiton.java - Eclipse

File Edit Source Refactor Navigate Search Project Run Window Help

Project Ex...

MyFirstJavaProject
- src
  - mypackage
    - MyFirstAppli
- JRE System Library [.

MyFirstApplicaiton.java

Run MyFirstApplicaiton

```
1  package mypackage;
2
3  /**
4   * This is a simple Java application
5   * It prits a short statement to the standard output
6   *
7   */
8
9  public class MyFirstApplicaiton {
10     public static void main(String[] args){
11         System.out.println("I've coded, compiled and run my first Java Program!");
12     }
13
14 }
15
```

Problems @ Javadoc Declaration Console

```
<terminated> MyFirstApplicaiton [Java Application] C:\Program Files\Java\jre1.8.0_66\bin\javaw.exe (Jan 9, 2016, 3:42:05
I've coded, compiled and run my first Java Program!
```