Chapter #2: Your First Java Program using Eclipse
Objectives

- Learning how to Install Eclipse.
- Writing Your First Java Program.
- Understanding the Basics of Writing, Compiling and Running a Java Program.
Introducing the Need for Eclipse

- Computer programming is the process of writing computer programs.
- In this class, we will be writing programs in a high-level language.
- The high-level language that we will be adopting in this class is Java.
- We will be writing programs in an a tool called Eclipse.
- Eclipse is an Integrated Development Environment (IDE)
- An IDE is an environment (workspace) for software developers to write, compile, debug (finding and reducing the number of bug (errors)), and execute programs.
Installing Eclipse

- Introduction
- Part 1: Installing the Java Development Kit (JDK)
- Part 2: Installing the Eclipse IDE
- Additional Links for Installation Support
Introduction

• Eclipse is an IDE, Integrated Development Environment, where you can write and run Java Programs.

• In order to successfully install and run Eclipse you will need to fulfill the following requirements:
  • Possess a modern workstation with at least 2 GB of RAM
  • Have one of the following operating systems installed:
    • Linux, Windows 7/8/10, Mac OSX
  • Have the latest version of the Java Development Kit (JDK) installed on your device.
Part 1: Installing the JDK

• Click on the following link to download the latest version of the JDK: http://www.oracle.com/technetwork/java/javase/downloads/index.html

• You will see the latest version of the JDK on the top of the page, followed by previous version on the bottom.

• Download the latest version by clicking the “Download” button under the “JDK” icon.
Part 1: Installing the JDK

• On the next page, scroll down and select “Accept License Agreement” and choose the appropriate version of the JDK under “Java SE Development Kit”
  • For Windows users, select the Windows x86 (for 32-bit OS) or Windows x64 (for 64-bit OS) download link.
  • For Mac users, select the download link next to “Mac OSX.”
• Once the download is complete, click on the file and follow the instructions to complete your installation of the Java Development Kit.
Part 2: Installing the Eclipse IDE

• The Eclipse installer may be obtained from the following link:

• Before you scroll down, you will see an orange headline with a drop-down box to select your operating system. Select the appropriate option and the page will refresh.

• Scroll down to “Eclipse IDE for Java Developers”
  • For Windows users select the appropriate version, either 64 or 32 bit.
  • For Mac OS X users, simply scroll down and select “64 bit.”

• On the next page, click “Download.”
Part 2: Installing the Eclipse IDE

• The download file will be a .zip file. Extract its contents and be sure to remember where you have extracted the folder.

• Once you have extracted the files, click on the newly created folder and select the “eclipse” application.

• When you open the program for the first time you will be prompted with a request to create a workspace. This is where all of your Java files will be saved.

• You are now ready to begin writing your programs in Java.
Additional Links

• Windows
  • JDK Installation
    • https://www.youtube.com/watch?v=ZYuk9ogmms0
  • Eclipse Installation
    • https://www.youtube.com/watch?v=F3Sz3z-jhiM

• Mac
  • JDK Installation
    • https://www.youtube.com/watch?v=5Go7D6rIWxU
  • Eclipse Installation
    • https://www.youtube.com/watch?v=CL36-szyr1c
End of Installation Guide
The first line defines a **class**.
Every java program must have at least
One class.
Each class has name. The name of our class is “Welcome”
The name of the class that contain the main method
must match the name of the source file (Welcome.java)
By convention class names start with an uppercase letter.

The second line defines the **main** method. A java program is Executed from The main.
The main **method** is the entry point Where program Begin execution.
A method has a name (e.g main) And contains a set a statements.

```java
public class Welcome{
    public static void main(String[] args) {
        //display message Programming is Fun on the screen
        System.out.println(“Programming is Fun”);
    }
}
```

**Public, Static, void are** called reserved words
Each one of them has a specific meaning To the compiler. We will explain these words in details in a later chapter 😊

System.out.println is a Java a statement. System.out.println is a statement that instruct the computer to display a message in the console.
The message we will be displaying in the program is “programming is fun”.

Almost all statements in Java must end with a ;
public class HelloWorld {
    public static void main(String[] args) {
        System.out.println("Hello World");
    }
} // end class
Sample Program

```java
import java.util.Scanner; // a predefined Java library for keyboard input

class Welcome {
    public static void main(String[] args) {
        System.out.print("Enter User Name:"); // prompt for input
        Scanner input = new Scanner(System.in);
        // the next line declares a String variable named "nextName" and
        // makes the input scanner reads the string. (input.next())
        String nextName = input.next();
        System.out.println("Welcome to Java Programming, " + nextName + ", NYUuser!");
        input.close(); // closing the input Scanner
    }
}
```

Enter User Name: NVUuser
Welcome to Java Programming, NVUuser!
End of Chapter#2: Your First Java Program using Eclipse
More on Eclipse

Useful Resources on Installing Eclipse:

*Video tutorials:*

Installing jdk and eclipse on **windows**

- https://www.youtube.com/watch?v=ZYuk9ogmms0
- https://www.youtube.com/watch?v=F3Sz3z-jhiM

Installing jdk and eclipse on **Mac**

- https://www.youtube.com/watch?v=5Go7D6rIWxU
- https://www.youtube.com/watch?v=CL36-szyr1c

Installation Tutorial:


Check the video at the end of the tutorial.

Another useful tutorial:

http://www.cs.wustl.edu/~cytron/101Pages/f09/HelpDocs/Install/install.htm

Eclipse homepage:

- https://eclipse.org/

(notice on the right corner where you choose the download link based on your computer (Mac vs Windows)

Installation Guidelines:


Troubleshooting (in case Eclipse does not start)

http://www.eclipse.org/eclipse/development/readme_eclipse_4.5.html#I-General-Startup

Guidelines on Installing the pre-requisites on Java if you do not have it installed already on your machine (Source UC Berkeley):

https://ist.berkeley.edu/as-ag/technology/howto/install-java-sdk-win.html

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Questions