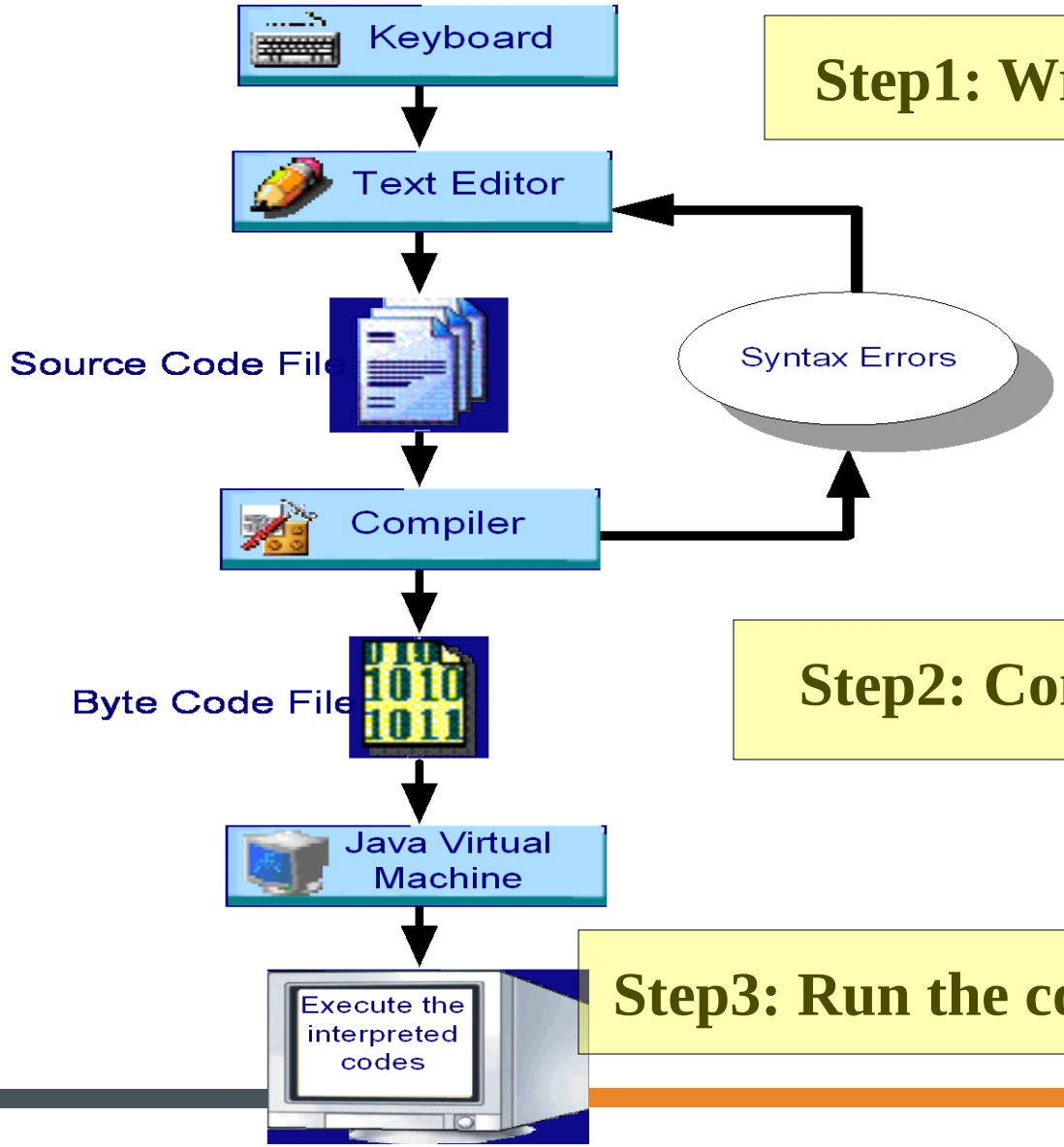


Step1: Write the Java source code

Step2: Compile the Java source code

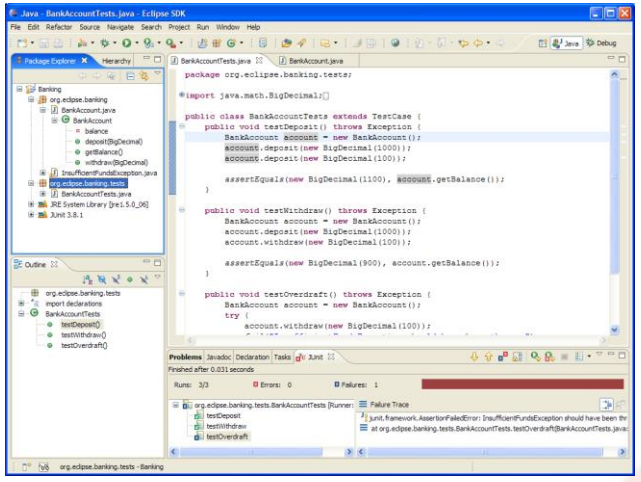
Step3: Run the compiled Java code or class file

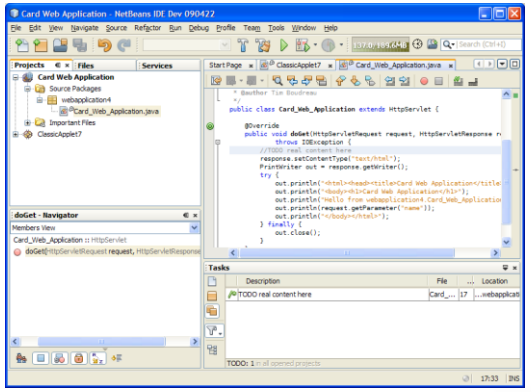
A Simple Java Program

```
//This program prints Welcome to Java!
public class Welcome {
  public static void main(String[] args) {
    System.out.println("Welcome to Java!");
  }
}
```

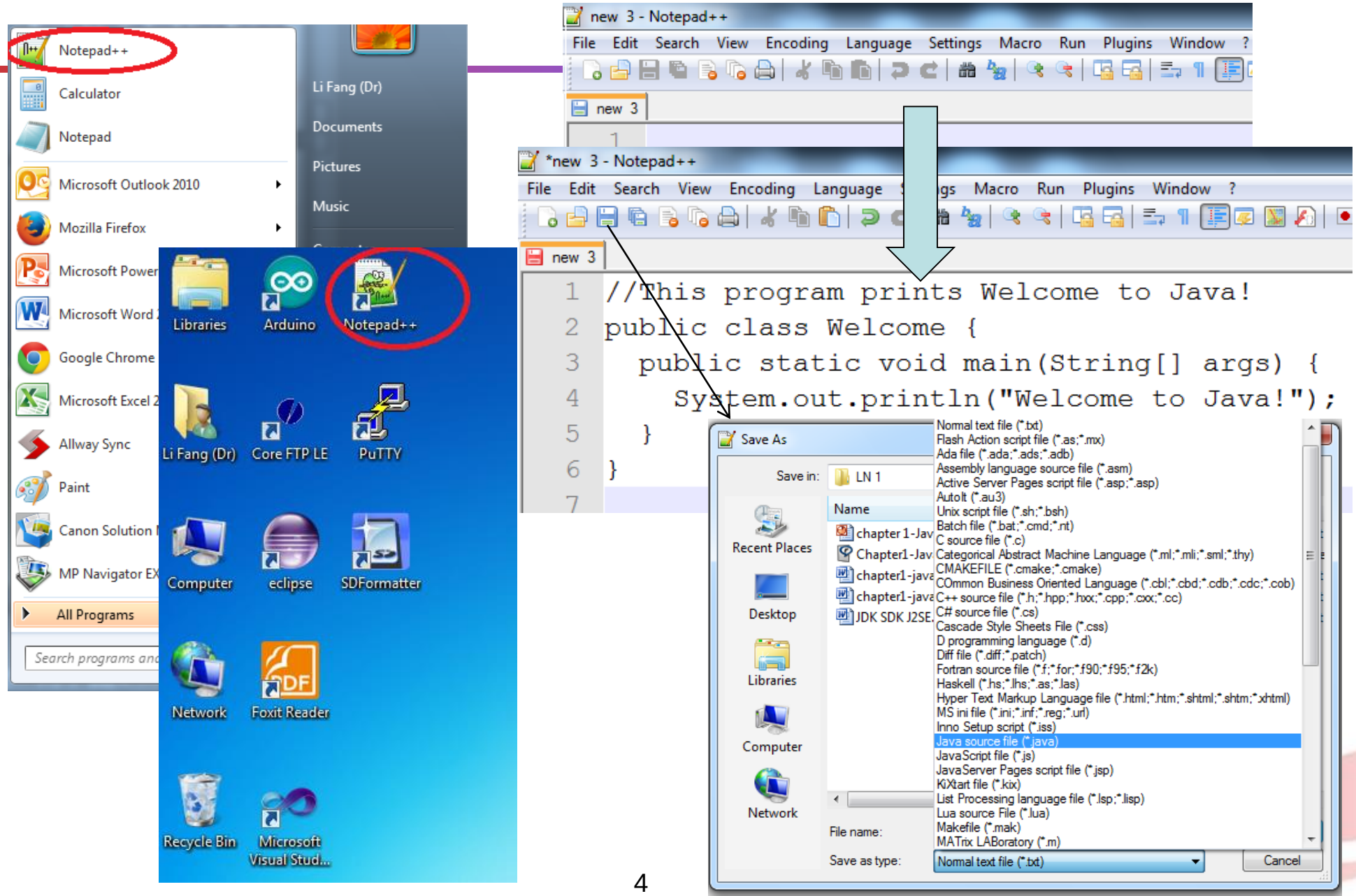
Java Development tools

- You can use a text editor, to create Java Programs and to compile and run the programs from the command windows.
- You can use a Java development tool
  - NetBeans, Eclipse
  - Integrated development environment(IDE)
  - quick, effective
  - Self-study tutorials
    - Java Fundamentals I- Introduction to NetBeans IDE, Part 1
    - https://www.youtube.com/watch?v=Hv2yvXTVTVo
    - Eclipse IDE Tutorial:
    - https://www.youtube.com/watch?v=23tAK5zdQ9c

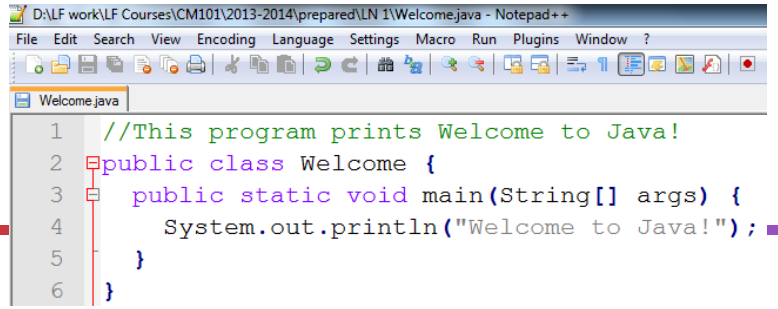




Step 1:Creating and Editing Using NotePad++



Creating, Compiling, and Running Programs

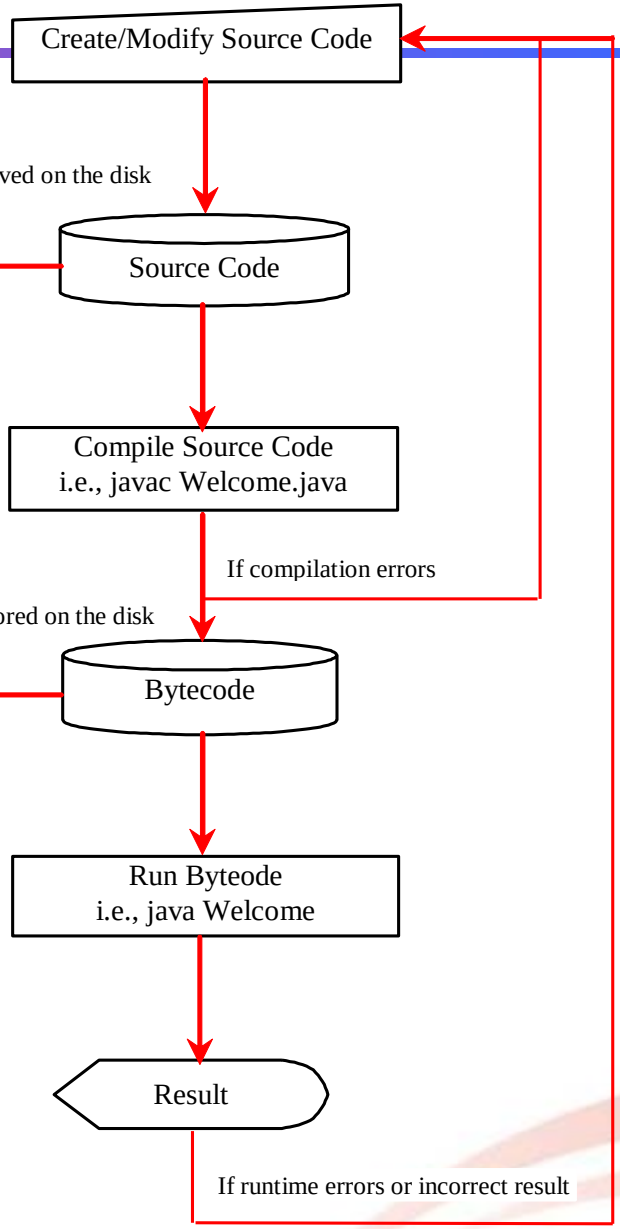


Source code (developed by the programmer)

```
public class Welcome {
  public static void main(String[] args) {
    System.out.println("Welcome to Java!");
  }
}
```

Byte code (generated by the compiler for JVM to read and interpret, not for you to understand)

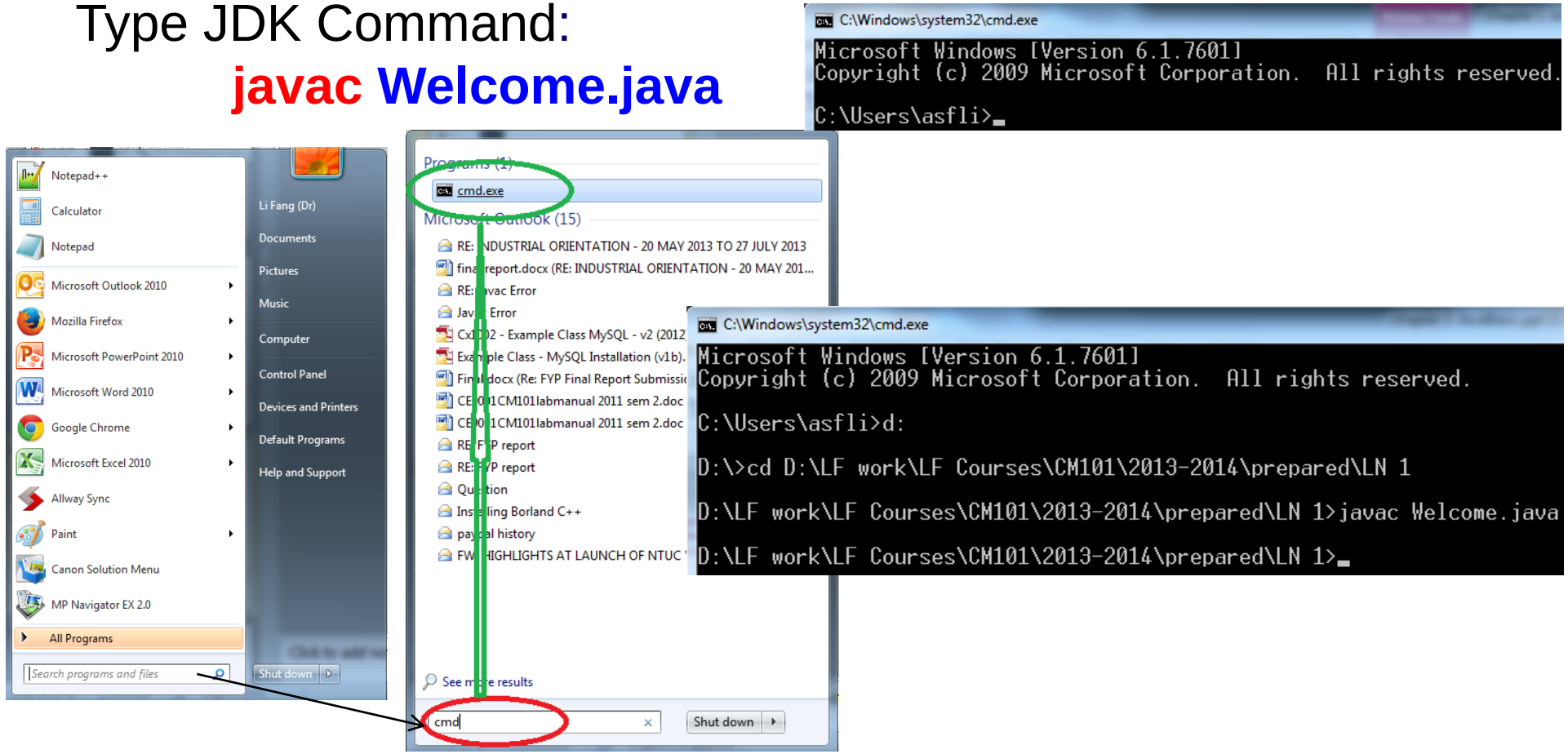
```
…
Method Welcome()
  0 aload_0
  …

Method void main(java.lang.String[])
  0 getstatic #2 …
  3 ldc #3 <String "Welcome to
Java!">
  5 invokevirtual #4 …
  8 return
```



Step 2: To compile your program

Type JDK Command:

javac Welcome.java



where javac is JDK Java compiler.

- Compiler translates the source program into Java bytecode.
- The compiler saves the bytecode into the file **Welcome.class.**

Step 3: To run the byte code with the Java interpreter

Successful compilation will create the bytecode class file: **Welcome**.class

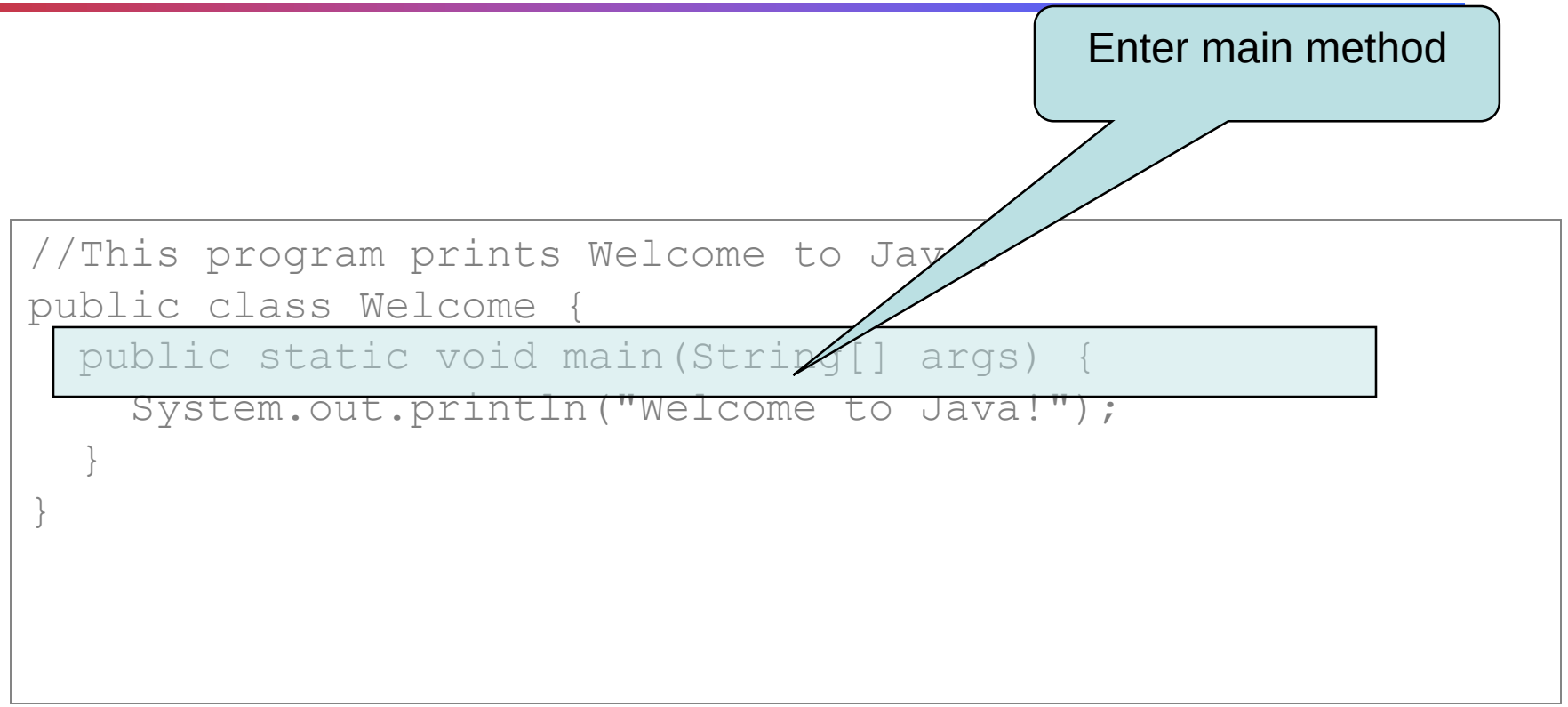
```
D:\LF work\LF Courses\CM101\2013-2014\prepared\LN 1>javac Welcome.java

D:\LF work\LF Courses\CM101\2013-2014\prepared\LN 1>dir
 Volume in drive D is DATA
 Volume Serial Number is 4844-CEB7

 Directory of D:\LF work\LF Courses\CM101\2013-2014\prepared\LN 1

01/09/2014  12:17 PM    <DIR>          .
01/09/2014  12:17 PM    <DIR>          ..
01/08/2014  08:59 PM         1,832,960 chapter 1-JavaBasic.ppt
01/06/2009  10:34 AM         3,067,954 Chapter1-Java is everywhere.flv
01/07/2009  11:19 AM            32,256 chapter1-javascript  LT.doc
01/06/2009  05:57 PM            36,864 chapter1-javascript.doc
01/09/2009  05:47 PM            41,984 JDK SDK J2SE.doc
01/09/2014  12:17 PM               424 Welcome.class
01/09/2014  12:06 PM               164 Welcome.java
               7 File(s)      5,012,606 bytes
               2 Dir(s)  322,681,405,440 bytes free

D:\LF work\LF Courses\CM101\2013-2014\prepared\LN 1>
```

Type JDK Command : **java Welcome**

- The class file (bytecode) is loaded into memory and interpreted by the Java Virtual Machine (JVM)

```
D:\LF work\LF Courses\CM101\2013-2014\prepared\LN 1>java Welcome
welcome to Java!

D:\LF work\LF Courses\CM101\2013-2014\prepared\LN 1>
```

Trace a Program Execution



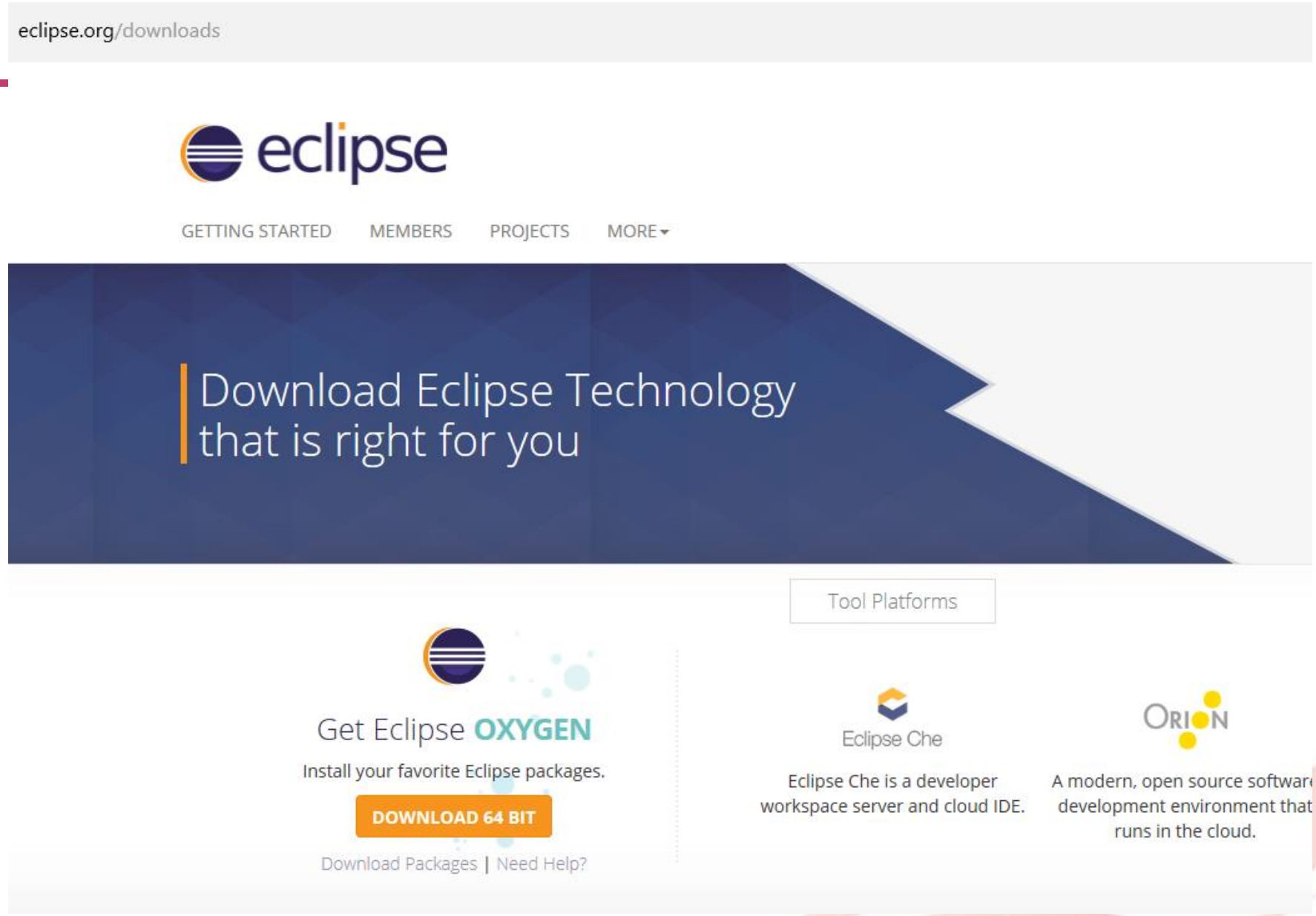
Trace a Program Execution

Execute statement

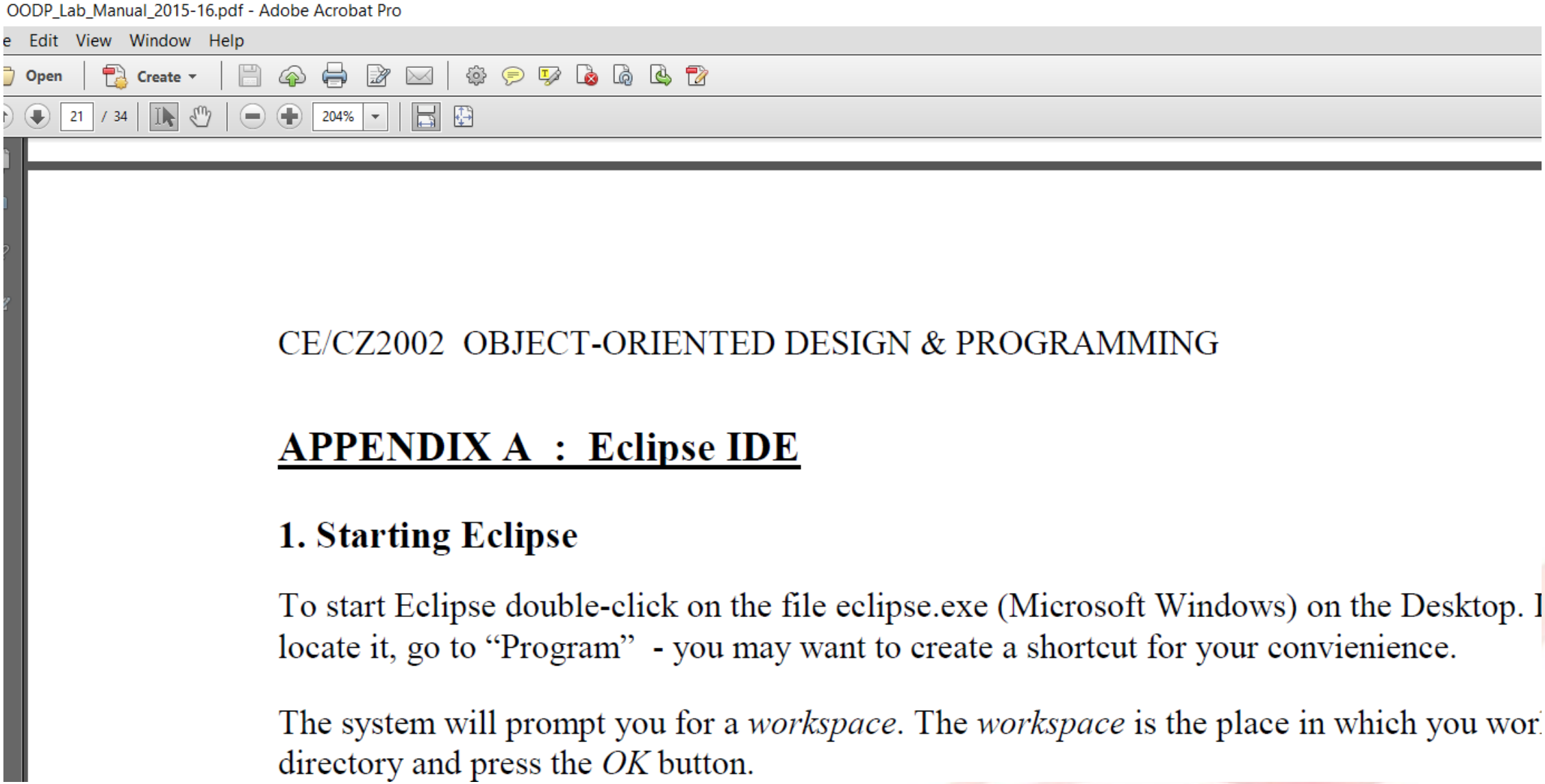
```
//This program prints Welcome to Java
public class Welcome {
  public static void main(String[] args) {
    System.out.println("Welcome to Java!");
  }
}
```

print a message to the console

Download eclipse



Eclipse IDE quick start



CE/CZ2002 OBJECT-ORIENTED DESIGN & PROGRAMMING

APPENDIX A : Eclipse IDE

1. Starting Eclipse

To start Eclipse double-click on the file eclipse.exe (Microsoft Windows) on the Desktop. I
locate it, go to "Program" - you may want to create a shortcut for your convienience.

The system will prompt you for a *workspace*. The *workspace* is the place in which you wor
directory and press the *OK* button.