

During the first part of the course, we will be using the command line to call an editor, invoke the Java compiler, and run the Java bytecode. So, we need to setup these features.

First, we will create three icons on your desktop that every power user should have:

- Computer icon
- Notepad icon
- Command icon

Then, we will download a better editor and the Java software. Finally, we will set up and test our programming environment.

Continued from Project 1a.

Task 5. Next, we need to prepare to install some software. We wish to understand where applications are loaded in the file system.

Click on the Computer icon, and select “OS (C:)”. This is your C drive, with is the main drive (the root of your file system).

Click on the Command icon, and type “dir”. The same files should be listed.

Among the things listed in the directory, you should see two subdirectories, “Program Files” and “Program Files (x86)”. Windows stores 64-bit applications under “Program Files”, and it stores 32-bit applications under “Program File (x86)”.

You almost certainly are using a 64-bit computer. To check this, right-click on the Computer icon, and select Properties. Under System Type, it will say 64-bit or 32-bit.

If you are using a 64-bit computer, you want to install 64-bit versions of software, when available.

Task 6. Now we need to install a slightly more sophisticated editor, and the Java compiler. The editor we will use (for now) is Notepad++. The Java compiler is contained in the Oracle Java Development Kit (JDK).

Use Windows Programs and Features application to remove any any previous version of Notepad++ you may have on your computer. Then, using a browser (preferably Firefox), go to the Notepad++ web page and download the 64-bit Installer (assuming you have a 64-bit operating system). Run the installer. Check under “Program Files” to see that a Notepad++ subdirectory was created. (The most recent version was 7.7.1 on July 8, 2019).

Use Windows Programs and Features application to remove any any previous version of Java, JDK, or Netbeans you may have on your computer. Then, in your browser, search for “Download JDK”. You should find an Oracle webpage which allows you to download Java SE (with JDK). You (annoyingly) must select a checkbox to agree to their terms before it will let you download it. Pick the **.exe**, it is the automatic installer. Run the installer. Go to the “Program Files” and find the “Java” subdirectory. Inside you should find a JDK subdirectory. The version number is part of the directory name. You will need this number soon. (The most recent version was 12.0.1 on July 8, 2019).

Task 7. A *batch file* is a collection of DOS commands stored in a text file, with the extension `.bat`.

- (a) Create a directory `C:/Gandalf`, except use your name instead of Gandalf (your name should have only letters and be capitalized).
- (b) Create subdirectories under Gandalf called `Greenfoot`, `Jdk`, and `NetBeans`.
- (c) Create a new text file `C:/Gandalf/JPrompt.bat`. Enter the following text into this file.

```
SET DIRCMD=/ogne
SET PATH=C:\Program Files (x86)\Notepad++;C:\Program Files\Java\jdk1.7.0_80\bin;%PATH%
COLOR 1E
CD C:\Gandalf\Jdk
CMD
```

- (d) Make an icon on your desktop which is a shortcut to `C:/Gandalf/JPrompt.bat`. Call this icon `JPrompt`. Click on this icon to open the command prompt.
- (e) At the command prompt, type `Notepad++ Hello.java`. This will open the Notepad++ editor and create a new file. This file will be the source code for your program. Keep the command window and the editor window open simultaneously.
- (d) Enter the source code for a class called `Hello` which has a main method which outputs "Hello, World!".

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

Save this program.

- (e) Move to the command window. At the command prompt, compile the program by issuing the command `javac Hello.java`. Type `dir` to see that the compiler made a file called `Hello.class`. Then run the program by issuing the command `java Hello`.

Task 8. Copy the `Hello.java` program into a file called `HelloArgs.java`.

Modify this new source file to list the command arguments, by inserting this line of code immediately after the opening brace of `main`.

```
if (args.length > 0)
{
    int k = 0;
    while (k < args.length)
    {
        System.out.println("args[" + k + "] = " + args[k]);
        k++;
    }
}
```

Task 9. Type, compile, and run the `FirstProgram` from the textbook.

Task 10. Type, compile, and run the `HappyFace` applet from the textbook.