Northeastern University
CS2500 – Software Installation
Fall 2023, Derbinsky & Hescott

Written Instructions / Windows

Install Java

You should do this even if you already have Java on your computer to ensure we all have the same version and setup.

1. Search the web for "oracle java" (direct URL: `https://www.oracle.com/java/technologies/downloads/`)
2. Download JDK17, "x64 MSI Installer"
3. Run the Installer
4. Once complete, open the Windows `Command Prompt`: search (lower left in Windows) for "cmd", enter
5. To verify Java is installed, enter: `java -version`
6. Close the command prompt by entering `exit` or clicking the "X" in the upper-right of the window

Now that Java is installed, we are ready to install Kotlin! Next page!

Install Kotlin

We will not only get the software, but make it easy for Windows to run.

1. Search the web for "kotlin compiler releases", we'll want the GitHub page for release v1.9.10 (direct URL: `https://github.com/JetBrains/kotlin/releases/tag/v1.9.10`)
2. Scroll down to the Assets section, download: `kotlin-compiler-1.9.10.zip`
3. Once downloaded, right-click on the file and select "Extract All..."; select a simple destination, such as `C:\`
4. Once extracted, open that folder, which is called "kotlinc"; open the "bin" folder
5. Click in the white section of the address bar and copy what you see, which should be something like `C:\kotlinc\bin`
6. In the Windows search box, type "environment"; click the "Environment Variables" button
7. In the top box, click on "Path" and then the "Edit..." button
8. In the next window, click on "New" and enter the copied location
9. Click OK to close all the settings windows
10. Open the command prompt
11. To confirm all this work is correct, enter `kotlin`, and then use `:quit` to exit that program
12. Close the terminal window

Now let's get the software to make our Kotlin code pretty :) Next page!

Install ktlint

1. Search the web for "ktlint", we'll want the GitHub page for release v0.50.0 (direct URL: `https://github.com/pinterest/ktlint/releases/tag/0.50.0`)
2. Scroll down to the Assets section, download two files:
   - `ktlint-0.50.0.zip`
   - `ktlint.bat`
3. "Extract All" from `ktlint-0.50.0.zip`, just like you did when installing Kotlin
4. Open the resulting folder and go to its "bin" folder
5. Select View >Check the box for "File name extensions"
6. Move (e.g., drag) `ktlint.bat` from the downloads to this `bin` folder
7. Click in the white section of the address bar and copy what you see, which should be something like `C:\ktlint-0.50.0\bin`
8. Reopen the environment variable settings, and add this new value to the `PATH` variable (like before)
9. ALSO, we need to create a new variable alltogether, named `JAR_PATH` (via the "New..." button on the "Environment Variables" window)
10. For variable value, paste the address and then add `\ktlint` – the result should look something like: `C:\ktlint-0.50.0\bin\ktlint`
11. Close the settings windows, reopen the command prompt
12. Enter: `ktlint`
13. If you get lots of scary-looking text you are all set, something like... (`[main] INFO com.pinterest.ktlint.cli.internal.KtlintCommandLine`)
14. Close the command prompt

Before continuing, we suggest you have a folder for all your work in this class (e.g., `cs2500`). Inside this folder, you could have sub-folders for each homework/project/etc. Next page!

Visual Studio Code

This is a code editor to make it easy to program in Kotlin (and other languages!).

1. Search the web for "visual studio code" (direct URL: `https://code.visualstudio.com`)
2. Click the big blue "Download" button
3. Once downloaded, run the resulting file folder to install; suggestions...
   - Add a Desktop icon
   - Add "Open with Code" to file context menu
4. Open your newly installed Visual Studio Code app
5. File > New Text File
6. Enter into the resulting file: `println("Hello, World!")`
7. Save it (via File > Save, or control + s) as `hello.main.kts`
8. Now install two useful "extensions" (via View > Extensions); for each search, then click install...
   - "Kotlin language" (makes kotlin files prettier)
   - "Terminal Here" (makes it easy to use a terminal for running/linting)
9. To run, access the "Command Palette" (View > Command Palette); search for & select "Terminal Here"
10. Enter to run your program: `kotlin hello.main.kts`
11. To check for formatting issues: `ktlint hello.main.kts`
    (And if you find mistakes, fix via `ktlint --format hello.main.kts`)
12. Pro tips for the terminal...
    - If you have recently typed a command, use the up/down arrow keys to cycle between recently used commands
    - When typing a command or file name, press `tab` to try and autocomplete
    - When locating a file that is not in your current folder/directory, `..` in a path means "go one folder up" (e.g., `..\khoury.jar` means find the khoury.jar file one folder up from where I am currently located)

Now let's make sure it's quick & easy to work on future files with Visual Studio Code – next page!

Configure Windows

1. Quit `Visual Studio Code`
2. In `Windows Explorer`, locate your `hello.main.kts` file from before
3. Double-click, choose "More applications"
4. Find and click on `Visual Studio Code` – keep the box selected to "Always" use it
5. You should see the message: "Restricted Mode is intended ..." – click "Manage"
6. Either click "Trust" (only helps this once), or "Add Folder" (you could specify your `cs2500` folder to always be trusted)
7. Close `Visual Studio Code`, double-click the file to make sure it's now trusted