Setting Up Programming Tools

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Precourse

Load these slides to open links and copy commands

```
https://fs-linguistics.github.io/precourse-schedule/
```

Make sure you download:

- ▶ ProgrammingTools.pdf
- ▶ PythonTest.py
- ▶ JavaTest.java

Installing Python

There are a few options:

- Pure Python [https://www.python.org/downloads/]
- Miniconda - good starter pack: python, few basic packages, tools to install further packages (conda, pip)
  [https://docs.conda.io/projects/miniconda/en/latest/]
- Anaconda - many, many tools useful for data science, including ML and NLP
  [https://www.anaconda.com/download]

There are different versions of Python, we will be installing version 3.11.

Installing Miniconda on macOS - Let's do a demo!

https://docs.conda.io/projects/miniconda/en/latest/

```
mkdir -p ~/miniconda3
curl https://repo.anaconda.com/miniconda/Miniconda3-latest-MacOSX-arm64.sh
-o ~/miniconda3/miniconda.sh
bash ~/miniconda3/miniconda.sh -b -u -p ~/miniconda3
rm -rf ~/miniconda3/miniconda.sh
```

Environment:

```
~/miniconda3/bin/conda init zsh
conda activate
conda deactivate
```

Installing Miniconda on Linux - It's basically identical.

https://docs.conda.io/projects/miniconda/en/latest/

```
mkdir -p ~/miniconda3
wget https://repo.anaconda.com/miniconda/Miniconda3-latest-Linux-x86_64.sh
-O ~/miniconda3/miniconda.sh
bash ~/miniconda3/miniconda.sh -b -u -p ~/miniconda3
rm -rf ~/miniconda3/miniconda.sh
```

Environment:

```
~/miniconda3/bin/conda init zsh
conda activate
conda deactivate
```

Installing Miniconda on Windows - Let's do a demo!

https://docs.conda.io/projects/miniconda/en/latest/

```
curl
https://repo.anaconda.com/miniconda/Miniconda3-latest-Windows-x86_64.exe
-o miniconda.exe

start /wait "" miniconda.exe /S

del miniconda.exe
```

Environment: Open app Anaconda Prompt

Installing Java

There are a few options:

- ▶ Pure Java
  [https://www.java.com/en/download/help/index_installing.html]
- ▶ JDK (Java Development Kit) - software for working with Java applications
  We will be installing Temurin by Adoptium [https://adoptium.net]

There are different versions of Java, we will be installing version 20.
"We need at least Version 11 of the JDK. Any newer version should also be fine."

Installing JDK on macOS/Linux - Let's do a demo!

Firstly, let's install brew - a general package installer:

https://brew.sh

```
/bin/bash -c "$(curl -fsSL
https://raw.githubusercontent.com/Homebrew/install/HEAD/install.sh)"
```

Then, let's install the JDK using brew:

```
brew install --cask temurin
```

With Linux, you can use your preferred package manager.

Installing JDK on Windows - Let's do a demo!

Install with an installer (.msi) from:
```
https:
//adoptium.net/en-GB/temurin/releases/?os=windows&version=20&package=jdk
```

Tools for programmers

- Text editors
  - Sublime Text
  - Visual Studio Code
- Integrated Development Environments (IDEs)
  - IntelliJ IDEA - Java
  - PyCharm - Python
  - Spyder - Python
- Notebooks
  - Jupyter notebook
  - JupyterLab
  - Google Collab

Visual Studio Code

https://code.visualstudio.com

- General source-code editor
- for Windows, Linux and macOS
- Support for debugging, syntax highlighting, intelligent code completion, snippets, code refactoring, and embedded Git.
- Theme, keyboard shortcuts, preferences, and install extensions that add functionality.

Let's turn VS Code into a more proper IDE for Python!

Download the extension:
`https://marketplace.visualstudio.com/items?itemName=ms-python.python`

1. Extensions settings
2. Set *Conda path* as your path to the miniconda3 folder
3. Set *Default Interpreter path* as your path to the miniconda3 folder
4. Check if you can run the PythonTest.py file.

`\Users\USERNAME\miniconda3 (macOS)`

`C:/Users/USERNAME/miniconda3 (Windows)`

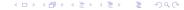# Let's turn VS Code into a more proper IDE for Java!

Download the extension:
`https://marketplace.visualstudio.com/items?itemName=vscjava.vscode-java-pack`

1. Check if you can run the JavaTest.java file.

IntelliJ IDEA - Educational License

https://www.jetbrains.com/community/education

For DSA II in the 2nd semester (or now if you prefer it)

Make sure you have Python installed

Make sure you have Java installed

Make sure you have VS Code (or other IDE) installed

If you have questions:
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https://chat.whatsapp.com/Djz1guUfBbx06rsRKQigfe