Quick Guide to install ANTLR4

CMP_SC 4450/7450 – Principles of Programming Languages

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ANLTR4 language support guide for homework and Project

- ANTLR4 supports writing your grammar with different programming languages. For your **homework**, you will use **Python3**.
- For your **project**, **we recommend Python3, but you can use different supported programming languages** such as Java, C#, etc.

OS Recommendation

- Installing and setting ANTLR4 is relatively easier on Linux (tested with Debian distributions, not other distros) and MacOS. Installing and Windows might require additional actions. However, you can use WSL for using Ubuntu on Windows. Please follow the instructions at:
  - https://github.com/antlr/antlr4/blob/master/doc/getting-started.md
- Another suggestion, we assume that you might have different Python projects on your machines. To prevent any dependency or library conflict, we recommend using Anaconda to install and set ANTLR in a virtual environment.
  - **Link to Anaconda:** https://docs.anaconda.com/free/anaconda/install/index.html

Getting Started with Python3 installation

- To install locally, use antlr4-tools, which installs Java and ANTLR if needed and creates `antlr4` and `antlr4-parse` executables:
  - `$ pip install antlr4-tools`
  - `$ pip install antlr4-python3-runtime`
- That command creates `antlr4` and `antlr4-parse` executables that, if necessary, will download and install Java 11 plus the latest ANTLR jar:
  - ```
    $ antlr4
    Downloading antlr4-4.13.1-complete.jar
    ANTLR tool needs Java to run; install Java JRE 11 yes/no (default yes)? y
    Installed Java in /Users/parrt/.jre/jdk-11.0.15+10-jre; remove that dir to uninstall
    ANTLR Parser Generator  Version 4.13.1
    -o ___              specify output directory where all output is generated
    -lib ___            specify location of grammars, tokens files
    ...
    ```
    ```

Additional Useful Links

- For Python3 supported ANTLR4. Follow the examples for testing.
  - https://github.com/antlr/antlr4/blob/master/doc/python-target.md
- ANTLR4 Python 3 Runtime
- https://pypi.org/project/antlr4-python3-runtime/