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“This is why I commit to Python and rely on it to help me succeed.”

Python has support for running programs on the school’s UNIX lab machines, as it usually is available with UNIX distributions. Python was also the programming language used in other Northwestern courses like Machine Learning, and code assignments were successfully graded on the school lab machines. To run Python from the command line of our laptops using a single command without code changes, the command is the python version followed by the name of the .py file that contains the Python code.

Python’s sys module supports UNIX-style STDIN and standard I/O using the sys.stdin object standard streams. Additionally, Python’s socket package can be imported to support socket programming that can establish both TCP and IP socket connections. This can be used to support networking features and client/server interactions.

The availability of existing examples for modules, functors, and packages support Python’s ability to implement modular programming. Code can be isolated into classes and functions for better organization and code structure.

Reading and writing JSON is supported by Python’s built-in json package. Once imported, Python dictionaries can be converted to json strings, and json.load allows data to be read in.

Loading code dynamically can be done using Python’s `__import__` method or the `imp` module which means we can import things without knowing beforehand which imports we will necessarily use later on. There is also documentation for the `imp` module that will be helpful in meeting this requirement.

For automatic testing and code coverage, Python tools such as Coverage.py can aid in checking code coverage. Furthermore, Python’s pytest framework and unittest library also provides additional support for automated unit testing and is well documented.

In terms of having an IDE with support for exploratory programming, Jupyter notebook has some versioning tools and allows for running specific code blocks in line. We can also use version control and IDEs like PyCharm or Sublime text to manage and write exploratory code without having to go through the long wait process of debugging after code is compiled and run.