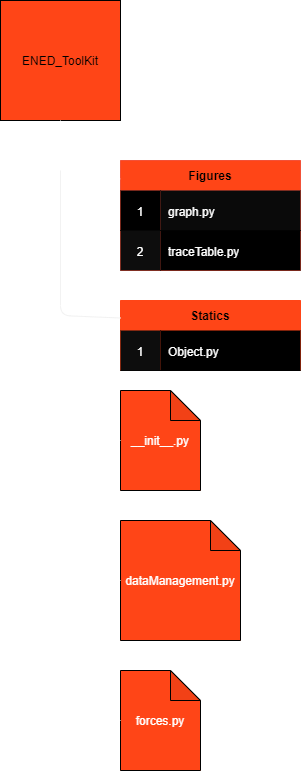
ENED\_ToolKit Syntax Guide



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**ABOUT ME:**

My name is Donald McFarland, but I tend to go by DJ, and I am currently an undergraduate student at UC. I am in the Chemical Engineering Program with the goal of eventually becoming a chemical engineer working in a pharmaceutical company specifically to combat type one diabetes. I want to help people with type one diabetes specifically because of a close friend of mine who has type one diabetes and his family struggles to get them. I hope through my efforts in the pharmaceutical field I will be able to make diabetes medication more available so that not only my friend but everyone who is affected by type one diabetes is able to have a reliable supply.

My experience in Python is mainly through self-taught methods as well as from the Python courses on the official Python site. I have been coding in Python since January of 2019 but I’m always continuing to learn new tricks and strategies for not only Python, but problem solving in general. This package is my first deliverable I have made for nonacademic purposes.

For developmental purposes I use PyCharm. PyCharm has optimizations designed for GitHub Repositories as well as virtual environments so that I can control what imports I use as well as their version so I can test my requirements. PyCharm also has a form of Intellisense that works with all the requirements and most of my own modules. It is also able to work with more than .py files, it also has built in capabilities to work with different file types like .csv files, .txt files, and .html files. For this package specifically, it is able to create templates for packages with a \_\_init\_\_.py files which helped speed along the development. Another useful feature of PyCharm is its ability to refactor through multiple files. This made it so I was able to change names of properties or methods without fear of syntax errors somewhere else in my package. Finally, PyCharm also has a built in Python Console which allows for testing imports, testing specific bits of code, and debug sections without having to run entire files of Python code.

The reason I made this package is to help my underclassmen who are taking the courses I took, as of the current Version, it is designed to help students with their ENED 1100, and ENED 1120 courses. I am by no mean perfect nor a professional Python programmer so expect bugs and glitches and some pieces of code not working as they should. If you run into these issues, please contact me so I can not only fix the issue but further my learning of computational tools. I also chose to do this project as part of my EEP project for my Spring 2021 Semester. The EEP program allows students who failed to secure a coop position due to the COVID-19 pandemic, like me, to get professional experience while at the same time developing the credential which will help them get hired for future coops and for future careers.

Thank you for downloading and using my ENED\_ToolKit. With this package, I hope you will be able to excel in your ENED courses. If there are some features this package is missing or issue that arise during the execution of the package or its modules, please email at [loomthie@gmail.com](mailto:loomthie@gmail.com). I wish you the best of luck in your college careers and hope that one day you all will be able to make a positive impact in the world like I hope to.

**GENERAL INFORMATION:**

As of version 0.3.1, ENED\_ToolKit is designed to assist with forces, displaying data in the form graphs, line charts, bar charts, and pie charts, showing the properties of data as well as a line of best fit when applicable, and finally tools to solve static equilibrium problems. This is done by using a mix of class objects and functions which will create objects or display graphs of inputted data to help students visualize what is going on with the data or forces.

This package and the module use a couple dependencies as well as some built in python libraries. The outside modules used for this package are, plotly, SymPy, and pandas:

From plotly, this package primarily focuses on the graph\_objects module and the subplot package. These imports allow for graphs to be shown through an internet browser with an element of interactivity.

SymPy allows for equations to be returned as objects instead of just functions. There is also a function that allows for differentiation which is used in the dataManagement module for determining rate of change.

Pandas allow for displaying data in the form of a data frame which helps users visualize the data through iterations. This package is meant to help show trace tables and output them into the console.

The math library is also imported into the script for some of the modules.