

Follow Along work in class for classes and modules:

The goal of today's class is to demonstrate how we can use classes to create flexible data types and use them in our program. In addition we'll look at how to create modules and packages and import them into our code. This means we have to work on several different files. One of these files will contain a datalogger class that allows you to log a string of data, one row at a time, while adding a date to it.

1. Create a new python file called `main_program.py`. This is where we'll be importing our custom modules from and it's the file containing most of our logic.
  - a. Create a function that gets user input (`def get_user_info()`)
  - b. It should return a student with (name and height)
  - c. Add logic in a main function to print the returned student's name
  - d. Make use of the `if __name__ == "main"` convention
2. In another file, maybe `Students.py`, create a `Student` class, that has a constructor that takes in name and major.
  - a. It should have a method to add all grades (which are a list)
  - b. It should have a method to add a single grade (a float)
  - c. It should have a method to compute the average grade and the letter grade
  - d. It should have a `__str__()` dunder method to print out the student's basic info: name and major
3. In another file, maybe `info_logger.py`, define a `Logger()` class that:
  - a. Has a constructor (`__init__(self filename)`) that takes in the name of the file that we want to log the data to
  - b. If this file name doesn't exist, create a new file
  - c. Define a `LogRow(self, data)` method that takes in a string, data and logs the data into the filename. It should automatically prepend the current time to the string. In addition it should append a new line to the end. Remember to append to file
4. In `main_program.py`, import both student and logger, and use them to improve the main program
5. Create a package called `info_utilities` that contains both `info_logger` and `Students`. This involves creating a folder with the package name and moving the modules into it. Then create a file called `__init__.py` and add code to initialize the package in there. This file can be blank but it needs to be present.