CMSE 202 - Midterm Study Guide

The following document is intended to provide you with a list of the types of tasks you may be asked to complete on your midterm exam for CMSE 202. The exam will be "open internet" so that you can look up documentation, python package installation instructions, etc. However, you will not be allowed to access your email or any other means of person-to-person communication (i.e. Slack).

For the midterm, you should be comfortable with:

- Creating or initializing a Git repository either locally or on GitHub
- Cloning a remote Git repository onto your computer
- Adding files to a repository and committing changes to a repository
- Pushing changes to a remote Git repository
- Downloading files from the internet using the command line or the equivalent commands within a Jupyter Notebook
- Reading and understanding the documentation for an unfamiliar Python package so that you can use the package to complete a task
- Installing a new Python package using `pip`
- Writing a new Python `class` (i.e. utilizing object-oriented programming)
- Making plots using matplotlib
- Using NumPy arrays

Some or all of these concepts may show up on the exam, so make sure you spend time reviewing the ones you're less comfortable with and don't hesitate to reach out on Slack to ask your fellow classmates or the instructors questions about things you don't understand.

If you're feeling uncertain about working with Python classes, you are encouraged to to review the following, well-written blog post:

https://jeffknupp.com/blog/2014/06/18/improve-your-python-python-classes-and-object-oriented-programming/

While the level of detail in that post goes beyond what might be expected of you on the exam, I encourage you to try creating and modifying the examples contained within it.

Final Note: If you're currently having any issues with your Python installation, your Git installation, or any other software related to the course, contact your instructor as soon as possible and explain the issue so that it can be addressed before the exam. You should also make certain that you can successfully log into jupyterhub.egr.msu.edu so that you can use it as a back up if something goes wrong during the exam.