Goals:

- Implement the various instructions supported by the MyPL VM;
- Practice using the instructions by writing two example programs.

Instructions:

1. Use the GitHub Classroom link (posted in Piazza) to copy the starter code into your own repository. Clone the repository in the directory where you will be working on the assignment.
2. For this assignment you should not need to copy any previous code into your repository.
3. Complete the implementation of the `VM` class in the given `mypl_vm.py` file.
4. Ensure your code passes the unit tests provided in `hw5_tests.py`.
5. Implement the two example programs using VM instructions in `test_p1.py` and `test_p2.py`.
6. Ensure your two example programs work correctly.
7. Create a short write up as a **pdf file** named `hw5-writeup.pdf`. For this assignment, your write up should provide a short description of any challenges and/or issues you faced in finishing the assignment and how you addressed them along with a brief description of how you tested your two example programs for correctness.
8. Submit your program by ensuring all of your code, test file, and writeup is pushed to your GitHub repo. You can verify that your work has been submitted via the GitHub page for your repo.

Additional Information: For this assignment, you do not need to write any additional tests. The "Evidence and Quality of Testing" points will be assigned based on your description of the tests you performed for the two example programs and whether your example programs work correctly. If your example programs do not work correctly, you will receive a score of 0/5 on the "Evidence and Quality of Testing" category.

Homework Submission and Grading. Your homework will be graded using the files you have pushed to your GitHub repository. Thus, you must ensure that all of the files needed to compile and run your code have been successfully pushed to your GitHub repo for the assignment. Note that this also includes your homework writeup. This homework assignment is worth a total of 40 points. The points will be allocated according to the following.

1. **Correct and Complete (30 points).** Your homework will be evaluated using a variety of different tests (for most assignments, via unit tests as well as test runs using specific input

files). Each failed test will result in a loss of 2 points. If 15 or more tests fail, but some tests pass, 6 points (out of the 30) will be awarded as partial credit. Note that all 30 points may be deducted if your code does not run, large portions of work are missing or incomplete (e.g., stubbed out), and/or the specified techniques, design, or instructions were not followed.

2. **Evidence and Quality of Testing (5 points).** For each assignment, you must provide additional tests that you used to ensure your program works correctly. Note that for most assignments, a specific set of tests will be requested. A score of 0 is given if no additional tests are provided, 1–4 points if the tests are only partially completed (e.g., missing tests) or the tests provided are of low quality, and 5 if the minimum number of tests are provided and are of sufficient quality.

3. **Clean Code (2 points).** In this class, "clean code" refers to consistent and proper code formatting (indentation, white space, new lines), use of appropriate comments throughout the code, no debugging output, no commented out code, meaningful variable names and helper functions (if allowed), and overall well-organized, efficient, and straightforward code that uses standard coding techniques. A score of 0 is given if there are major issues, 1 if there are minor issues, and 2 if the "cleanliness" of the code submitted is satisfactory for the assignment.

4. **Writeup (3 points).** Each assignment will require you to provide a small writeup addressing challenges you faced and how you addressed them as well as an explanation of the tests you developed. Additional items may also be requested depending on the assignment. Homework writeups do not need to be long, and instead, should be clear and concise. A score of 0 is given if no writeup is provided, 1 if parts are missing, and 2 if the writeup is satisfactory.