CS 261P Project #1: Cuckoo Hashing

In this project you are to implement 2 versions of Cuckoo Hashing.

Project Files:

You will need to download three files for this project. Download the lab1-files-2024.zip file using this **canvas** link.
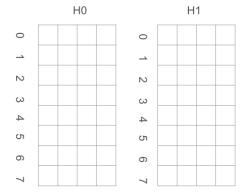
The zip file contains 4 files: cuckoo_hash.py, cuckoo_hash_24.py, project1_tests.py, and requirements.py.

Project Specification:

The specification for the project is given in the file requirements.py. Read it carefully and completely before starting the project.

The first project deliverable is the file **cuckoo_hash.py**, modified by replacing the code stubs of the required methods with working code.

The second project deliverable is a file **cuckoo_hash_24.py**. Details about this deliverable is in the requirements.py file. Information on the 2,4-cuckoo is in section 4.1 of this paper: https://www.cs.princeton.edu/~mfreed/docs/cuckoo-eurosys14.pdf Instead of what's shown in Figure 3, you can think about the set associative buckets like the following figure where each bucket has 4 entries.

Project Testing:

The file project1_tests.py contains a few tests that you can use to test your code. As stated there, these tests are just to get you started, and passing these tests does not mean that your code is correct. We strongly recommend that you create more tests, with varying table sizes, to test your code more completely.

You need to copy project1_tests.py to project1_tests_24.py and create your own test code for the 2,4-cuckoo hash. This file needs to be submitted.

Project submission

The project is to be submitted to GradeScope. Instructions for what to submit are in the file requirements.py.

Project due date/time

The project is due on **Friday, February 2, at 11:59 PM PST.**
Late projects will be penalized 2.5% for every hour the project is late, rounded up to the nearest hour.

Miscellaneous notes
The projects are to be done **individually** or in **pairs** (**no groups of more than 2 students**) and there should be one submission per group. Make sure to indicate all members of the group when submitting on Gradescope.

If you have questions about the project of general interest, the best way to ask your question is on the Ed Discussion message board.