Lab 2

- Assigned on Jan. 31
- Due midnight on Feb. 13 midnight (2 weeks)
- Implement and optimize the sequential blocked matrix multiply algorithm (still sequential code)
- Install and run ATLAS:
  - ATLAS: https://sourceforge.net/projects/math-atlas/files/
  - Take a look at Your_ATLAS_DIR/BUILD_DIR/bin/INSTALL_LOG/dPerfSumm.txt //first two lines
- **`Requirement:`**
  - Use loop unrolling and try to tune #iterations to unroll
  - Tune the block size
  - Use register blocking
  - Plot: x-axis: 64, 128, 256, 512, **1024**, 2048
  - Compare it with your fastest naive version, and ATLAS's performance based on dPerfSumm.txt
  - Discuss the effect of block size (with a figure or table)
  - Discuss the effect of unrolling (with a figure or table)
  - If you know other optimization techniques, try them to see if you can make it better
    - The goal is to achieve the peak performance of the hardware
- I expect to compare your performances using **N=1024**
- Submit a technical report and source code and Makefile by the due time.
  - You don't need to submit your presentation slides to Canvas.