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#####
# CS:APP Performance Lab
# Directions to Instructors
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```

This directory contains the files that you will need to run the CS:APP Performance Lab, which develops the students's understanding of the performance impact of caches and code optimizations such as blocking and loop unrolling.

1. Overview

In this lab, students work on a C file, called `kernels.c`, that contains some image processing kernels. The students are asked to use the concepts they have learned in class to make these kernels run as fast as possible.

Students evaluate the performance of their kernels by linking `kernels.c` into a driver program called `driver.c`. Students can register different versions of their kernel functions with the driver. When the driver runs, it will execute, measure, and report on the performance of each registered function. This is a very useful versioning feature that allows students try out different approaches and do side by side comparisons.

You should strongly encourage your students to take advantage of this versioning feature in the driver.

2. Files

Makefile	Builds the entire lab
README	This file
src/	Driver code that runs and measures solutions
perflab-handout/	Handout directory that goes to the students
grade/	Autograder code
writeup/	Sample Latex lab writeup

3. Building the Lab

To build the lab, modify the Latex lab writeup in `./writeup/perflab.tex` for your environment. Then type the following in the current directory:

```
unix> make clean
unix> make
```

The Makefile generates the driver code, formats the lab writeup, and then copies the driver code to the perflab-handout directory. Finally, it builds a tarfile of the perflab-handout directory (in perflab-handout.tar) which you can distribute to students. The command:

```
unix> make dist DEST=<DIR>
```

will copy the tarfile and copies of the writeup to directory <DIR>, where the students can access it.

4. Autograding the Lab

There is an autograding script that automatically grades the lab. See ./grade/README for instructions.