Assignment 3, due March 29th 2019

Resources (in GitHub repository):

- `week_02/matrix_mul`
  Includes solution using convenience header `cl_utils.h` – can be used!

Assignment:

- Extend the sequential and OpenMP implementations with a computation of the MFLOPs (million floating point operations per second) achieved for the matrix-matrix multiplication (Hint: number of operations can be computed analytically from the input data)
- Extend the OpenCL implementation with performance measurements of all data transfers and the kernel execution using the profiling system presented in the lecture.
- Determine the data transfer rate between host and device (both directions!) as well as the MFLOPs achieved by the kernel, depending on the problem size and a given hardware architecture.

Hints:

- For profiling:
  - do not forget to create the command queue with `CL_QUEUE_PROFILING_ENABLE`
  - one event per relevant action
  - get performance data with `clGetEventProfilingInfo`

Goal:

- Collection of performance data for sequential, OpenMP, and OpenCL implementations, documented in PDF as usual

Solution upload:

- Via e-mail to philipp.gschwandtner@uibk.ac.at – one submission per group only!
  Subject: `“[PS703106] [AS03] GR_## - NAME1, NAME2, NAME3”`
  Solution must be submitted before Friday 09:15!