SIT315 M3.S3P: Distributed Computing - OpenCl

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No Group

Activity 1 – OpenCL Terminology

1. Host: The host is like the master node in an MPI program, it orchestrates the overall application and sends and receives data from the \_\_global scope, as well as managing the kernels.
2. Device: These are the pieces of hardware that run the computation, but it is still not very low level as there are cores and threads within. Some examples are GPUs, CPUs, and FPGAs. They are instructed what to do with a command queue telling them specific actions to take like running kernels or accessing memory.
3. Compute Unit: This is like a core in a device, it can contain multiple processing elements which are like threads which execute work items. These work items are contained within a work group, sort of like a chunk like in previous parallel computing tasks.
4. Processing Elements: These are like individual threads that execute work items.
5. Context: This is like scope in a standard program, it sets the shared memory, devices that share that memory and command queues.
6. Command Queue: An object that contains instructions/commands for execution on a device.
7. Host Program: This is the program that runs on the host device which is usually a CPU, it orchestrates the OpenCL program similar to the master node in MPI.
8. Program Kernel: This is the core logic of code execution. It is a function to be executed on a device that usually instructs some sort of SIMD action on one part of a large bit of shared data.