

**Assignment:**

We provided a simple C++ code that performs vector addition. Please modify it step by step as below:

Task 1: Compile and run the code and observe the primary results

Task 2: Add device selector to the code and then check which device is selected. Try to select GPU, FPGA, CPU, Host, and default.

Task 3: By using Queue and Buffer, dispatch the kernel to a device. Try `single_task` and `parallel_for` for dispatching. Do not use any synchronization to observe what the results would look like.

Task 4: Use any arbitrary synchronization technique. Try `wait()`, host accessor, and C++ scope. Now compare the results with the previous task.

Task 5: Add profiling part to your code to see the kernel execution time. Compare the kernel execution time for different devices.