PRACTICE 3 - OPENCL

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Nicolás González Munar
nicogonzamu@gmail.com
43475233N

User Manual

This console applications is very simple to use. First of all, the application will search all the platforms and devices installed on the computer and display them with its respectives IDs.

Then the user will be ask to introduce de ID of the platform that he wants to use and after that, the device ID. The application will check if the device and platform selected are related.

After that, only one more interaction is required: the user will be asked the length of the array that he wants to sort. Only powers of two are supported, so application will check if a power of two is introduced.

Then the array is created, as it does the context and all of the environment. The application will show the array as it is created, and the sorted one when finished, as well as the process and buffer read/write times.

Conclusions

This was, as I see it, the most interesting practice on this course. We were introduced in a new field, the real parallel computation, and we also learned about Bitonic sort, another *n log(n)* sorting method that, at least I didn't know about.

To solve this practice, I used essentially the OpenCL slides that were bring to us, and also the wikipedia page about Bitonic Sort. The diagram that appears on it was very helpful to build the kernel (in fact, all the idea with the algorithm is based on recreate that diagram as you can tell when looking the comments on the code). I also needed a lot of paper and pen to recreate what was going on!