

Summary

- Investigate CUDA
- Implementing a parallel GPGPU merge sort algorithm

Process

- **Step Zero:** Learn about CUDA and GPGPU
- **Step One:** Install the CUDA SDK and driver
- **Step Two:** Integrate the CUDA SDK into Visual Studio 2008
- **Step Three:** Port merge sort to the CUDA architecture

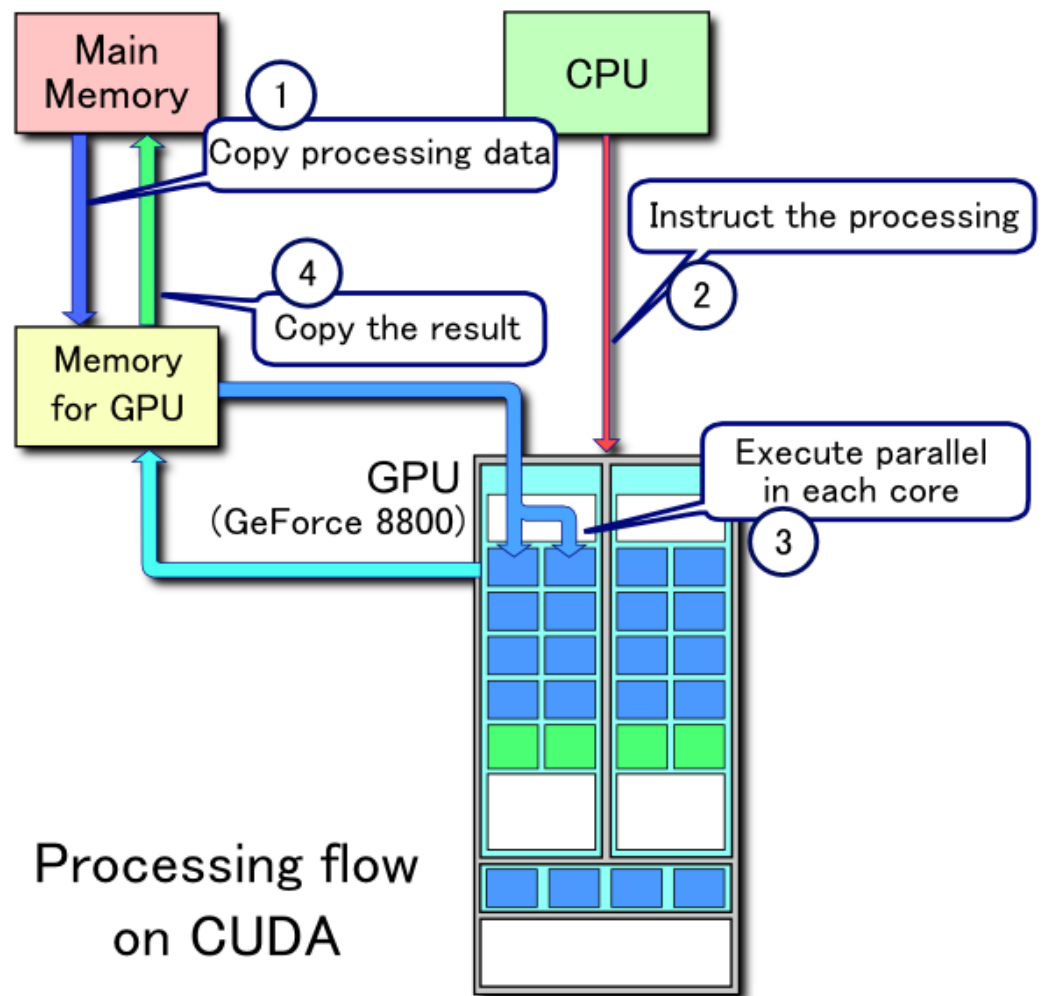
Challenges

- Integrating CUDA into Visual Studio 2008
- Learning CUDA architecture
- Learning how to use the CUDA SDK
- Porting an iterative merge sort algorithm to CUDA

Future Work

If more time was present to conduct the final project the following would be investigated:

- Compare the performance of the GPGPU merge sort algorithm we implemented to a similar one that utilizes pthreads
- Delve deeper into the CUDA SDK to determine if a faster GPGPU implementation could be achieved



CUDA Architecture Code is executed in parallel on the GPU. This takes advantage of the large amount of vertex processors that exist on the nVidia GPU.

References and Resources

- **NVIDIA CUDA ZONE**
(http://www.nvidia.com/object/cuda_home.html)
- **Wikipedia Entry**
(<http://en.wikipedia.org/wiki/CUDA>)

Outcomes

Learned

- How CUDA and GPGPU work
- How to use the CUDA SDK

Accomplished

- Integrated the CUDA SDK with Visual Studio 2008
- Implemented a GPGPU merge sort algorithm using the CUDA SDK

