Proposal

Personal Details

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- How much time do I plan to spend on my GSoC :

  In my opinion, If you are interested in your work, you will never feel tired and bored.

  I can spend the most time to do the project after lectures.
- Start time : from now on .

Background Information

I am interested in parallel computing, so , I have done some Research in

CUDA, Message Passing Interface, OpenMP

When I found the CUDA project of HPX, I felt exited. I think it's my honor. It's belong to me.

During the study of CUDA, I tried Molecular dynamics by cuda speed.

- language :

  C++ : 3 __as like `extern` , `enum`, `Override`, `class`, `namespace`,

  Git : 4 __before half a year. I code a `Golang` project with a friend, I learned git .

  CUDA : 3__ `stream` `SM` `manage memory` `mem-check`...

  Python: 2 `Pygame` `pyautogui` `pyCUDA`...
- HPX matrix which you kindly ask:

  https://github.com/Dragon20180618/GSOC_2020

Project Proposal

- Problem : ROCm backend for HPX.Compute
- Solution : I have check your demands. So, The first thing is look through and understand your CUDA code. At the same time, I will spend time on ROCm. After that, explore the interface or

  other way to come true ROCm. If It is not simple and efficient. I will check HPI. change `CUDA` to `HIP`. As you know, it will allow a single implementation to be used for both AMD and NVidia GPUs.

Proposed Milestones and Schedule

It's my first time to the wonderful adventure of GSoC. So, I learned the Google Schedule carefully.

The Full Program Timeline

- **2020.4** get ROCm message, and Read your CUDA code.
- **2020.5** Community Bonding. Fully understand what is HPX and what can it do.

  learning more about hpx organization's community.
- **2020.6-8** Coding, it's the time to come true the project!
- **2020.8** Submit Code and Final Evaluations

> I think two months coding maybe get a better software. Not only basic power, may be we will let hpx-cuda be much better.