CompArch Final Project Proposal

Topic

Understanding Sandy Bridge

Team Members

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Brief Project Description

Throughout this semester, we learned about the different components of a CPU, designing and building our own submodules, and eventually putting them together to make a single-cycle CPU. The Olin laptops have Ivy Bridge chips that use the Sandy Bridge microarchitecture. Thus, this is a research project to understand the applications of what we have learned in class in modern computing.

References

Intel Architectures Optimization Manual

<http://www.intel.com/content/www/us/en/architecture-and-technology/64-ia-32-architectures-optimization-manual.html>

Computer Organization, Design, and Architecture

<https://books.google.com/books?id=m5KlAgAAQBAJ&lpg=PA411&ots=KoLl8GZsuS&dq=intel%20sandy%20bridge%20optimization%20reference%20manual&pg=PA411#v=onepage&q=intel%20sandy%20bridge%20optimization%20reference%20manual&f=false>

How Sandy Bridge Works

<http://computer.howstuffworks.com/sandy-bridge.htm>

Other Recommended Resources

* [Computer Architecture - A Quantitative Approach](http://app.knovel.com/web/toc.v/cid:kpCAAQAE11) (the successor to Computer Organization - both available through Olin Library)
* [Real World Technologies](http://www.realworldtech.com/sandy-bridge/)
* [AnandTech](http://www.anandtech.com/show/3922/intels-sandy-bridge-architecture-exposed)
* [ExtremeTech](http://www.extremetech.com/computing/83848-sandy-bridge-intels-nextgeneration-microarchitecture-revealed), [HardwareSecrets](http://www.hardwaresecrets.com/inside-the-intel-sandy-bridge-microarchitecture/)

Deliverables

* Minimum/Planned – A report and slidedeck explaining Sandy Bridge and highlighting some more complex terms that were not covered in class
* Stretch – Minimum/Planned + a comparison with the AMD processor

Work Plan

* 11/30 – Project proposal draft due
* 12/1 – Project proposal revision due
* 12/8 – Finish researching
* 12/11 – Finish draft of report
* 12/15 – Report due

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| Sunday | Monday | Tuesday | Wednesday | Thursday | Friday | Saturday |
|  | **11/30** | **12/1** | 12/2 | 12/3 | 12/4 | 12/5 |
| 12/6 | 12/7 | **12/8** | 12/9 | 12/10 | **12/11** | 12/12 |
| 12/13 | 12/14 | **12/15** | 12/16 | 12/17 | 12/18 | 12/19 |