# Minutes

17 March 2015

* Feedback on macro writing
  + Although I hacked yasm into letting me use macros as operands, it was just getting ugly so I’ve decided to move to a scripting language to do this. Showed you some python I hacked together on the way to varsity. You suggested I use a templating system, I wholeheartedly agree.
  + You found a few small niggles with the way I’d written assembly and I implemented them.
  + I asked how in depth I need to research latency and throughput of instructions to squeeze the most juice out the processor. You said it wasn’t too important. I noted that I don’t really have an intuition for the weights of instructions so I might want to do at least cursory investigation.
* Struggling to find official info from Intel about specs in their architectures (eg., how much L1 instruction cache is on a haswell processor)
  + I think you found how difficult it was. I will keep searching for Intel whitepapers.
* Guidance on treatise outline
  + I suggested that it’s important that my treatise is looked at before I invest too much into something that’s totally off the rails.
  + After peer review feedback, I will send you a copy of my treatise. Actually this works out great, there is a round table meeting on 27 March. So I can get it to you by this Friday, and perhaps you could have comments ready for round table. Public shaming!
* What next?
  + You suggested I start concentrating on writing. I said I wanted to get concrete about design first. So we spoke about:
  + Bit structure of array/object types: Some of this I just made up, let me know what you think

**Arrays and objects without pointers:**

|  |  |  |
| --- | --- | --- |
| FL | SIZE | DATA… |
| 2b | 62b | Arbitrary size (well, exactly SIZE words long) |
| 63… | …0 | Words of increasing address |

**Arbitrary objects containing pointers, and stack frames:**

|  |  |
| --- | --- |
| PTR BITMAP | DATA… |
| 62b | Arbitrary size (well, exactly SIZE words long) |

**Bitmap:**

|  |  |
| --- | --- |
| SIZE | BITMAP |
| 64b | For each word in DATA…, if a pointer type, 1, else 0 |

**FL field:**

|  |  |
| --- | --- |
| bit 0 (bit 63 in a word) | 0: array type 1: object type |
| Bit 1 (bit 62 in a word) | 0: contains no pointers 1: unsuitable for persons with pointer allergies |