Report 1

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Progress This Week

As discussed last week at our meeting, I looked into different ways that we could bring the annotations from high level C code, down to LLVM. I found that Clang already supports __attribute__((annotate("some string"))); however, it would be possible to create another one if we wished to. [4] gives basic instructions on how to do this, but it should be possible to find a more comprehensive one.

I also looked into pragmas. It appears that pragmas do not go to the LLVM level, and that a custom handler would need to be written in order to handle the new pragma type. [2], [3] and [1] were different tutorials that I read, which gave different ideas on how to work with LLVM and Clang.

Aims For Next Week

For next time I am hoping to do a few things:

- Continue to look over tutorials and decide on what would be the best way to do things. Medium

As it stands, I that that it would be worth while to either create a preprocessor which converts some standard format to annotations, or look more in depth at how to create a custom attribute would be a good way to go.

Questions

- Would it be possible to get a written explanation of what I am doing in this project? The initial project description seemed almost totally different to what I am currently doing and the project description which is on the Project Portal site, according to Dr Nabi, is not correct.

References

[1] Kevin Boos. *Bits, Bytes, Boos. Clang Tutorial*. 2013. URL: https://kevinaboos.wordpress.com/2013/07/23/clang-tutorial-part-i-introduction/.

[2] Serge Guelton. *Implementing a Custom Directive Handler in Clang*. 2016. URL: http://blog.quarkslab.com/implementing-a-custom-directive-handler-in-clang.html.

[3] LLVM Project. *Writing an LLVM Pass*. URL: http://llvm.org/docs/WritingAnLLVMPass.html.

[4] The Clang Team. *Clang CFE Internals Manual. How to add an attribute.* URL: http://clang.llvm.org/docs/InternalsManual.html#how-to-add-an-attribute.