

# Assignment 12: Working with LLVM Abstract Transfer Functions

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14 November 2024

Repository: <https://github.com/caydenlund/transfer-function-analysis>

The abstract domain that I picked was `ConstantRange`, and the transfer function that I used was `abs` (absolute value). I chose this because it's simple enough to implement and test, while still being composed of multiple, simpler LLVM transfer functions. My technique was to loop through all of the concrete values given by the concretization function over the abstract range, to insert the absolute value of the concrete value into a set, and then to abstractize that set.

Here are my results:

Bitwidth	10
Total abstract values for this bitwidth	523,777
Tests where the built-in composite fn was more precise	2,042
Tests where my decomposed fn was more precise	3
Incomparable results	0