539B Project proposal

Full abstraction

March 5, 2019

1 Source and Target language

1. Source Language: Subset of Ocaml (Ml-style turing complete language)
2. Target Language: Three counter machine (three operations)
   Four operations : INC, DEC, JZ and HALT

2 Correctness property

1. Semantic preservation - The translation of a source component correctly preserves the behavior of the original source component, for a given specification.
2. Equivalence preservation (will violate this)

I am trying to aim for fully abstract and not correct model of the language. Usually there are properties which need to be shown for a compiler to be shown fully abstract - Equivalence preservation and Equivalence Reflection.
Also, if the observational equivalence of two languages are equivalent then it means that they are fully abstract.