Homework H6

1 Description

Write an LLVM pass starting from the code you have developed for H5.

The goal of this assignment is to reduce the conservativeness of H5 related to escape variables.

In more detail, instead of blocking the constant propagation for such variables as you have done for H5, you now need to rely on the pointer aliases identified by LLVM to properly handle them in the reaching definition analysis and/or in your constant propagation algorithm.

H6 has to be intra-procedural as all prior assignments. While H6 is intra-procedural, some alias analyses that are invoked by the tests are inter-procedural. Hence, they provide information about the whole bitcode module.

Run all tests   Go to `H6/tests` and run

```
make
```

to test your work.

2 LLVM API and Friends

For this homework you need to use some of the APIs related to alias and/or dependence analysis used in LLVM_dependences.tar.bz2

3 What to submit

Submit via Canvas the C++ file you've implemented (CatPass.cpp).

For your information: my solution for H6 added 12 lines of C++ code to H5 (computed by `sloccount`).

Good luck with your work!