



Homework H0

1 Description

Write an LLVM pass starting from the template available in Canvas (Template.tar.bz2). The goal of your first pass is to print every function compiled. Specifically, for each function compiled, you must first print to standard error its name and then its body.

2 Example

Consider the following program:

```
int main (int argc, char *argv[]){
    return 0;
}
```

Compile this program with `clang` by using the following command line:

```
$ clang -Xclang -load -Xclang YOUR_PASS.so program1.c 2> compiler_output
```

your pass must generate the following output (stored in `compiler_output`):

Function "main"

```
; Function Attrs: nounwind uwtable
define i32 @main(i32 %argc, i8** %argv) #0 {
entry:
    %retval = alloca i32, align 4
    %argc.addr = alloca i32, align 4
    %argv.addr = alloca i8**, align 8
    store i32 0, i32* %retval
    store i32 %argc, i32* %argc.addr, align 4
    store i8** %argv, i8*** %argv.addr, align 8
    ret i32 0
}
```

H0.tar.bz2 includes a few programs you can use to test your work.

3 Testing your work

To test your work, go to a test you have available:

```
$ cd H0/tests/test0
```

set the path of your pass in LLVMPASSPATH of Makefile. Now, compile a program

```
$ make
```

Check the output generated by your pass against the oracle output:

```
$ make check
```

If you've passed the test, you'll see the following output:

```
Test passed!
```

Otherwise, you'll see the following:

```
Test failed
```

```
Output differences can be found in "./diff_output"
```

and you can look at `diff_output` to find out the differences.

Good luck with your work!

4 What to submit

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

5 Homework due

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