**For part1, I extracted the relevant information from the instructions and variables with the following code:**

errs() << "\nFor the Module,\n";

for (auto g = M.global\_begin(); g != M.global\_end(); ++g) {

GlobalVariable \*gv = &\*g;

Type \*t = gv->getType();

const Twine &n = gv->getName();

Constant\* v;

errs() << "NAME: " << n << ", TYPE: ";

t->dump();

if(gv->hasInitializer()){

v = gv->getInitializer();

errs() << ", VALUE: ";

v->dump();

}

}

for (auto g = M.begin(); g != M.end(); ++g) {

Function \*gv = &\*g;

Type \*t = gv->getType();

const Twine &n = gv->getName();

errs() << "NAME: " << n << ", PROTOTYPE: ";

t->dump();

errs() << "\n";

}

errs() << "\nFor each Function,\n";

for(Function& F: M) {

errs() << "INPUT PARAMS & TYPES: ";

for(auto& A : F.getArgumentList()) {

errs() << A << ", ";

}

Type \*t = F.getReturnType();

errs() << "RETURN TYPE: ";

t->dump();

int c = 0;

for(BasicBlock& bb : F) {

c++;

}

errs() << ", # OF BASIC BLOCKS: " << c << "\n";

}

errs() << "\nFor each basic block,\n";

for(Function& F: M) {

for(BasicBlock& bb : F) {

int c = 0;

for(Instruction& i : bb) {

const char\* n = i.getOpcodeName();

unsigned o = i.getOpcode();

errs() << "INST NAME: " << n << ", OPERAND: " << o << "\n";

c++;

}

errs() << "# OF INSTRUCTIONS IN THIS BASIC BLOCK: " << c << "\n\n";

}

}

**The result of make diff is this:**





