Assignment 3

1. Inter-Procedural Precise Copy Analysis

Extend the intra-procedural Precise Copy Analysis from Assignment 2 to handle function calls. SL_1 is extended to SL_2 with function declarations and function calls. A function can have an arbitrary number of parameters and at most one resturn value. The number of arguments of a function call must match the number of parameters of the called function. Values can be returned in a function by a return statement.

Relevant to function calls are the following ICFG nodes:

- ArgumentAssignment(VarRefExp(var), exp)
- FunctionCall(fname,params)
- FunctionEntry(fname)
- ParamAssignment(VariableSymbol(var), VariableSymbol(param))
- ReturnStmt(exp)
- ReturnAssignment(VariableSymbol(var), VariableSymbol(retvar))
- FunctionExit(fname,params)
- FunctionReturn(fname,params)

where 'var' denotes the name of a variable, 'exp' an expression, 'fname' a function name, 'param' the name of a function parameter, 'retvar' the name of an auxiliary variable for handling return values, and 'params' a list of parameters.

In the analysis specification it can be assumed that all variables of a given SL_2 program have unique names. Make sure that variables that go out of scope are removed from the analysis information.

Specify the inter-procedural precise copy analysis with PAG.

2. Hand in

- Send your PAG specification per e-mail to `markus@complang.tuwien.ac.at`
- The e-mail must have as subject "OPTUB:Assignment 3, <LastName>" where <LastName> is replaced with your last name. The PAG specification should be attached as tgz file containing all required files for creating analyzer ca.
- Deadline: 11:59am November 20, 2007.