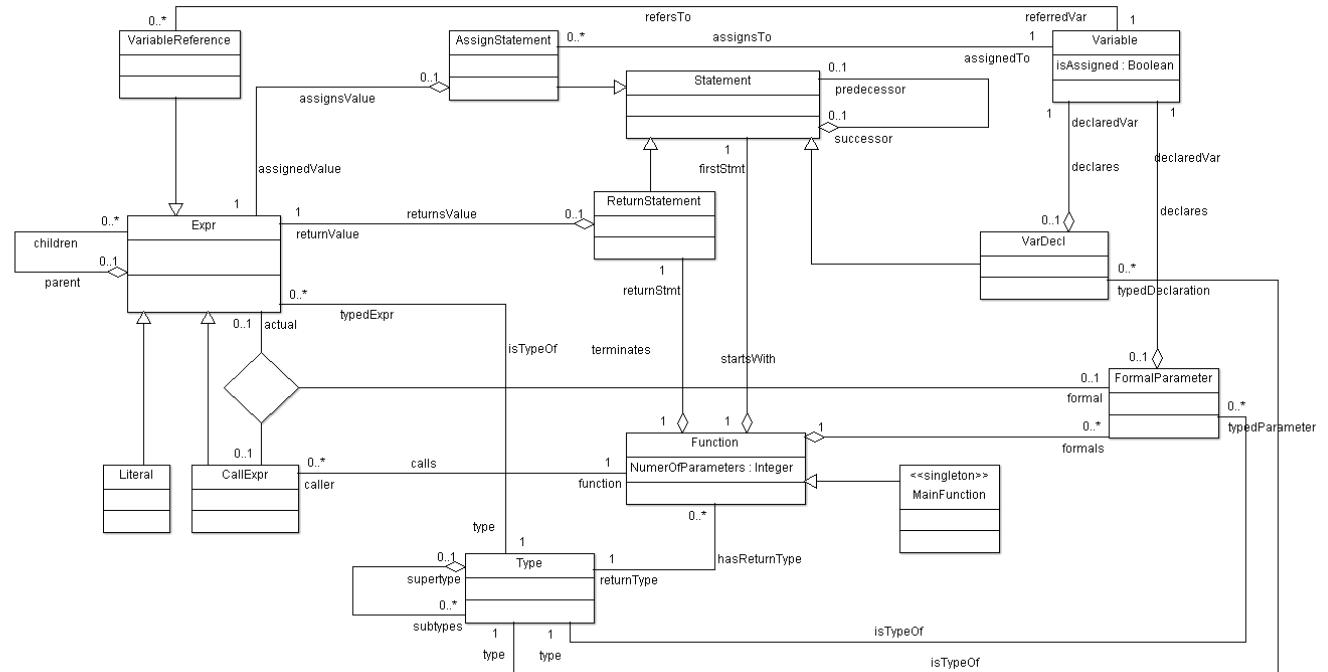


ETH SAE Project 1 - Sherlock

Source code and XML files are in `hand-in.zip`.

UML class diagram

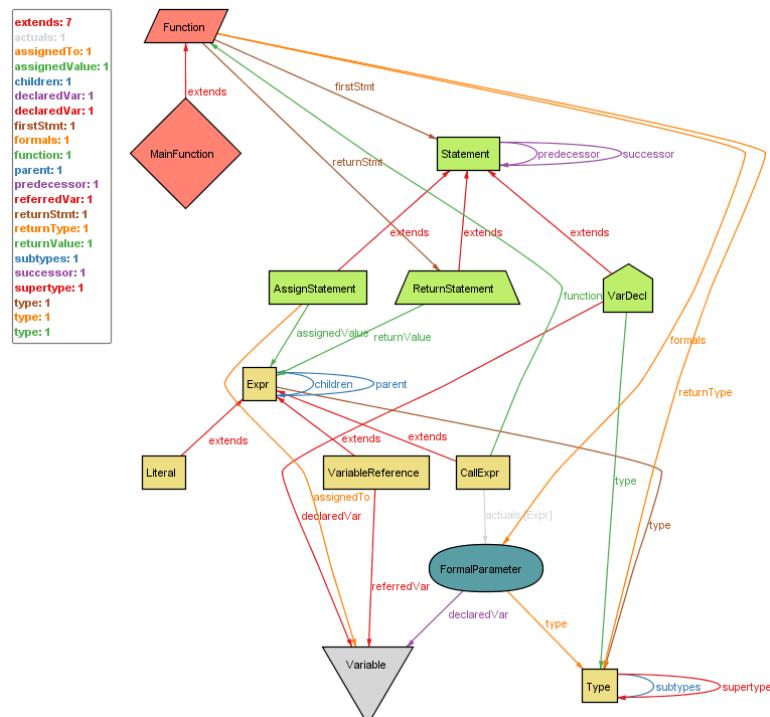


Elements that are not encodable in the UML class diagram

(The non-UML-encodable element is listed first. An optional explanation is in parentheses.)

- The first statement has no predecessor.
- The return statement has no successor.
- Actual parameters are mapped to formal parameters. (This would be done by a semantic analyser).
- Return statement terminates the execution.
- A function may not contain unreachable statements.
- Recursion is not allowed.
- The children of the call expression are in parent-child relation with the actual parameters.
- There is one main function that takes no parameters.
- All functions are transitively called from the main function.
- A variable has to be declared at least once. (We only modelled it has to be declared at most once)
- Variables must be declared in the same function before the first use such as the first assignment.
- Variables can only be used in expressions after they have been assigned to.
- We do not allow dead variables or dead assignments.
- There are no assignments to parameters.
- Typing rules for assignments, function calls and return statements.

Alloy model from task B



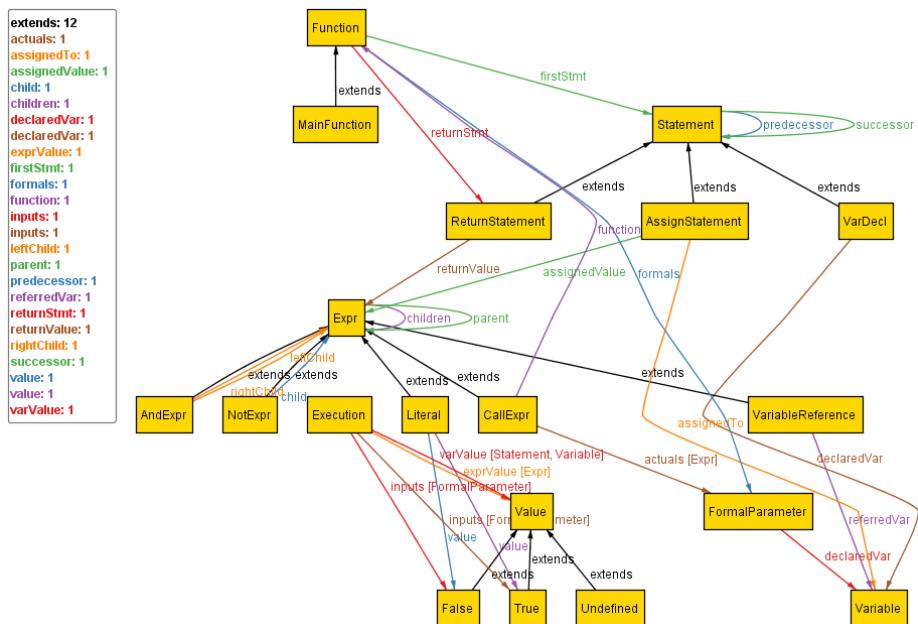
Elements that are not encodable in the Alloy model for task B

(The non-Alloy-encodable element is listed first. An optional explanation is in parentheses.)

- A return statement terminates the execution of the function body. (This is not a static constraint.)

- A function may not contain unreachable statements.

Alloy model from task D



Instances that are not feasible in task C

- Instance 1 is not feasible since no recursion is allowed.
- Instance 5 is not feasible since we only have one literal yet two different types - and these two conditions cannot be fulfilled simultaneously.

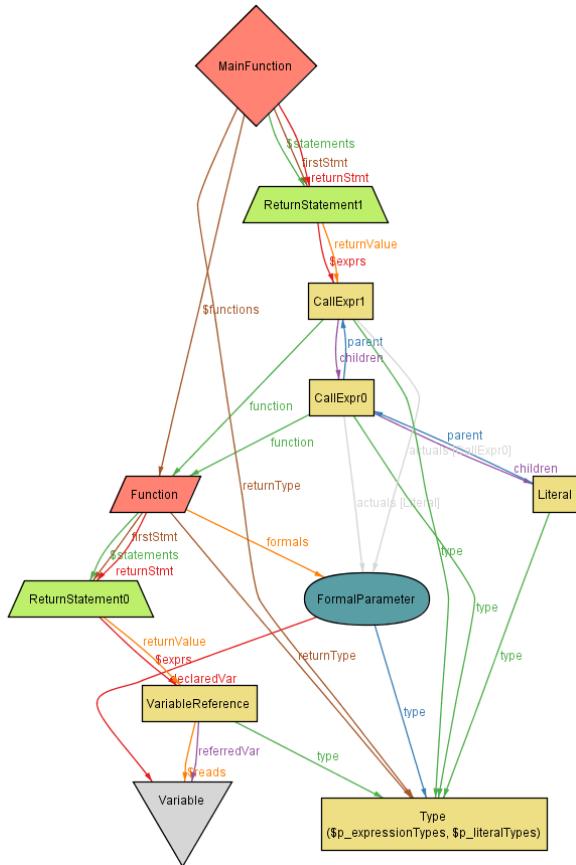
Image exports from task C

Instance 2

Instance 1

```

$exprs: 2
$functions: 1
$reads: 1
$statements: 2
actuals: 2
children: 2
declaredVar: 1
firstStmt: 2
formals: 1
function: 2
parent: 2
REFERREDVAR: 1
returnStmt: 2
returnType: 2
returnValue: 2
type: 4
type: 1
  
```

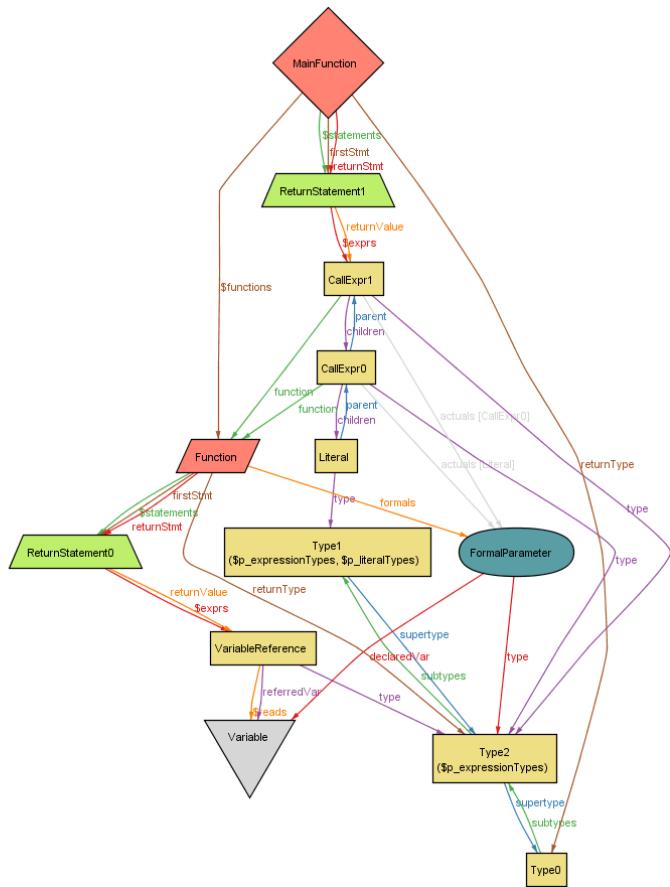


Instance 2

```

$exprs: 2
$functions: 1
$reads: 1
$statements: 2
actuals: 2
children: 2
declaredVar: 1
firstStmt: 2
formals: 1
function: 2
parent: 2
referredVar: 1
returnStmt: 2
returnType: 2
returnValue: 2
subtypes: 2
superType: 2
type: 4
type: 1

```

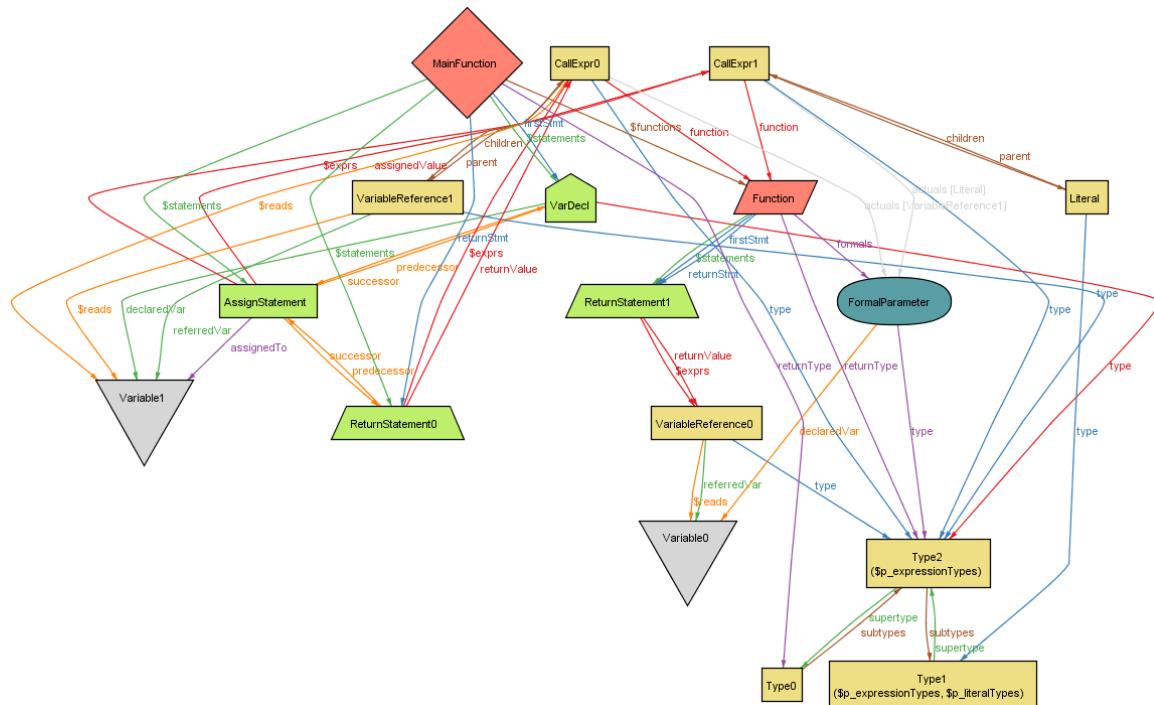


Instance 3

```

$exprs: 3
$functions: 1
$reads: 3
$statements: 4
actuals: 2
assignedTo: 1
assignedValue: 1
children: 2
declaredVar: 1
declaredVar: 1
firstStmt: 2
formals: 1
function: 2
parent: 2
predecessor: 2
referredVar: 2
returnStmt: 2
returnType: 2
returnValue: 2
subtypes: 2
successor: 2
superType: 2
type: 5
type: 1
type: 1

```

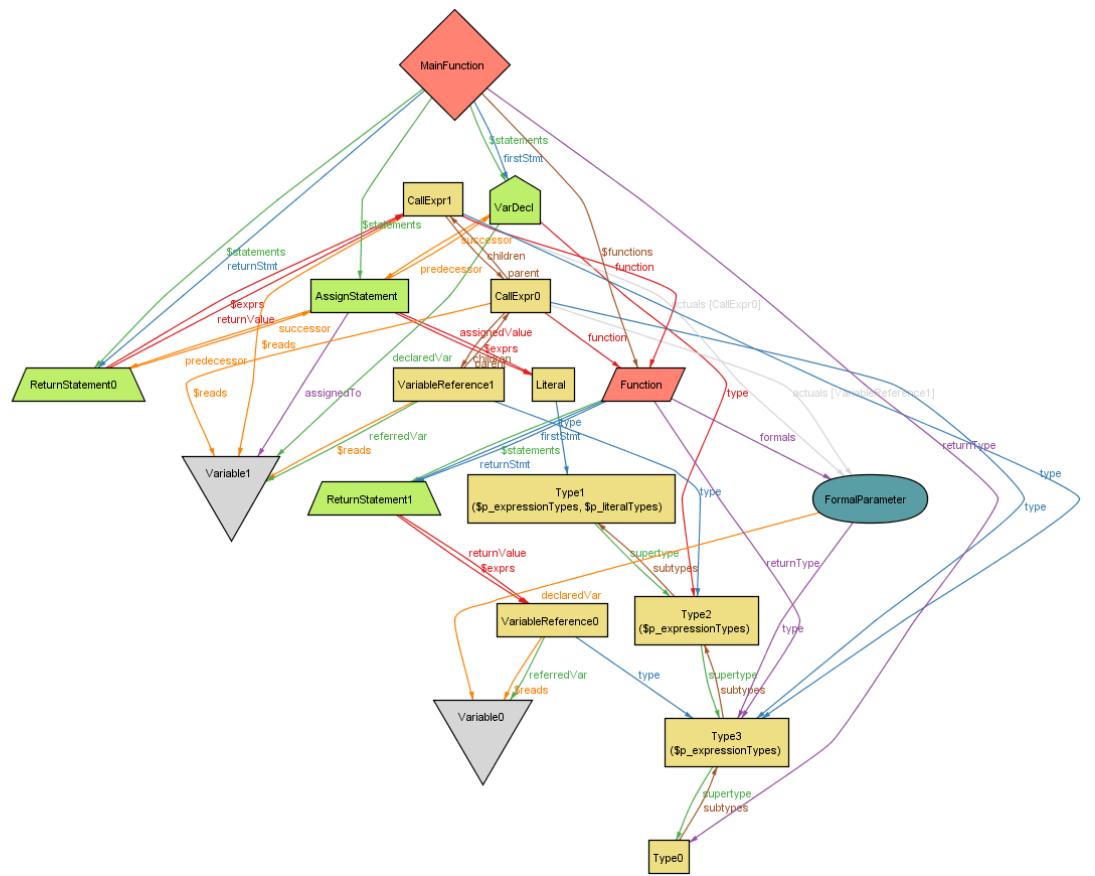


Instance 4

```

$exprs: 3
$functions: 1
$reads: 4
$statements: 4
actuals: 2
assignedTo: 1
assignedValue: 1
children: 2
declaredVar: 1
declaredVar: 1
firstStmt: 2
formals: 1
function: 2
parent: 2
predecessor: 2
referedVar: 2
returnStmt: 2
returnType: 2
returnValue: 2
subtypes: 3
successor: 2
superType: 3
type: 5
type: 1
type: 1

```

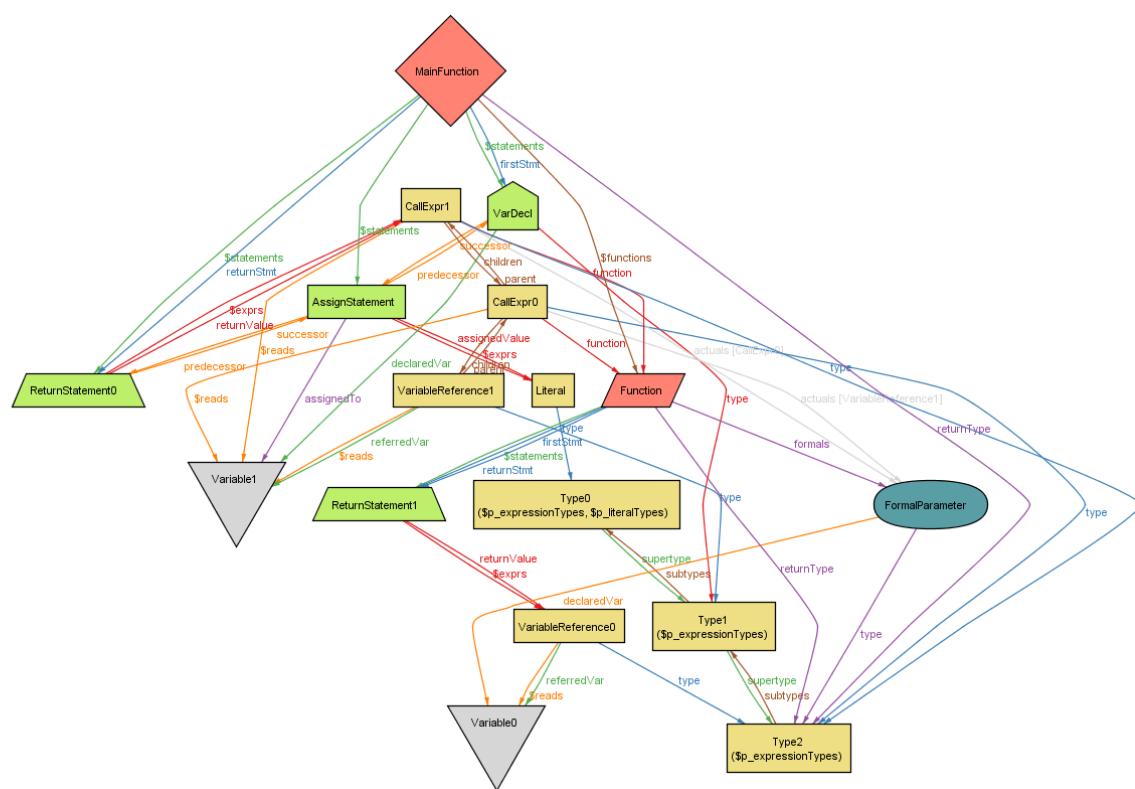


Instance 5

```

$exprs: 3
$functions: 1
$reads: 4
$statements: 4
actuals: 2
assignedTo: 1
assignedValue: 1
children: 2
declaredVar: 1
declaredVar: 1
firstStmt: 2
formals: 1
function: 2
parent: 2
predecessor: 2
referedVar: 2
returnStmt: 2
returnType: 2
returnValue: 2
subtypes: 2
successor: 2
superType: 2
type: 5
type: 1
type: 1

```

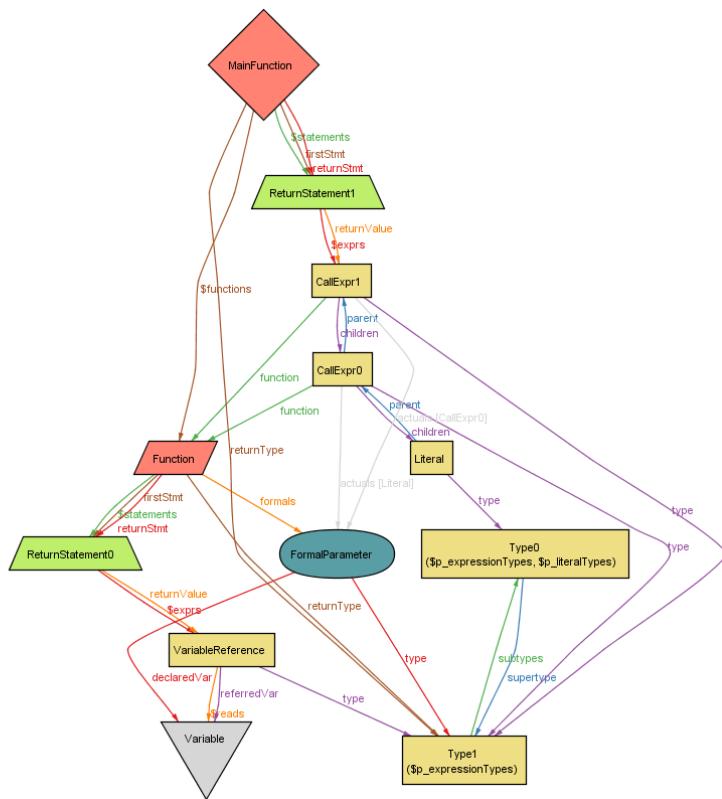


Instance 6

```

$exprs: 2
$functions: 1
$reads: 1
$statements: 2
actuals: 2
children: 2
declaredVar: 1
firstStmt: 2
formals: 1
function: 2
parent: 2
referedVar: 1
returnStmt: 2
returnType: 2
returnValue: 2
subtypes: 1
superType: 1
type: 4
type: 1

```

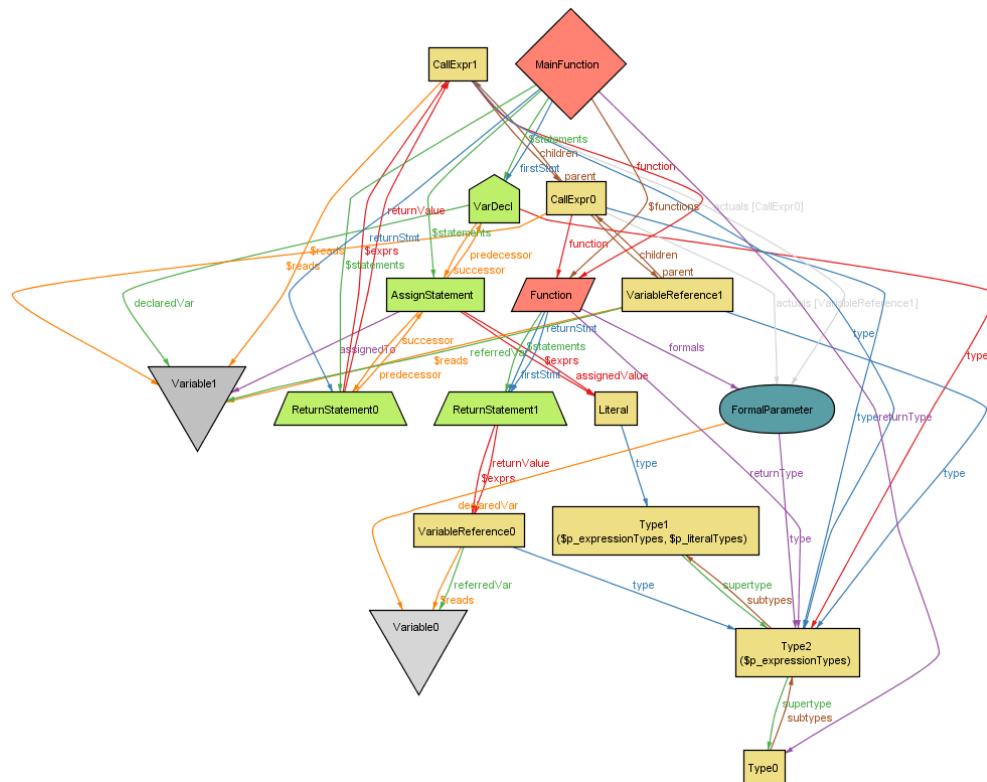


Instance 7

```

$exprs: 3
$functions: 1
$reads: 4
$statements: 4
actuals: 2
assignedTo: 1
assignedValue: 1
children: 2
declaredVar: 1
declaredVar: 1
firstStmt: 2
formals: 1
function: 2
parent: 2
predecessor: 2
referedVar: 2
returnStmt: 2
returnType: 2
returnValue: 2
subtypes: 2
successor: 2
superType: 2
type: 5
type: 1
type: 1

```

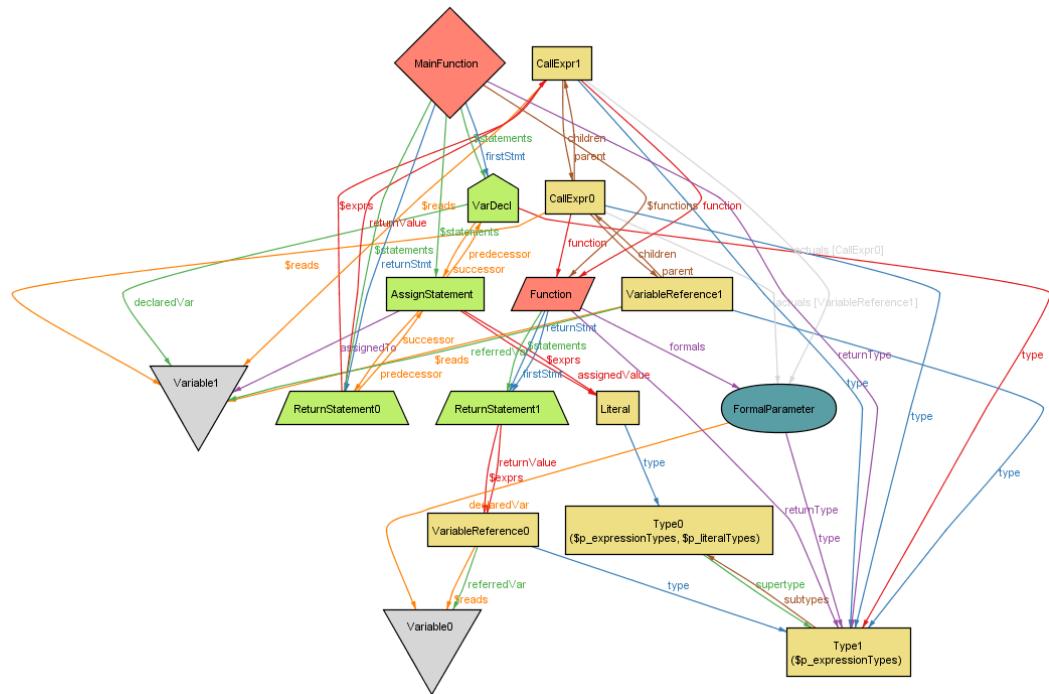


Instance 8

```

$exprs: 3
$functions: 1
$reads: 4
$statements: 4
actuals: 2
assignedTo: 1
assignedValue: 1
children: 2
declaredVar: 1
declaredVar: 1
firstStmt: 2
formals: 1
function: 2
parent: 2
predecessor: 2
referredVar: 2
returnStmt: 2
returnType: 2
returnValue: 2
subtypes: 1
successor: 2
superType: 1
type: 5
type: 1
type: 1

```

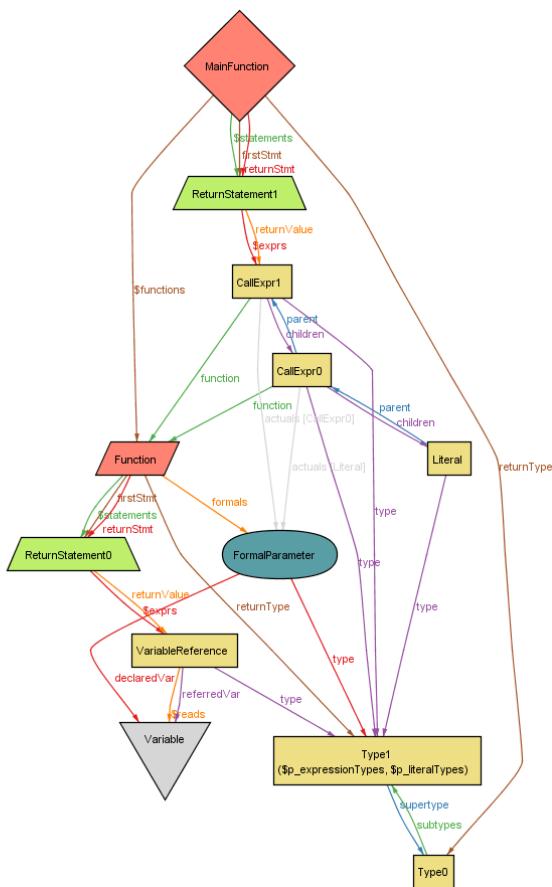


Instance 9

```

$exprs: 2
$functions: 1
$reads: 1
$statements: 2
actuals: 2
children: 2
declaredVar: 1
firstStmt: 2
formals: 1
function: 2
parent: 2
referredVar: 1
returnStmt: 2
returnType: 2
returnValue: 2
subtypes: 1
superType: 1
type: 4
type: 1

```

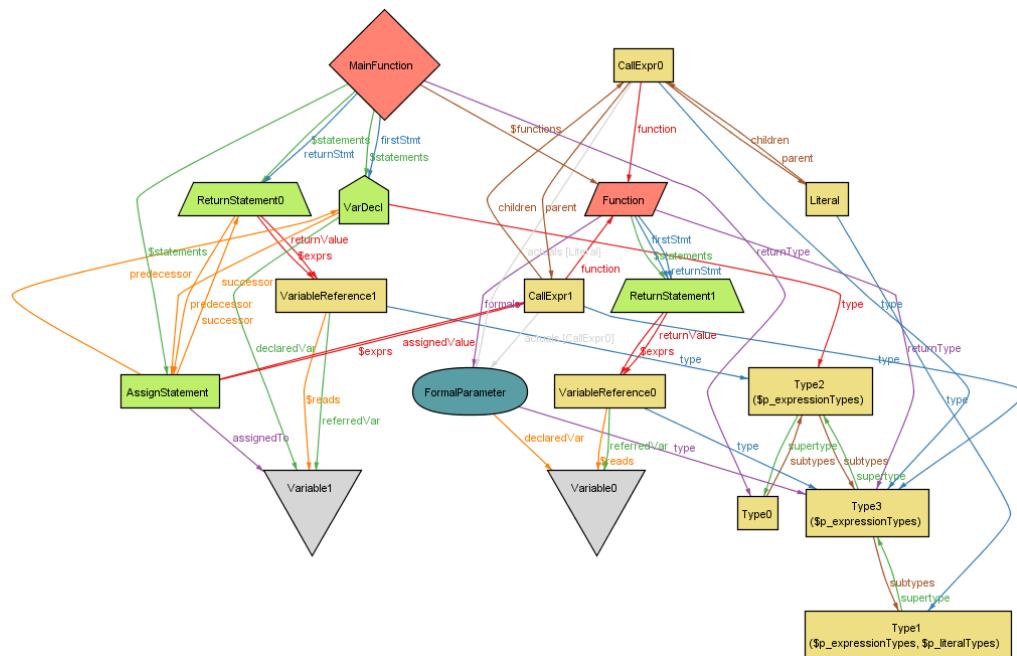


Instance 10

```

$exprs: 3
$functions: 1
$reads: 2
$statements: 4
actuals: 2
assignedTo: 1
assignedValue: 1
children: 2
declaredVar: 1
declaredVar: 1
firstStmt: 2
formals: 1
function: 2
parent: 2
predecessor: 2
referredVar: 2
returnStmt: 2
returnValue: 2
subtypes: 3
successor: 2
superType: 3
type: 5
type: 1
type: 1

```

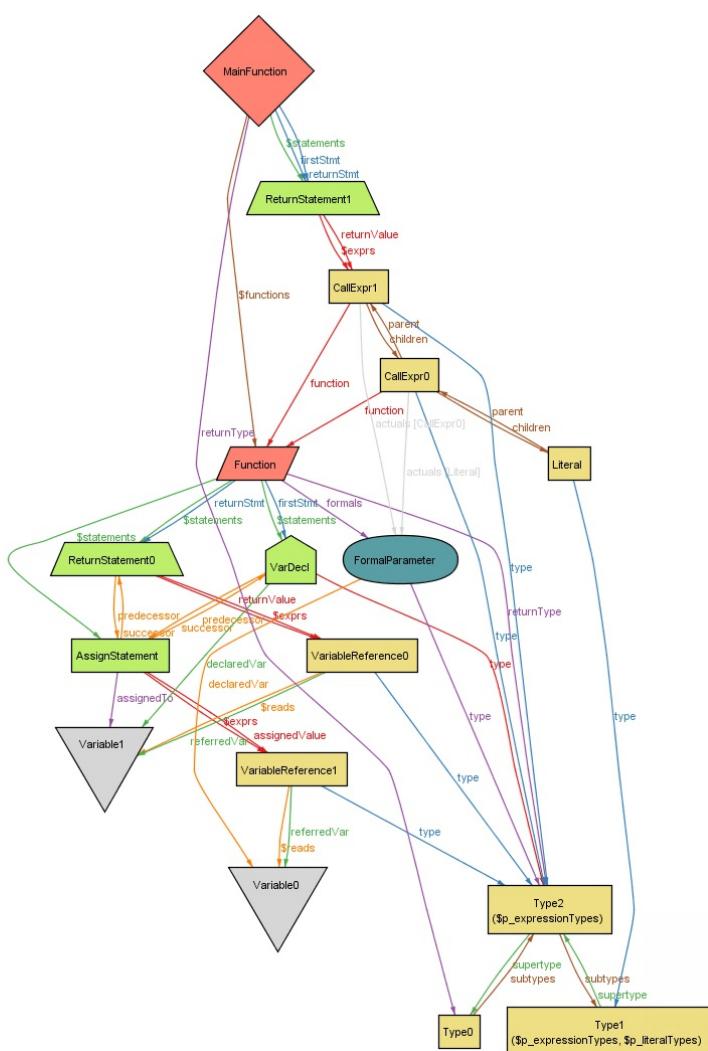


Instance 11

```

$exprs: 3
$functions: 1
$reads: 2
$statements: 4
actuals: 2
assignedTo: 1
assignedValue: 1
children: 2
declaredVar: 1
declaredVar: 1
firstStmt: 2
formals: 1
function: 2
parent: 2
predecessor: 2
referredVar: 2
returnStmt: 2
returnType: 2
returnValue: 2
subtypes: 2
successor: 2
superType: 2
type: 5
type: 1
type: 1

```

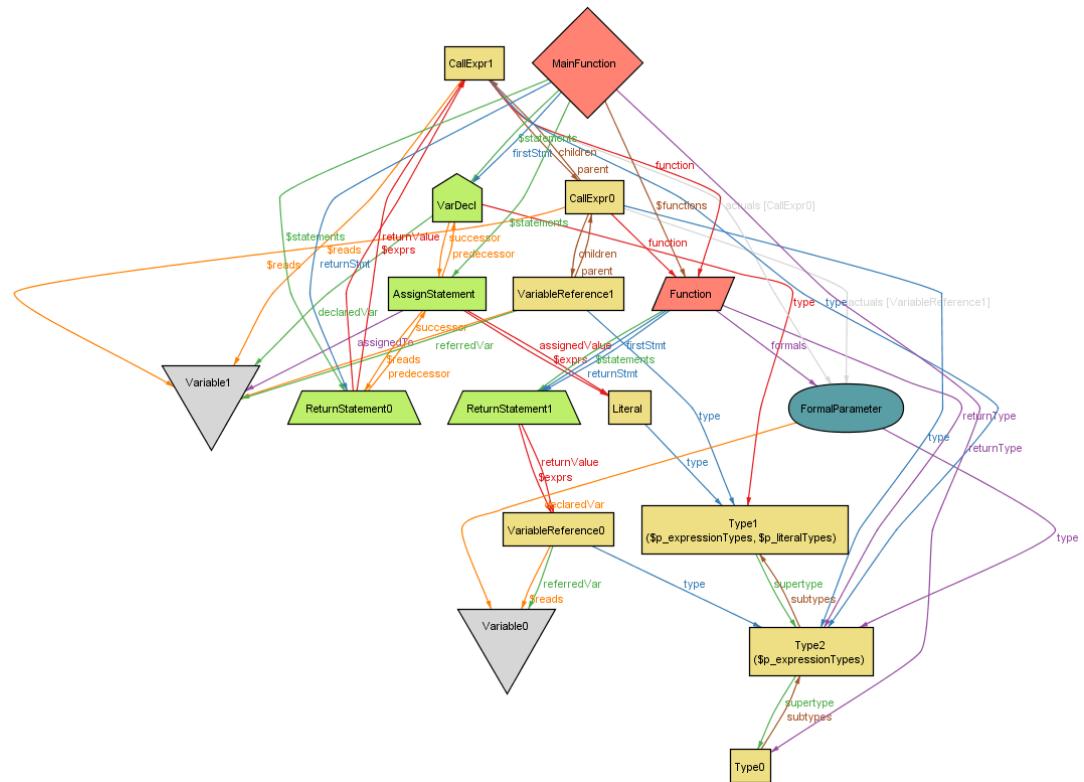


Instance 12

```

$exprs: 3
$functions: 1
$reads: 4
$statements: 4
actuals: 2
assignedTo: 1
assignedValue: 1
children: 2
declaredVar: 1
declaredVar: 1
firstStmt: 2
formals: 1
function: 2
parent: 2
predecessor: 2
referedVar: 2
returnStmt: 2
returnType: 2
returnValue: 2
subtypes: 2
successor: 2
superType: 2
type: 5
type: 1
type: 1

```

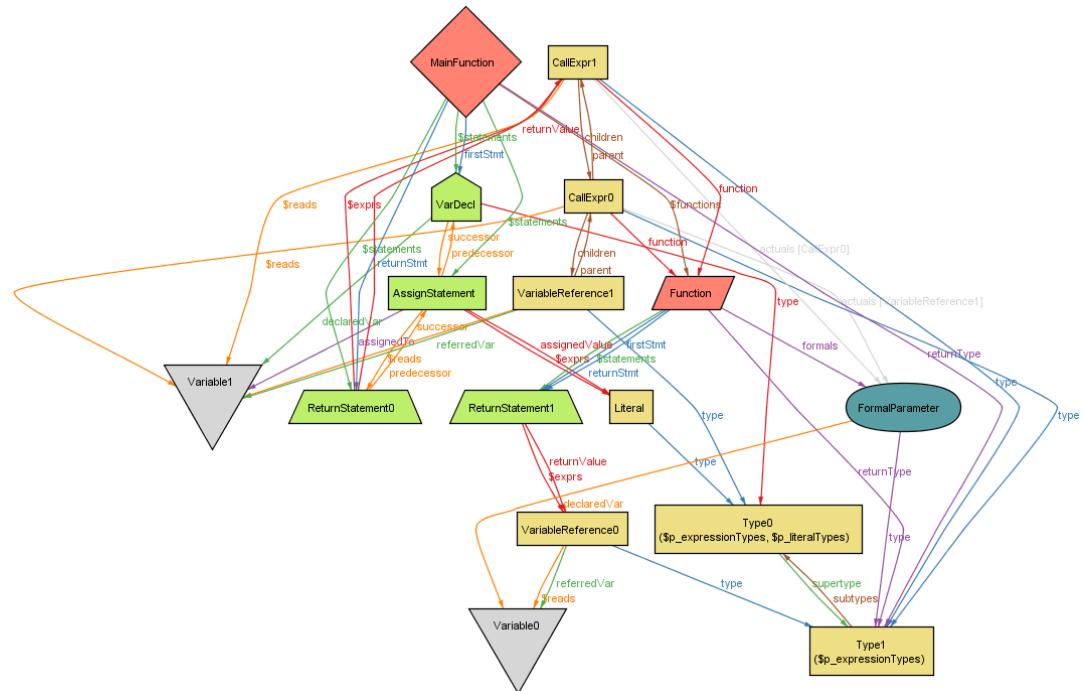


Instance 13

```

$exprs: 3
$functions: 1
$reads: 4
$statements: 4
actuals: 2
assignedTo: 1
assignedValue: 1
children: 2
declaredVar: 1
declaredVar: 1
firstStmt: 2
formals: 1
function: 2
parent: 2
predecessor: 2
referedVar: 2
returnStmt: 2
returnType: 2
returnValue: 2
subtypes: 1
successor: 2
superType: 1
type: 5
type: 1
type: 1

```

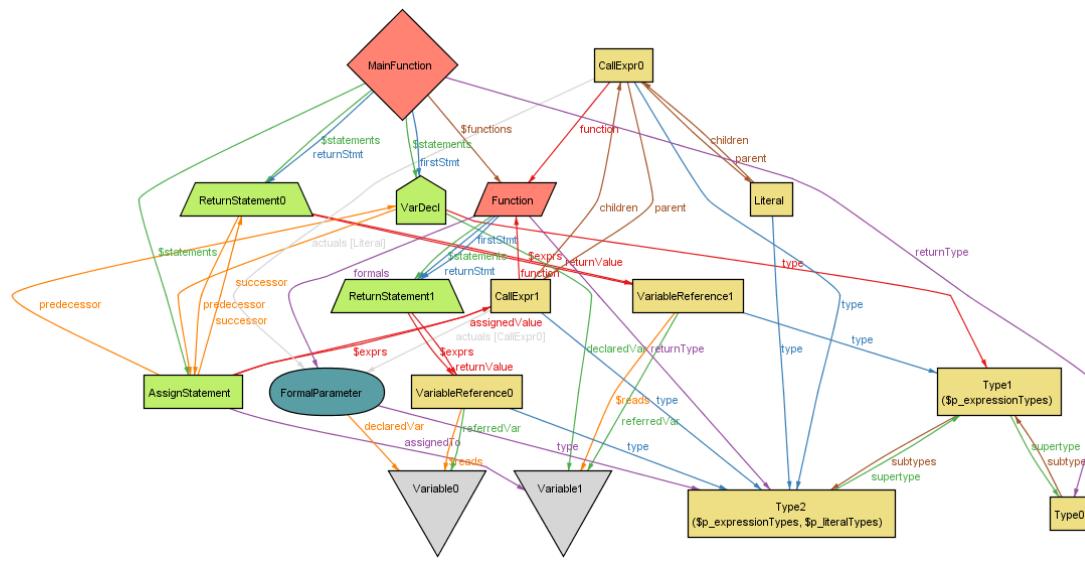


Instance 14

```

$exprs: 3
$functions: 1
$reads: 2
$statements: 4
actuals: 2
assignedTo: 1
assignedValue: 1
children: 2
declaredVar: 1
declaredVar: 1
firstStmt: 2
formals: 1
function: 2
parent: 2
predecessor: 2
referedVar: 2
returnStmt: 2
returnType: 2
returnValue: 2
subtypes: 2
successor: 2
supertype: 2
type: 5
type: 1
type: 1

```

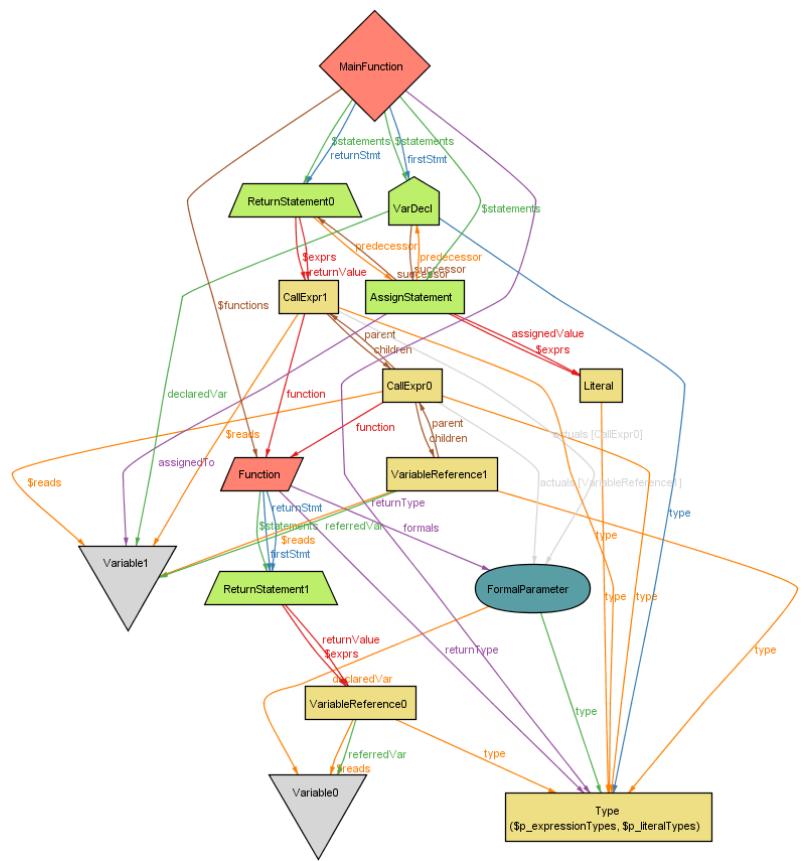


Instance 15

```

$exprs: 3
$functions: 1
$reads: 4
$statements: 4
actuals: 2
assignedTo: 1
assignedValue: 1
children: 2
declaredVar: 1
declaredVar: 1
firstStmt: 2
formals: 1
function: 2
parent: 2
predecessor: 2
referedVar: 2
returnStmt: 2
returnType: 2
returnValue: 2
subtypes: 2
successor: 2
type: 5
type: 1
type: 1

```

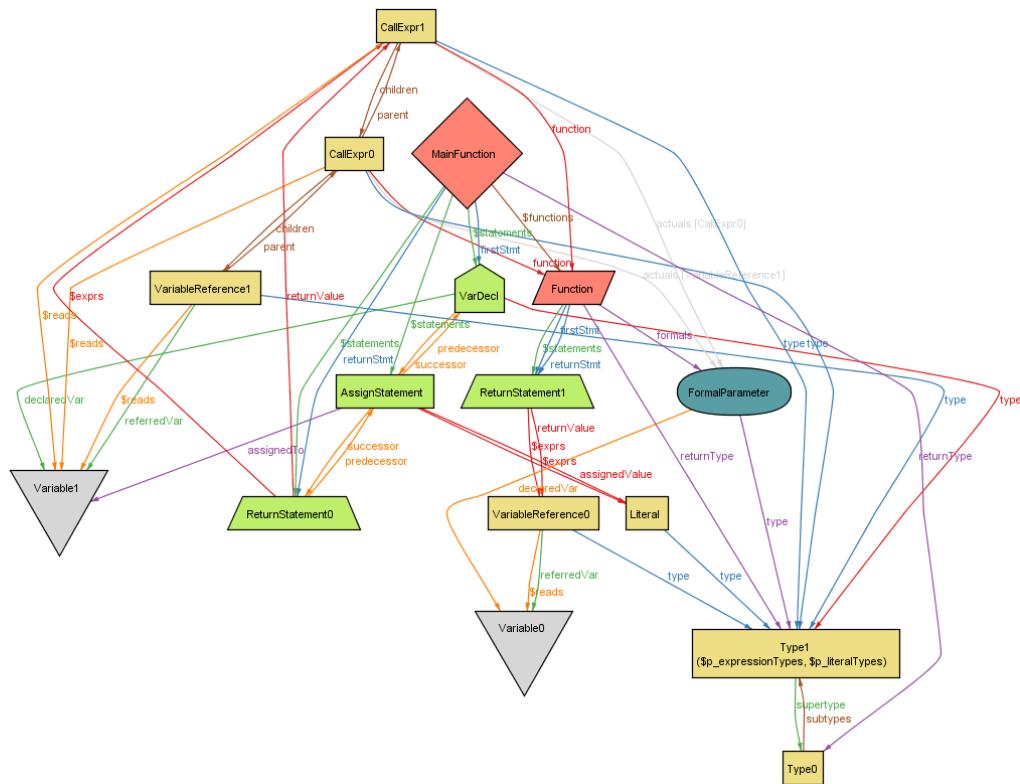


Instance 16

```

$exprs: 3
$functions: 1
$reads: 4
$statements: 4
actuals: 2
assignedTo: 1
assignedValue: 1
children: 2
declaredVar: 1
declaredVar: 1
firstStmt: 2
formals: 1
function: 2
parent: 2
predecessor: 2
referredVar: 2
returnStmt: 2
returnValue: 2
subtypes: 1
successor: 2
superType: 1
type: 5
type: 1
type: 1

```

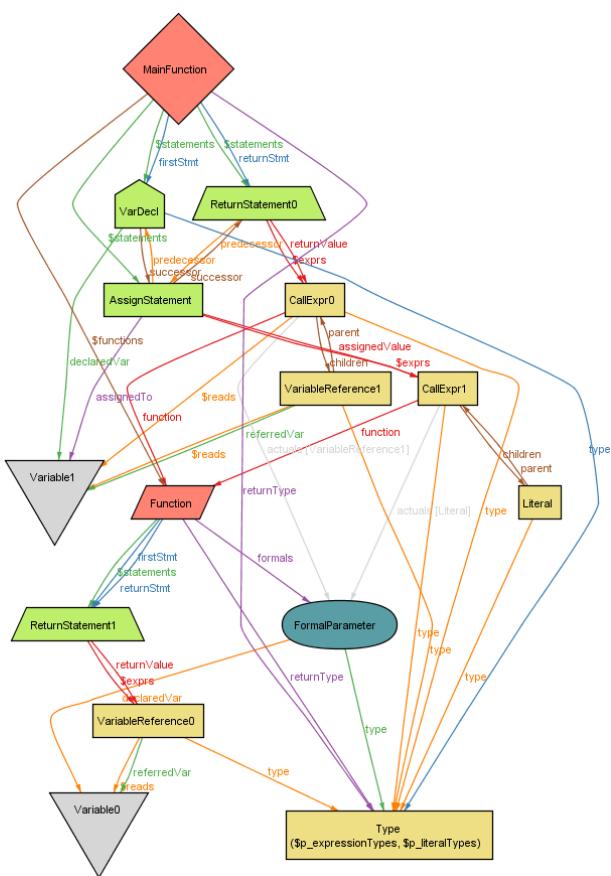


Instance 17

```

$exprs: 3
$functions: 1
$reads: 3
$statements: 4
actuals: 1
assignedTo: 1
assignedValue: 1
children: 2
declaredVar: 1
declaredVar: 1
firstStmt: 2
formals: 1
function: 2
parent: 2
predecessor: 2
referredVar: 2
returnStmt: 2
returnValue: 2
subtypes: 2
successor: 2
superType: 1
type: 5
type: 1
type: 1

```

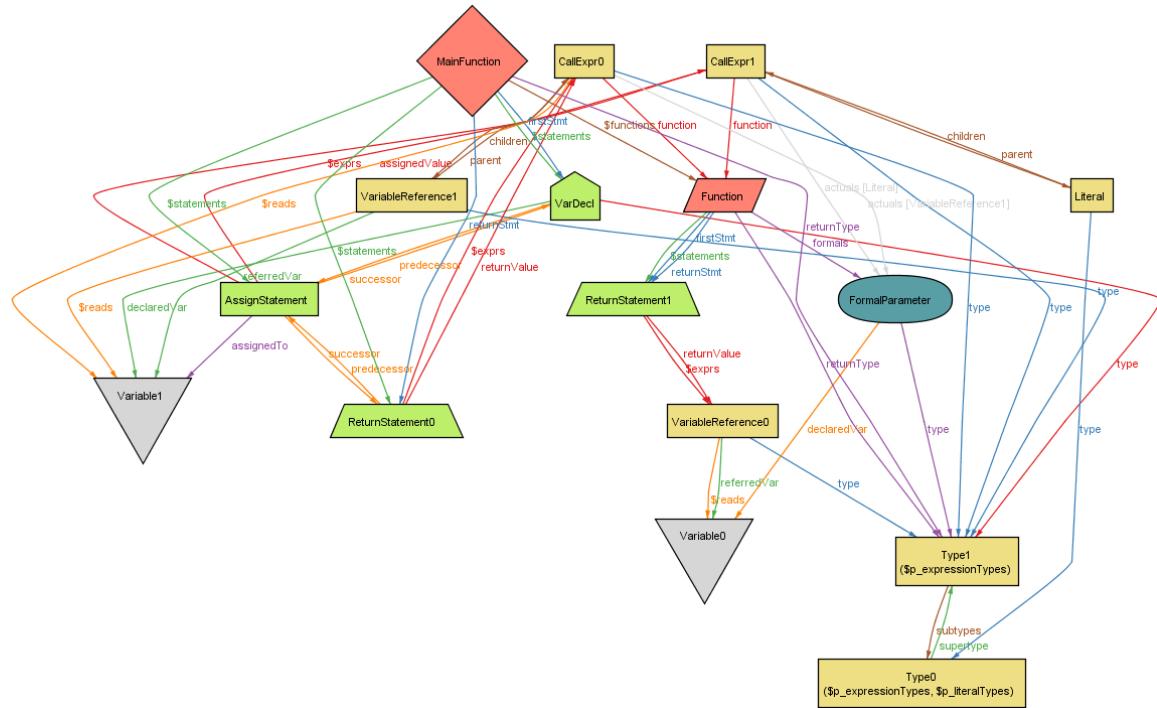


Instance 18

```

$exprs: 3
$functions: 1
$reads: 3
$statements: 4
actuals: 2
assignedTo: 1
assignedValue: 1
children: 2
declaredVar: 1
declaredVar: 1
firstStmt: 2
formals: 1
function: 2
parent: 2
predecessor: 2
referredVar: 2
returnStmt: 2
returnType: 2
returnValue: 2
subtypes: 1
successor: 2
superType: 1
type: 5
type: 1
type: 1

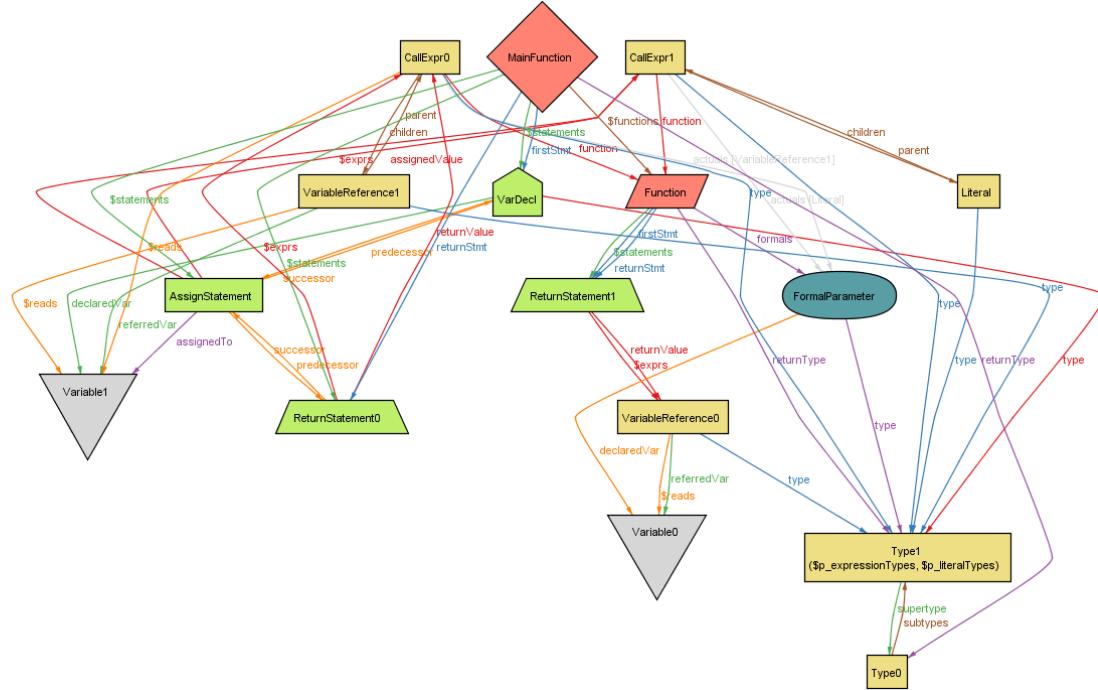
```



```

$exprs: 3
$functions: 1
$reads: 3
$statements: 4
actuals: 2
assignedTo: 1
assignedValue: 1
children: 2
declaredVar: 1
declaredVar: 1
firstStmt: 2
formals: 1
function: 2
parent: 2
predecessor: 2
referredVar: 2
returnStmt: 2
returnType: 2
returnValue: 2
subtypes: 1
successor: 2
superType: 1
type: 5
type: 1
type: 1

```

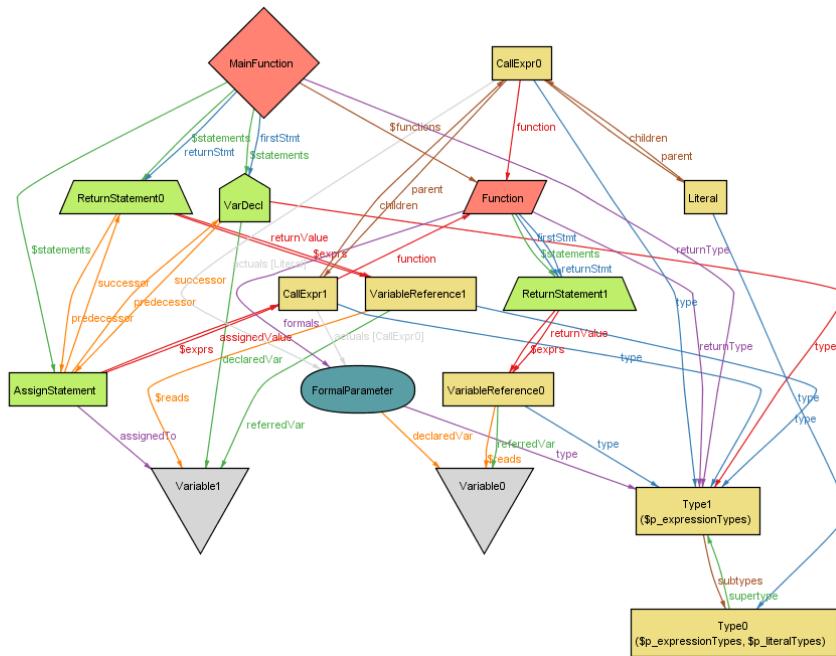


Instance 20

```

$exprs: 3
$functions: 1
$reads: 2
$statements: 4
actuals: 2
assignedTo: 1
assignedValue: 1
children: 2
declaredVar: 1
declaredVar: 1
firstStmt: 2
formals: 1
function: 2
parent: 2
predecessor: 2
referredVar: 2
returnStmt: 2
returnType: 2
returnValue: 2
subtypes: 1
successor: 2
superType: 1
type: 5
type: 1
type: 1

```

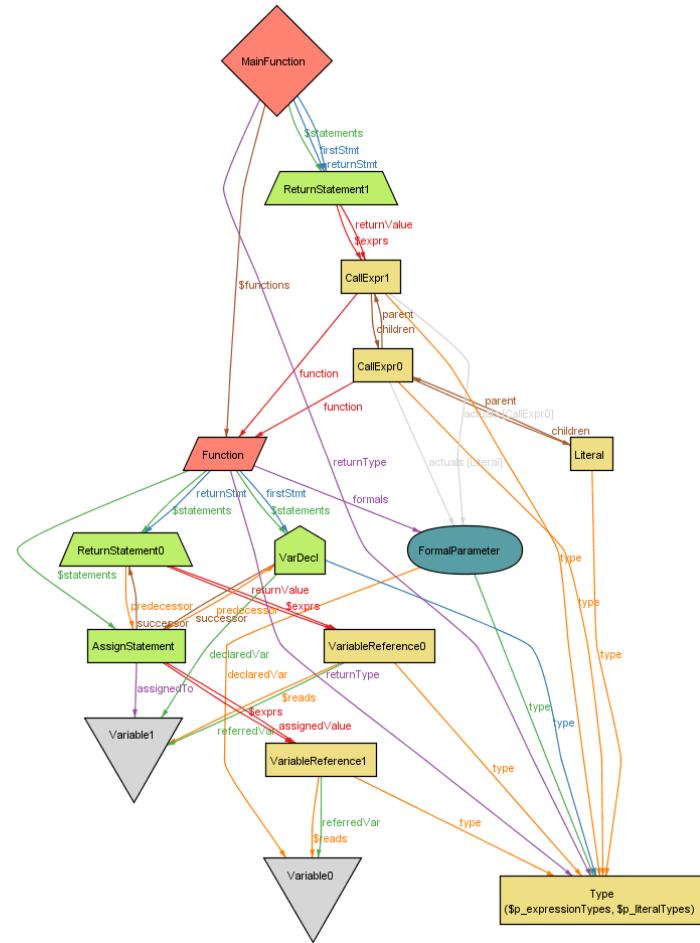


Instance 21

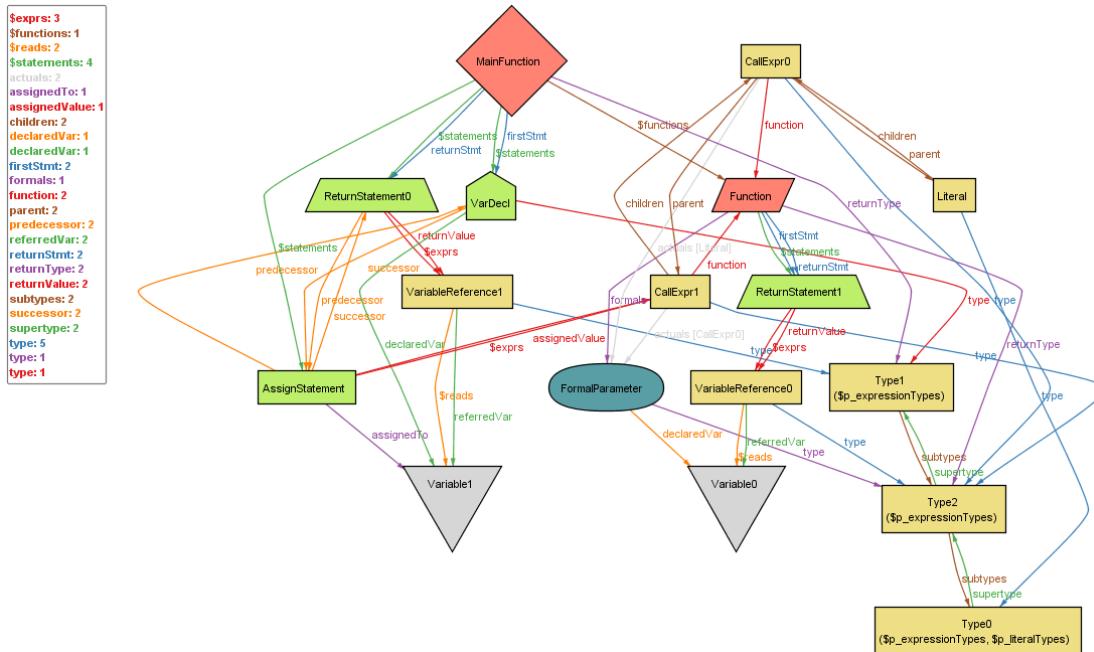
```

$exprs: 3
$functions: 1
$reads: 2
$statements: 4
actuals: 2
assignedTo: 1
assignedValue: 1
children: 2
declaredVar: 1
declaredVar: 1
firstStmt: 2
formals: 1
function: 2
parent: 2
predecessor: 2
referredVar: 2
returnStmt: 2
returnType: 2
returnValue: 2
subtypes: 2
successor: 2
superType: 1
type: 5
type: 1
type: 1

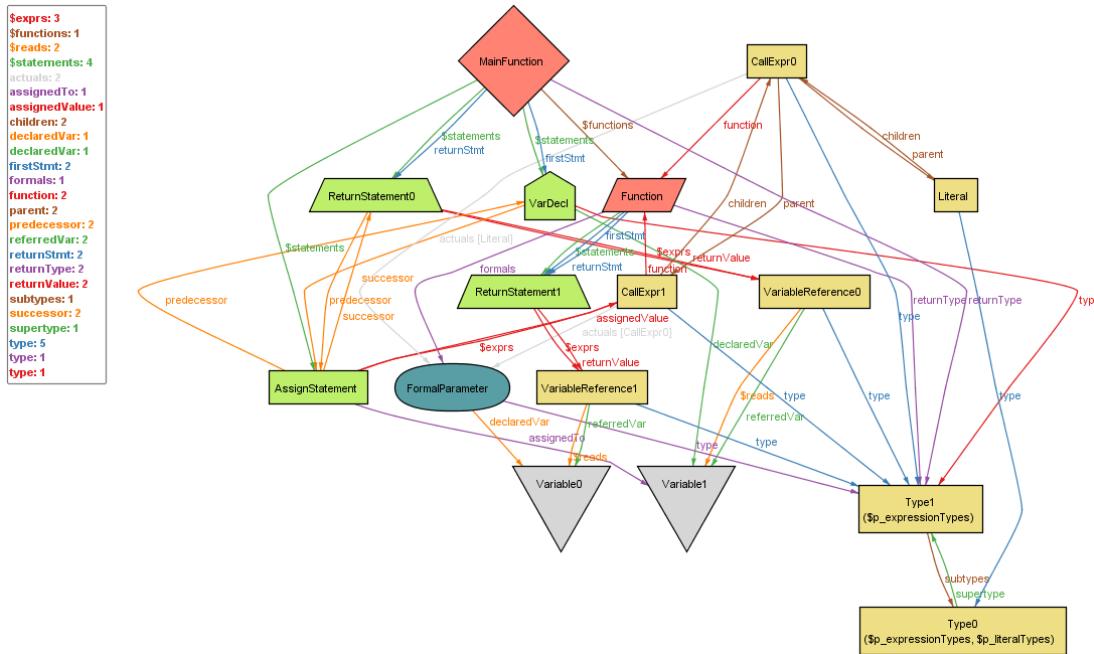
```



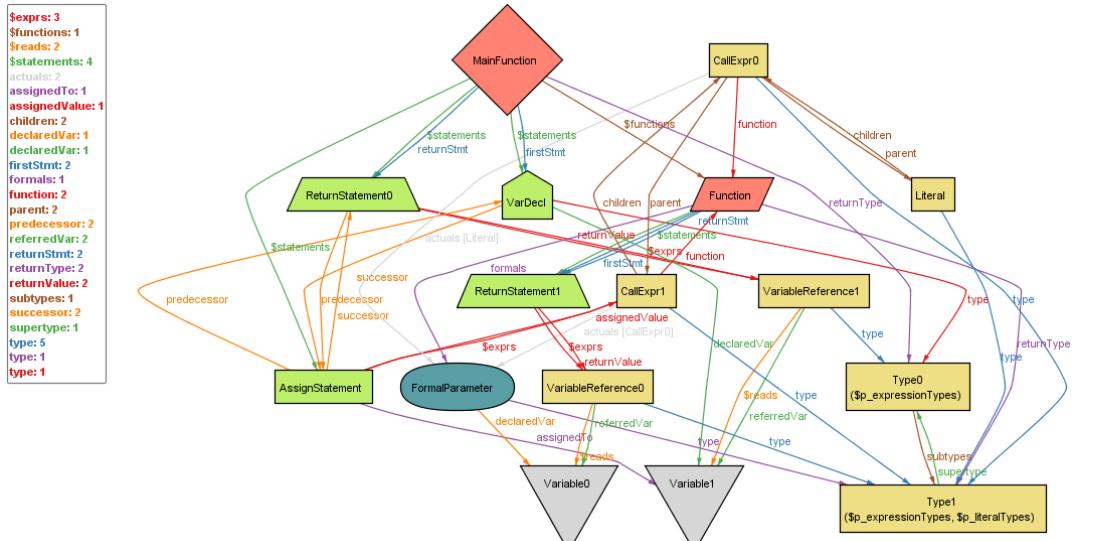
Instance 22



Instance 23



Instance 24

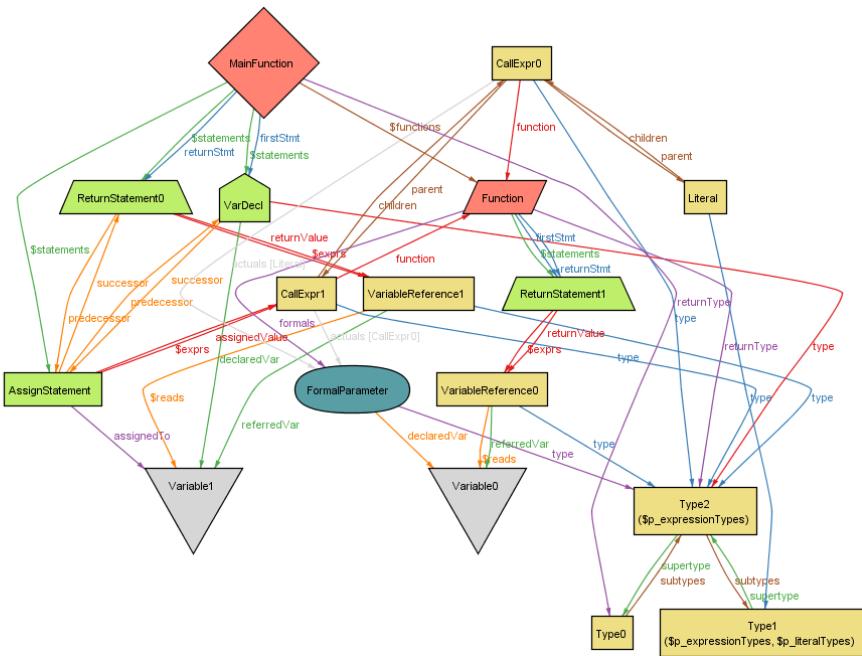


Instance 25

```

$exprs: 3
$functions: 1
$reads: 2
$statements: 4
actuals: 2
assignedTo: 1
assignedValue: 1
children: 2
declaredVar: 1
declaredVar: 1
firstStmt: 2
formals: 1
function: 2
parent: 2
predecessor: 2
referredVar: 2
returnStmt: 2
returnValue: 2
subtypes: 2
successor: 2
superType: 2
type: 5
type: 1
type: 1

```

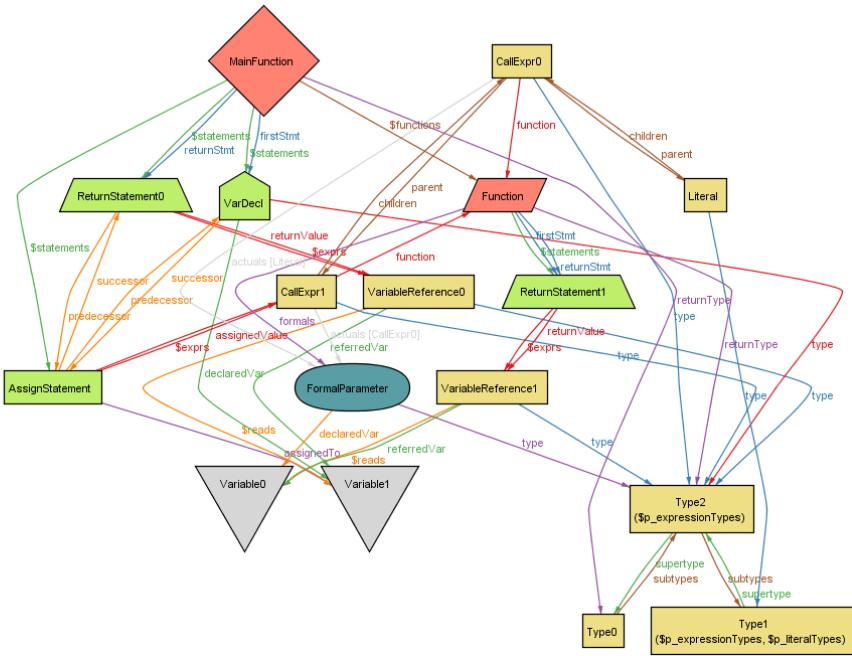


Instance 26

```

$exprs: 3
$functions: 1
$reads: 2
$statements: 4
actuals: 2
assignedTo: 1
assignedValue: 1
children: 2
declaredVar: 1
declaredVar: 1
firstStmt: 2
formals: 1
function: 2
parent: 2
predecessor: 2
referredVar: 2
returnStmt: 2
returnValue: 2
subtypes: 2
successor: 2
superType: 2
type: 5
type: 1
type: 1

```

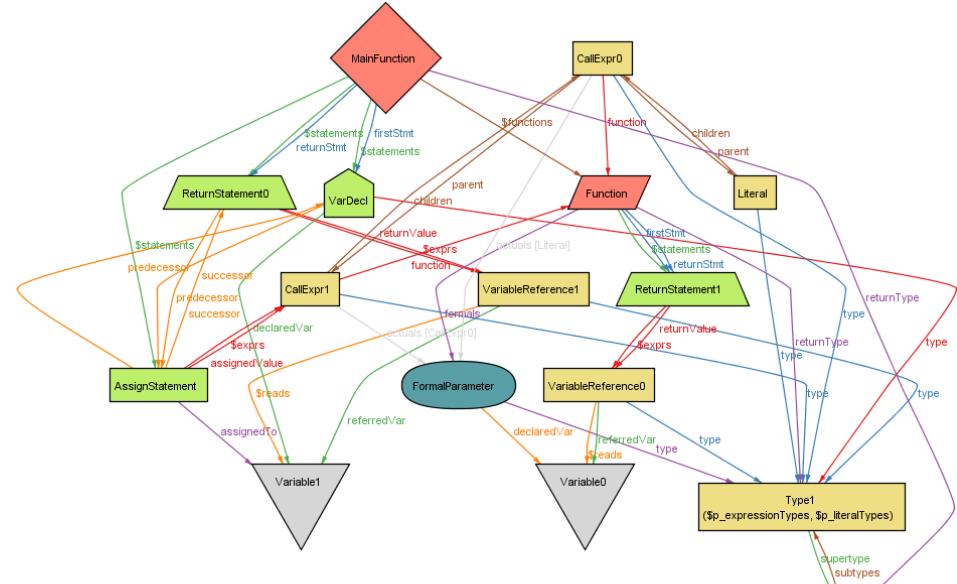


Instance 27

```

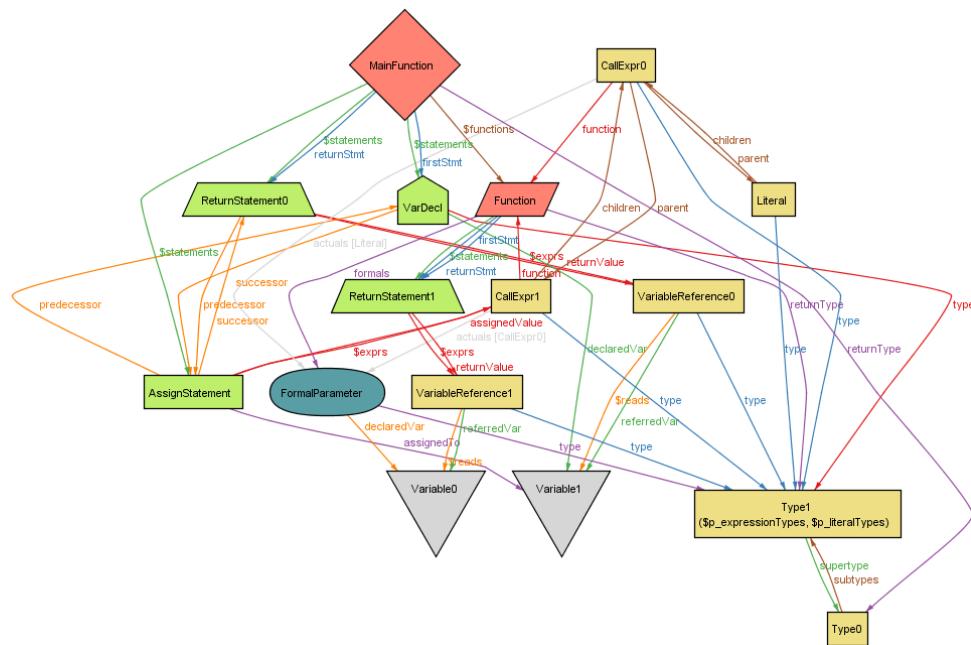
$exprs: 3
$functions: 1
$reads: 2
$statements: 4
actuals: 2
assignedTo: 1
assignedValue: 1
children: 2
declaredVar: 1
declaredVar: 1
firstStmt: 2
formals: 1
function: 2
parent: 2
predecessor: 2
referredVar: 2
returnStmt: 2
returnValue: 2
subtypes: 1
successor: 2
superType: 1
type: 5
type: 1
type: 1

```



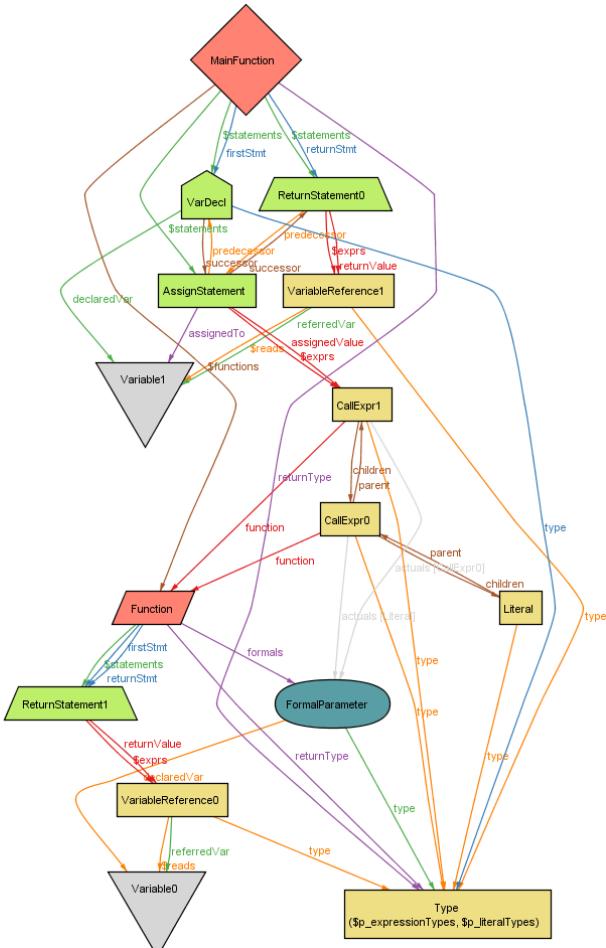
Instance 28

```
$exprs: 3
$functions: 1
$reads: 2
$statements: 4
actuals: 2
assignedTo: 1
assignedValue: 1
children: 2
declaredVar: 1
declaredVar: 1
firstStmt: 2
formals: 1
function: 2
parent: 2
predecessor: 2
referredVar: 2
returnStmt: 2
returnType: 2
returnValue: 2
subtypes: 1
successor: 2
superType: 1
type: 5
type: 1
type: 1
```



Instance 29

```
$exprs: 3
$functions: 1
$reads: 2
$statements: 4
actuals: 2
assignedTo: 1
assignedValue: 1
children: 2
declaredVar: 1
declaredVar: 1
firstStmt: 2
formals: 1
function: 2
parent: 2
predecessor: 2
referredVar: 2
returnStmt: 2
returnType: 2
returnValue: 2
successor: 2
superType: 1
type: 5
type: 1
type: 1
```

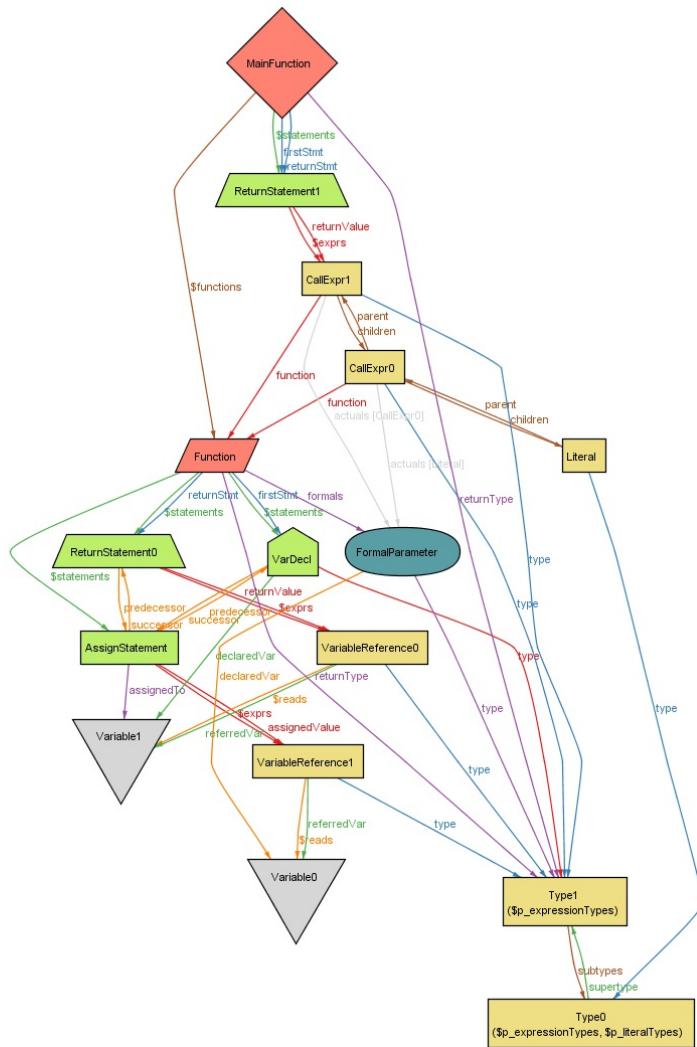


Instance 30

```

$exprs: 3
$functions: 1
$reads: 2
$statements: 4
actuals: 2
assignedTo: 1
assignedValue: 1
children: 2
declaredVar: 1
firstStmt: 2
formals: 1
function: 2
parent: 2
predecessor: 2
referredVar: 2
returnStmt: 2
returnType: 2
returnValue: 2
successor: 2
subtypes: 1
superType: 1
type: 5
type1: 1
type: 1
type: 1

```

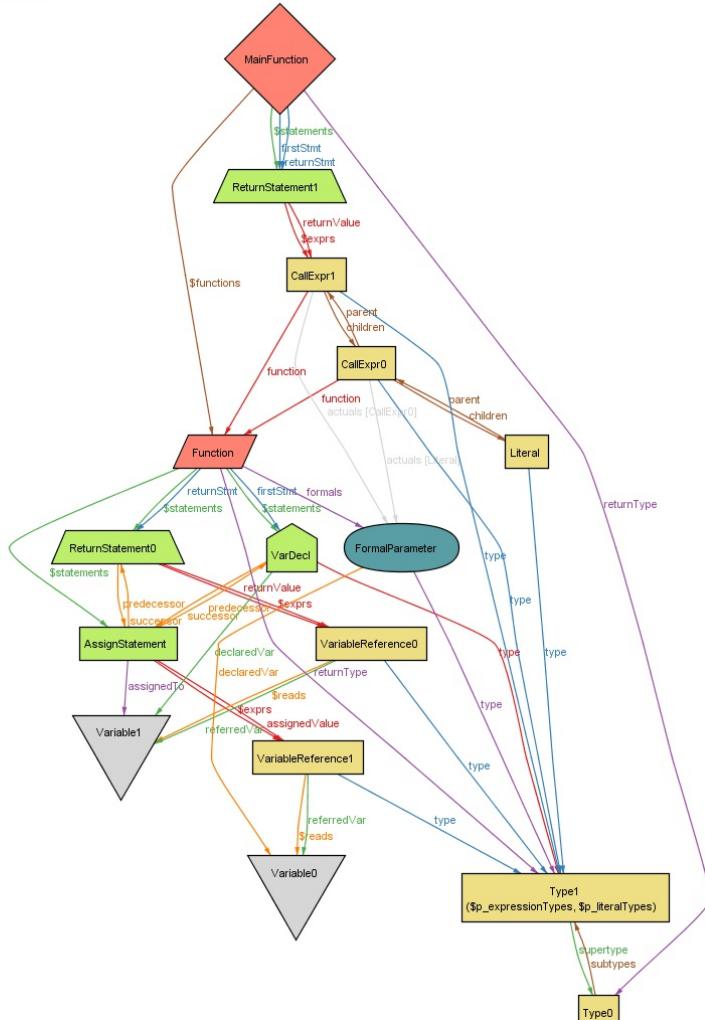


Instance 31

```

$exprs: 3
$functions: 1
$reads: 2
$statements: 4
actuals: 2
assignedTo: 1
assignedValue: 1
children: 2
declaredVar: 1
declarer: 1
firstStmt: 2
formals: 1
function: 2
parent: 2
predecessor: 2
referredVar: 2
returnStmt: 2
returnType: 2
returnValue: 2
successor: 2
superType: 1
type: 5
type: 1
type: 1

```



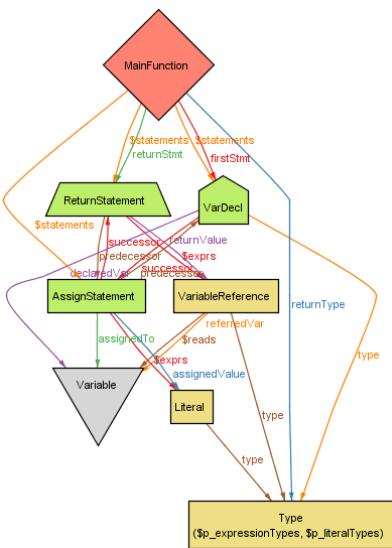
Instance 3

Instance 1

```

$exprs: 2
$reads: 1
$statements: 3
assignedTo: 1
assignedValue: 1
declaredVar: 1
firstStmt: 1
predecessor: 2
referredVar: 1
returnStmt: 1
returnType: 1
returnValue: 1
successor: 2
type: 2
type: 1

```



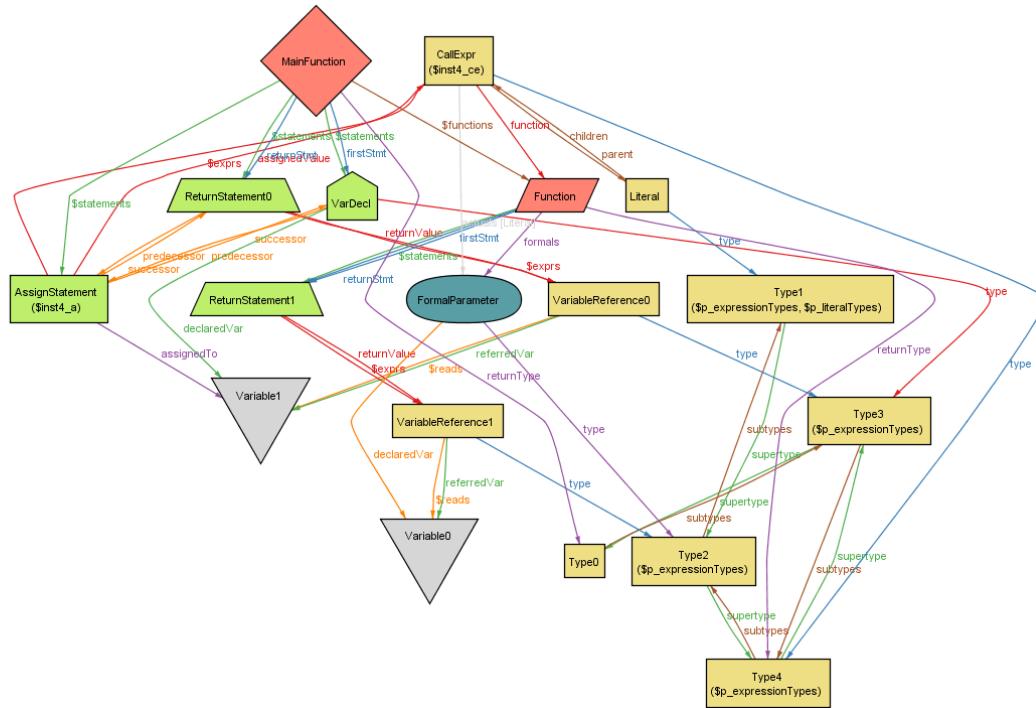
Instance 4

Instance 1

```

$exprs: 3
$functions: 1
$reads: 2
$statements: 4
actuals: 1
assignedValue: 1
children: 1
declaredVar: 1
declaredVar: 1
firstStmt: 2
formals: 1
function: 1
parent: 1
predecessor: 2
referedVar: 2
returnStmt: 2
returnType: 2
returnValue: 2
subtypes: 4
successor: 2
superType: 4
type: 4
type: 1
type: 1

```

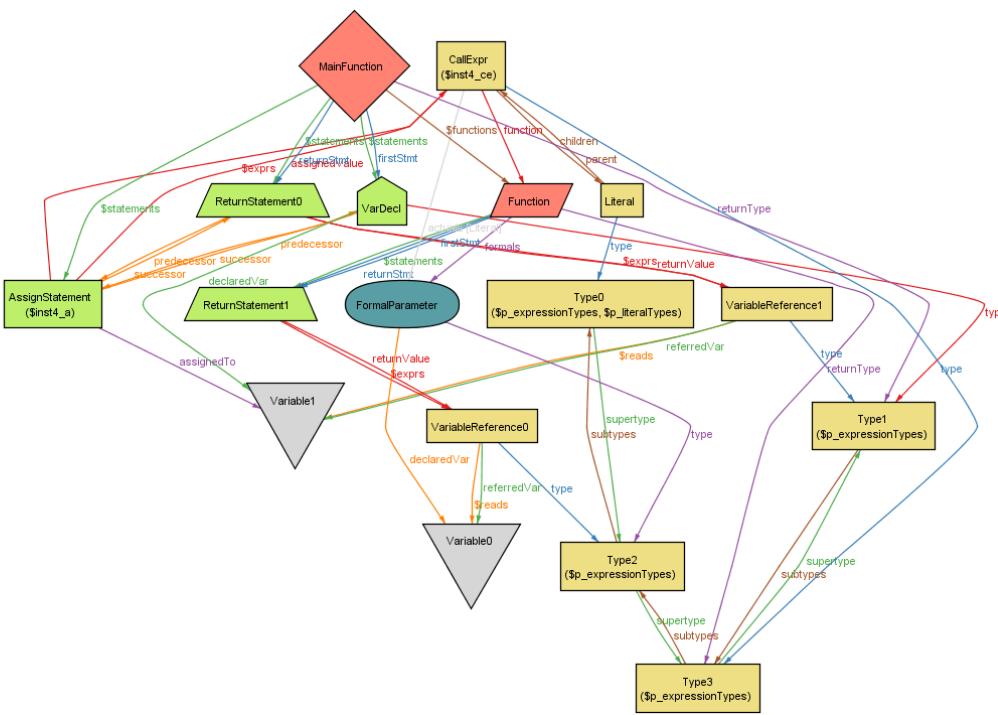


Instance 2

```

$exprs: 3
$functions: 1
$reads: 2
$statements: 4
actuals: 1
assignedValue: 1
children: 1
declaredVar: 1
declaredVar: 1
firstStmt: 2
formals: 1
function: 1
parent: 1
predecessor: 2
referedVar: 2
returnStmt: 2
returnType: 2
returnValue: 2
subtypes: 3
successor: 2
superType: 3
type: 4
type: 1
type: 1

```

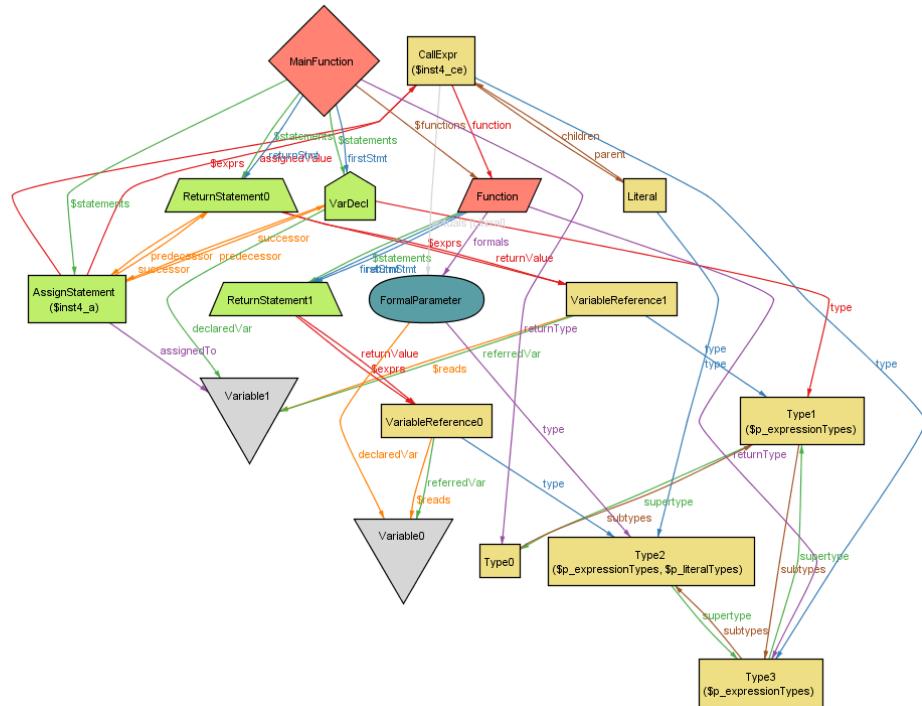


Instance 3

```

$exprs: 3
$reads: 1
$statements: 2
$functions: 4
actuals: 1
assignedTo: 1
assignedValue: 1
children: 1
declaredVar: 1
declaredVar: 1
firstStmt: 2
formals: 1
function: 1
parent: 1
predecessor: 2
referedVar: 2
returnStmt: 2
returnType: 2
returnValue: 2
subtypes: 3
successor: 2
superType: 3
type: 4
type: 1
type: 1

```

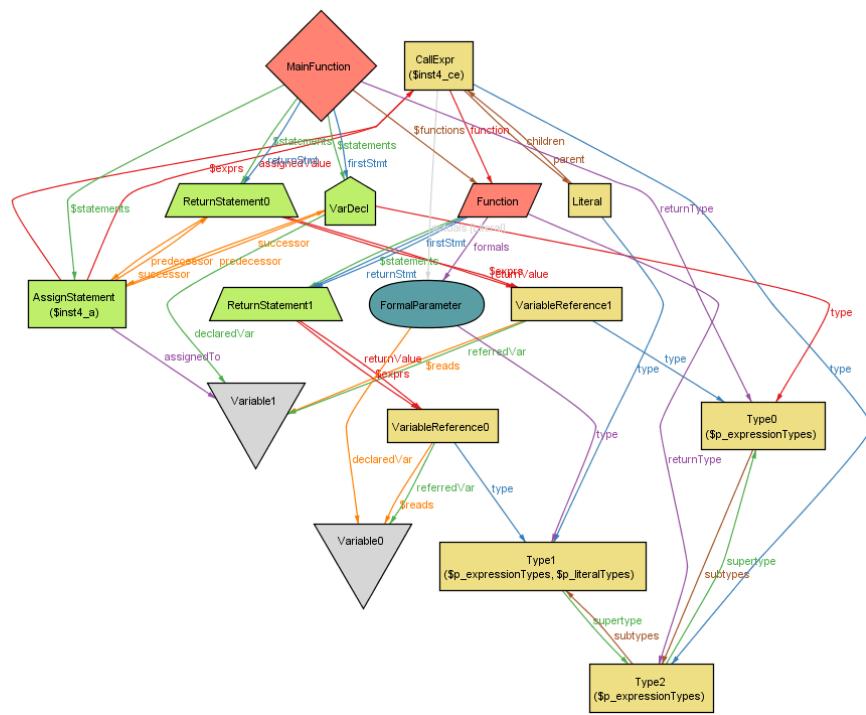


Instance 4

```

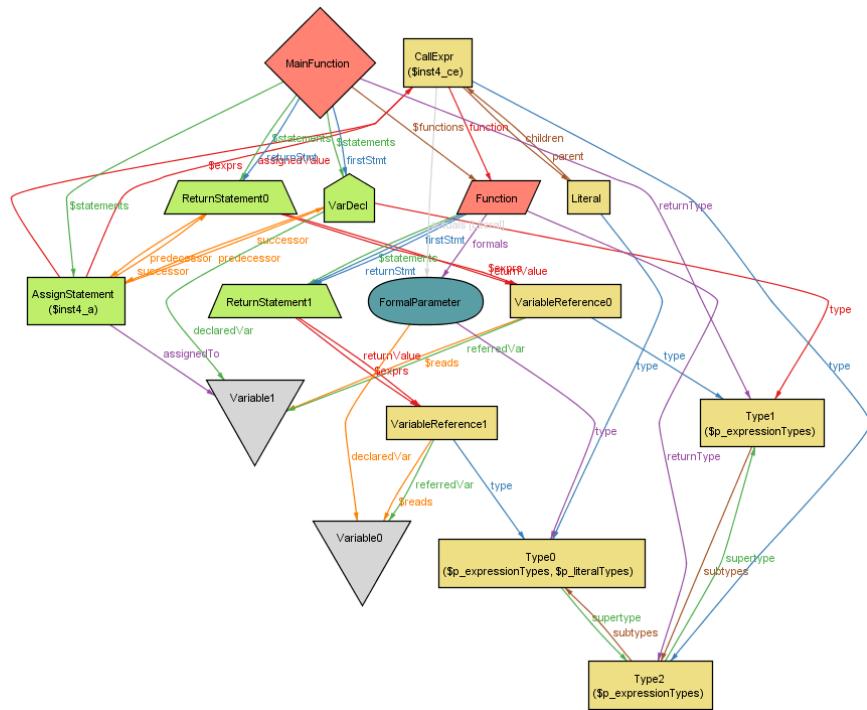
$exprs: 3
$reads: 1
$statements: 2
$functions: 4
actuals: 1
assignedTo: 1
assignedValue: 1
children: 1
declaredVar: 1
declaredVar: 1
firstStmt: 2
formals: 1
function: 1
parent: 1
predecessor: 2
referedVar: 2
returnStmt: 2
returnType: 2
returnValue: 2
subtypes: 2
successor: 2
superType: 2
type: 4
type: 1
type: 1

```



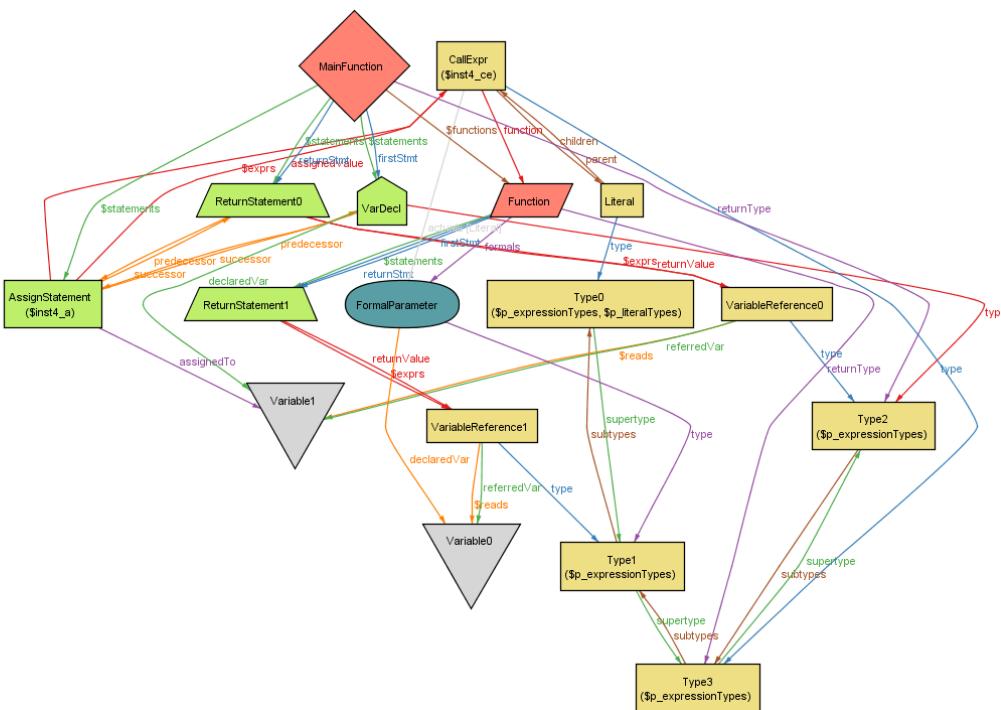
Instance 5

```
$exprs: 3  
$functions: 1  
$reads: 2  
$statements: 4  
$actuals: 1  
assignedTo: 1  
assignedValue: 1  
children: 1  
declaredVar: 1  
declaredVar: 1  
firstStmt: 2  
forms: 1  
function: 1  
parent: 1  
predecessor: 2  
referedVar: 2  
return Stmt: 2  
returnType: 2  
returnValue: 2  
subtypes: 2  
successor: 2  
super type: 2  
type: 4  
type: 1  
type: 1
```



Instance 6

```
$exprs: 3  
$functions: 1  
$reads: 2  
$statements: 4  
actuals: 1  
assignedTo: 1  
assignedValue: 1  
children: 1  
declaredVar: 1  
declaredVar: 1  
firstStmt: 2  
formals: 1  
function: 1  
parent: 1  
predecessor: 2  
REFERREDVAR: 2  
returnStmt: 2  
returnType: 2  
returnValue: 2  
subtypes: 3  
successor: 2  
superType: 3  
type: 4  
type: 1  
type: 1
```

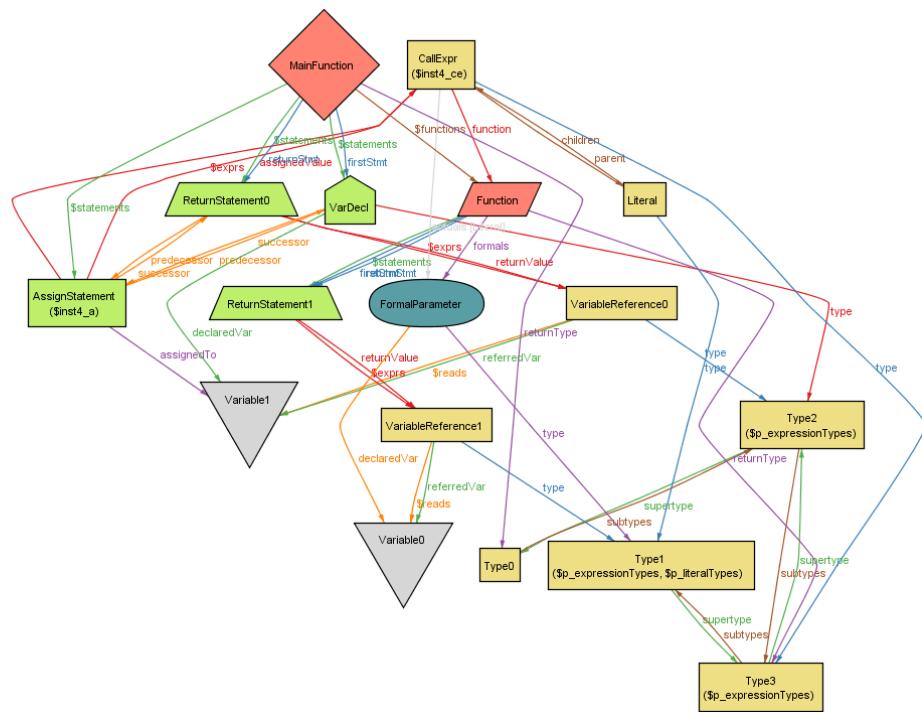


Instance 7

```

$exprs: 3
$functions: 1
$reads: 2
$statements: 4
actuals: 1
assignedValue: 1
children: 1
declaredVar: 1
declaredVar: 1
firstStmt: 2
formals: 1
function: 1
parent: 1
predecessor: 2
referedVar: 2
returnStmt: 2
returnType: 2
returnValue: 2
subtypes: 3
successor: 2
superType: 3
type: 4
type: 1
type: 1

```

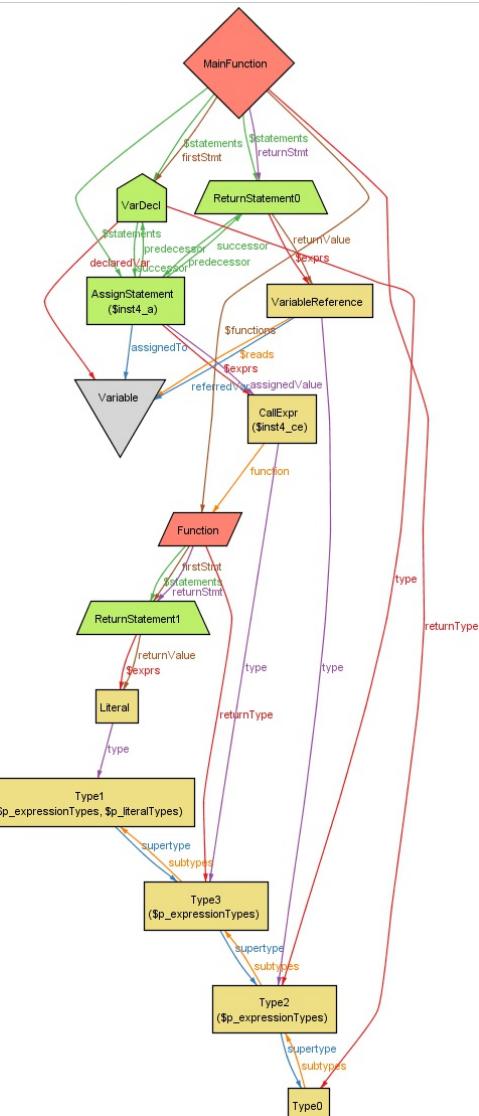


Instance 8

```

$exprs: 3
$functions: 1
$reads: 1
$statements: 4
actuals: 1
assignedValue: 1
children: 1
declaredVar: 1
declaredVar: 1
firstStmt: 2
function: 1
parent: 1
predecessor: 2
referedVar: 2
returnStmt: 2
returnType: 2
returnValue: 2
subtypes: 3
successor: 2
superType: 3
type: 3
type: 1
type: 1

```

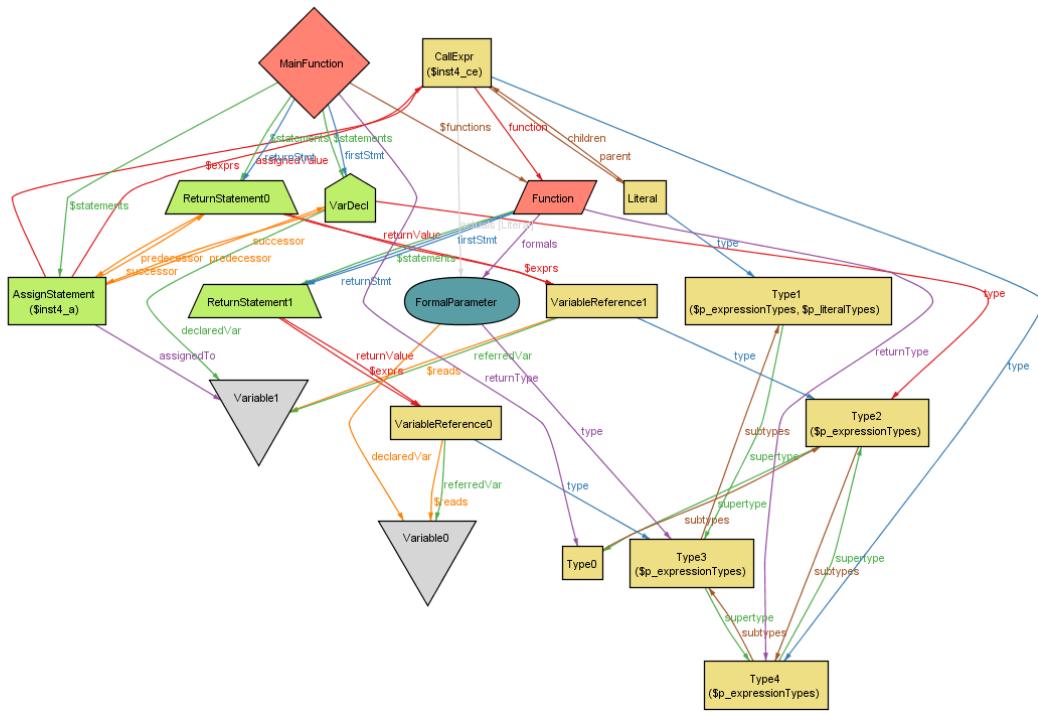


Instance 9

```

$exprs: 3
$functions: 1
$reads: 2
$statements: 4
actuals: 1
assignedTo: 1
assignedValue: 1
children: 1
declaredVar: 1
declarerVar: 1
firstStmt: 2
formals: 1
function: 1
parent: 1
predecessor: 2
referVar: 2
returnStmt: 2
returnType: 2
returnValue: 2
subtypes: 4
successor: 2
superType: 4
type: 4
type: 1
type: 1

```

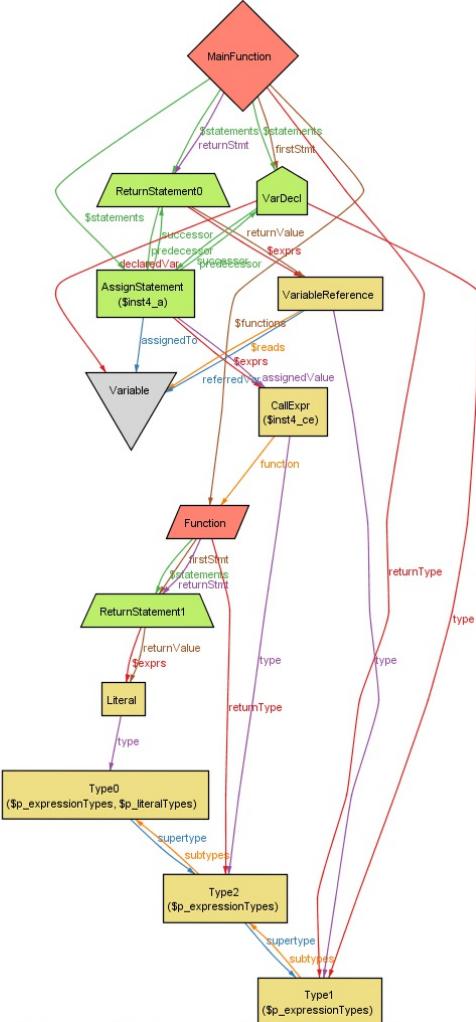


Instance 10

```

$exprs: 3
$functions: 1
$reads: 1
$statements: 4
actuals: 1
assignedTo: 1
assignedValue: 1
declaredVar: 1
firstStmt: 2
function: 1
predecessor: 2
referVar: 2
returnStmt: 2
returnType: 2
returnValue: 2
subtypes: 2
successor: 2
superType: 2
type: 3
type: 1

```



Instances that are not feasible in task E

- Instance 3 is not feasible ...
- Instance 5 is not feasible ...

Image exports from task E

Instance 2

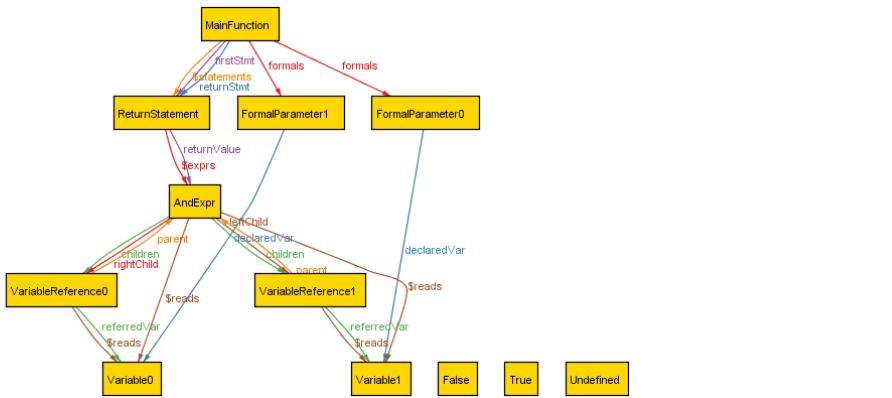
(truncated to 50 items)

Instance 1

```

$exprs: 1
$reads: 4
$statements: 1
children: 2
declaredVar: 2
firstStmt: 1
formals: 2
leftChild: 1
parent: 2
referredVar: 2
returnStmt: 1
returnValue: 1
rightChild: 1

```

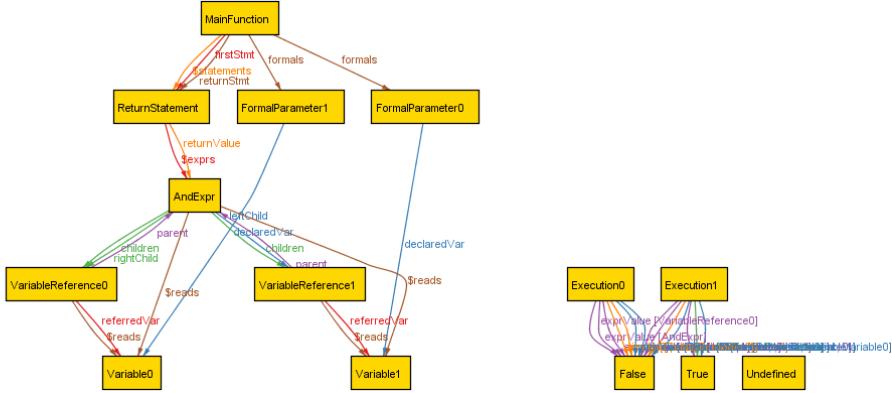


Instance 2

```

$exprs: 1
$reads: 4
$statements: 1
children: 2
declaredVar: 2
exprValue: 6
firstStmt: 1
formals: 2
inputs: 3
inputs: 1
leftChild: 1
parent: 2
referredVar: 2
returnStmt: 1
returnValue: 1
rightChild: 1
varValue: 4

```

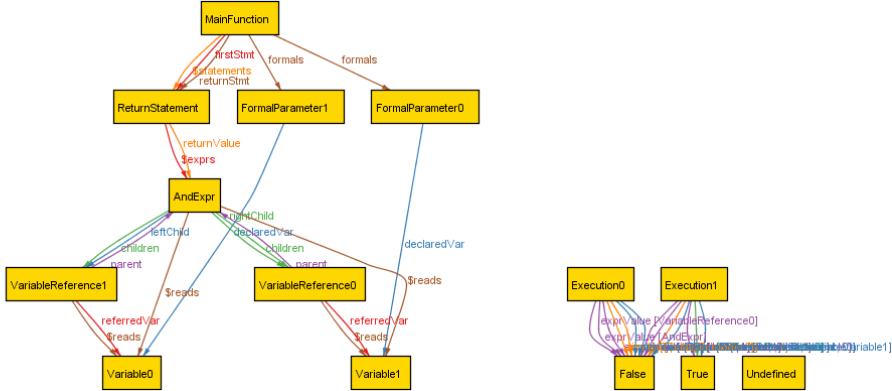


Instance 3

```

$exprs: 1
$reads: 4
$statements: 1
children: 2
declaredVar: 2
exprValue: 6
firstStmt: 1
formals: 2
inputs: 3
inputs: 1
leftChild: 1
parent: 2
referredVar: 2
returnStmt: 1
returnValue: 1
rightChild: 1
varValue: 4

```

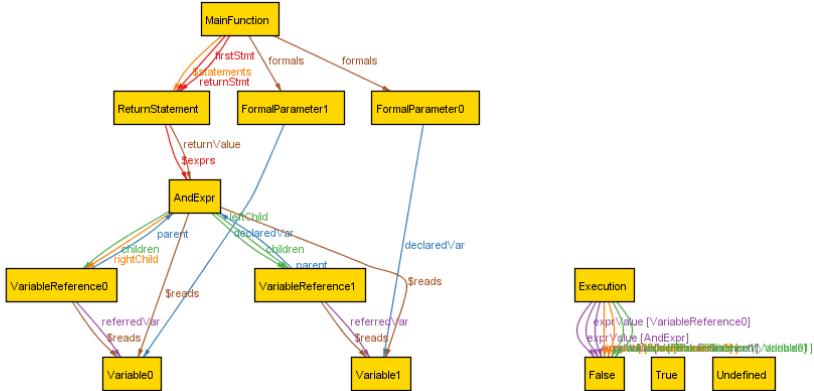


Instance 4

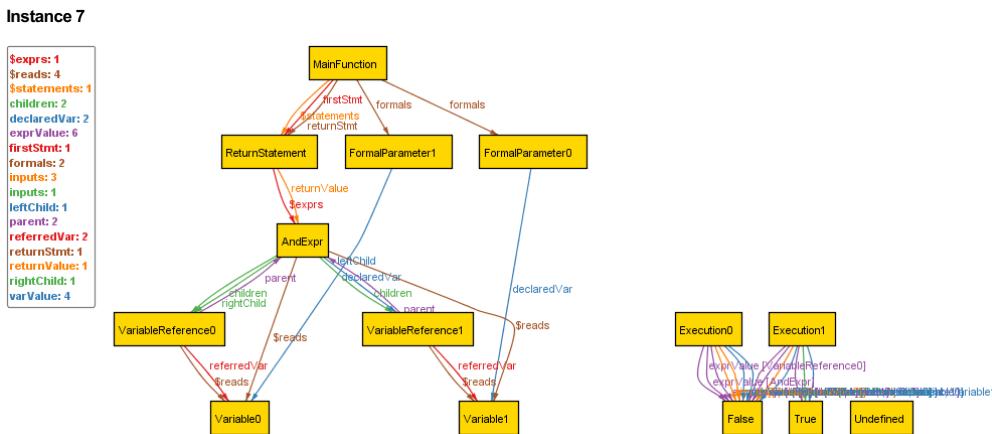
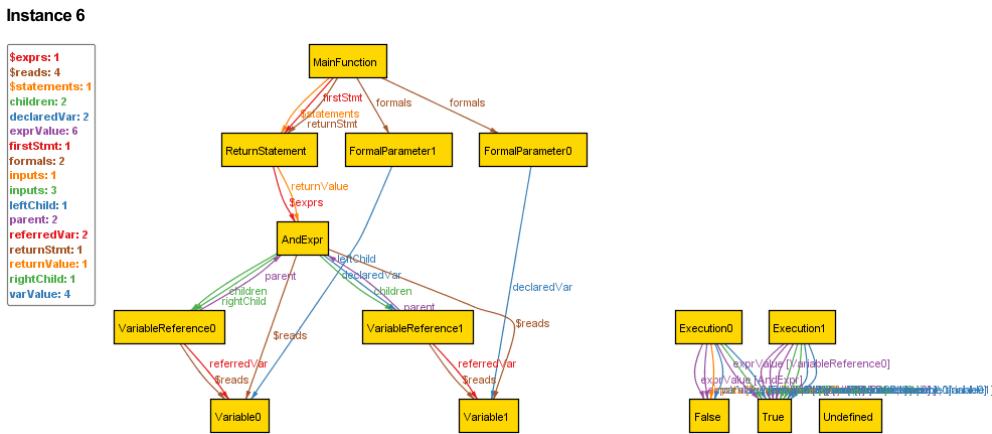
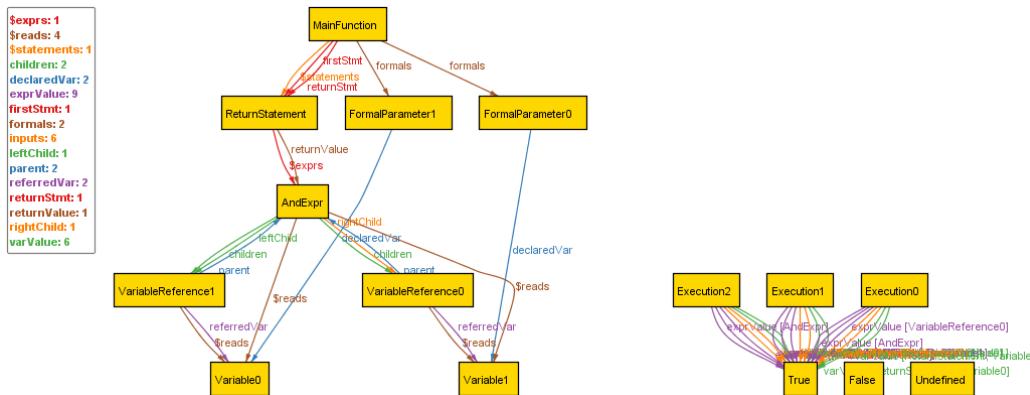
```

$exprs: 1
$reads: 4
$statements: 1
children: 2
declaredVar: 2
exprValue: 3
firstStmt: 1
formals: 2
inputs: 2
leftChild: 1
parent: 2
referredVar: 2
returnStmt: 1
returnValue: 1
rightChild: 1
varValue: 2

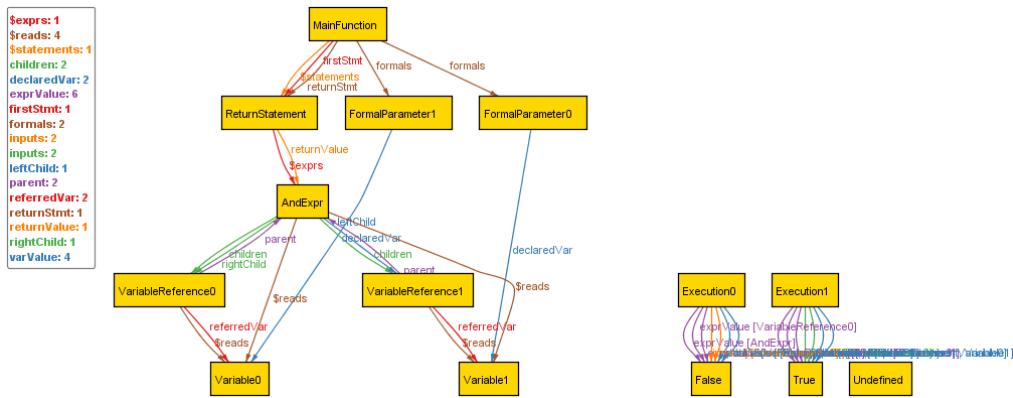
```



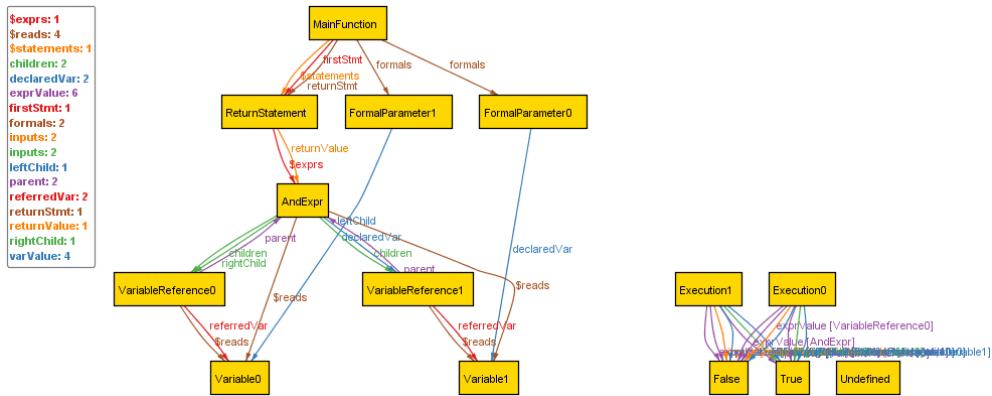
Instance 5



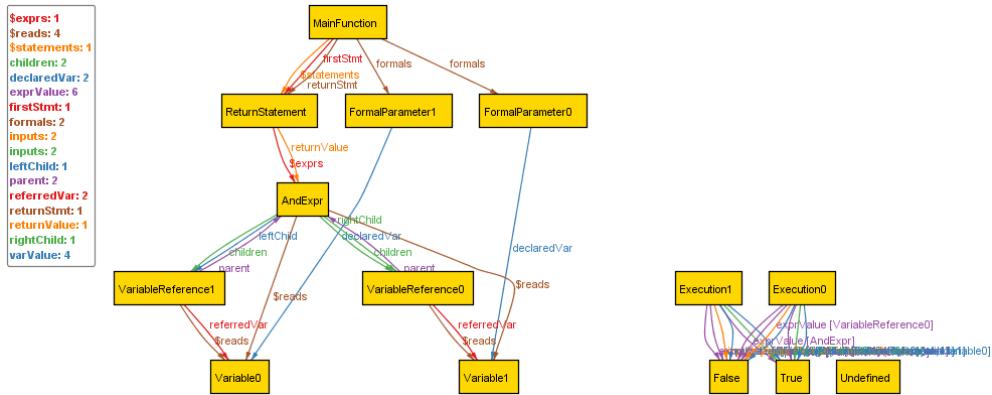
Instance 9



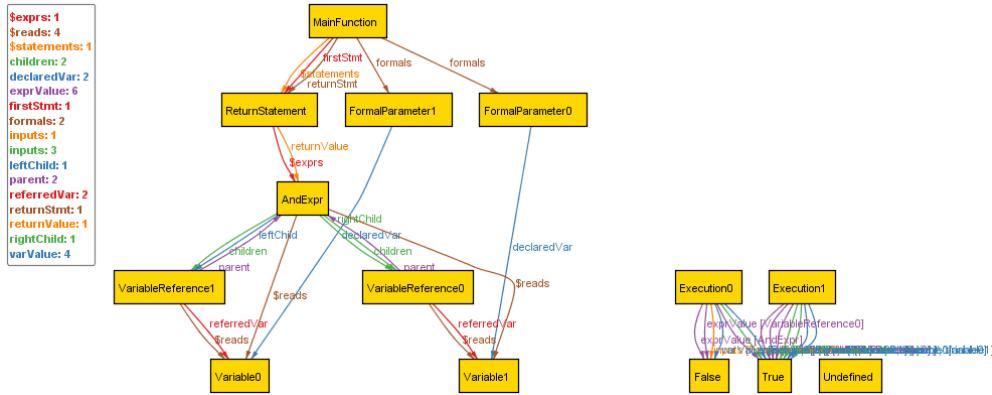
Instance 10



Instance 11



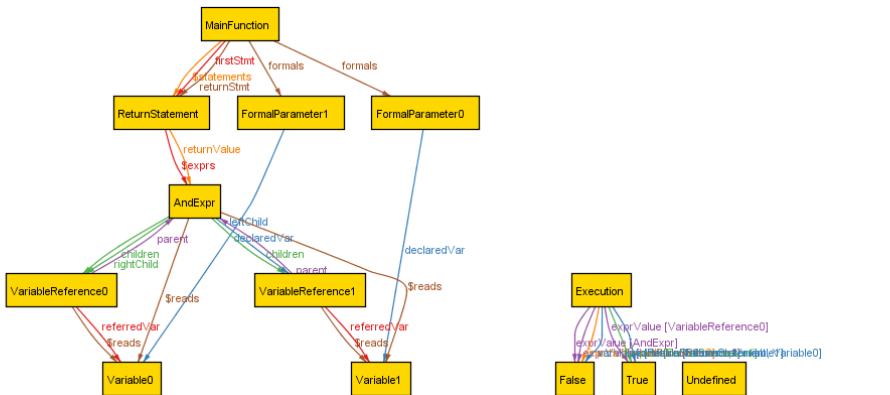
Instance 12



```

$exprs: 1
$reads: 4
$statements: 1
children: 2
declaredVar: 2
exprValue: 3
firstStmt: 1
formals: 2
inputs: 1
inputs: 1
leftChild: 1
parent: 2
referredVar: 2
returnStmt: 1
returnValue: 1
rightChild: 1
varValue: 2

```

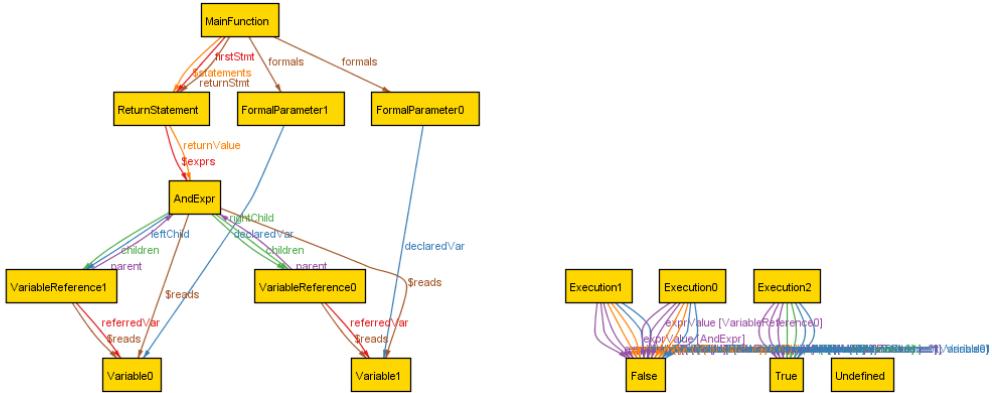


Instance 14

```

$exprs: 1
$reads: 4
$statements: 1
children: 2
declaredVar: 2
exprValue: 9
firstStmt: 1
formals: 2
inputs: 4
inputs: 2
leftChild: 1
parent: 2
referredVar: 2
returnStmt: 1
returnValue: 1
rightChild: 1
varValue: 6

```

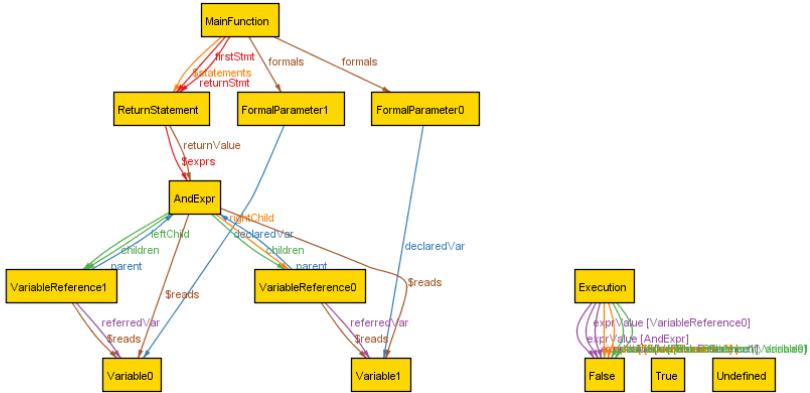


Instance 15

```

$exprs: 1
$reads: 4
$statements: 1
children: 2
declaredVar: 2
exprValue: 3
firstStmt: 1
formals: 2
inputs: 2
leftChild: 1
parent: 2
referredVar: 2
returnStmt: 1
returnValue: 1
rightChild: 1
varValue: 2

```

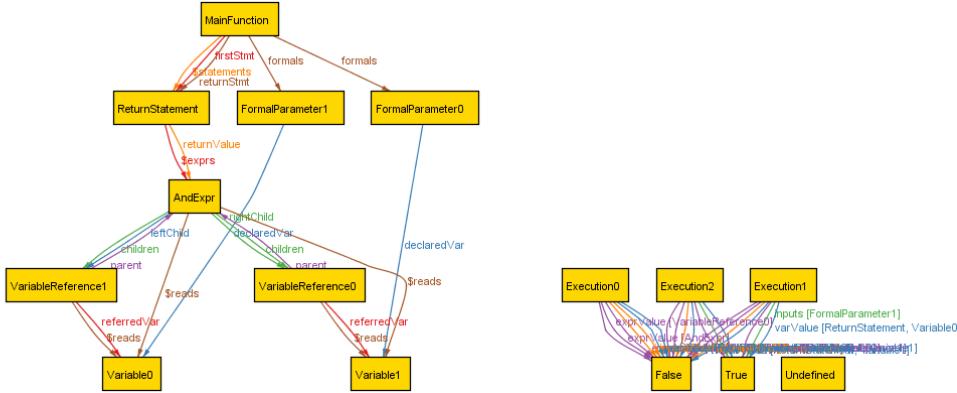


Instance 16

```

$exprs: 1
$reads: 4
$statements: 1
children: 2
declaredVar: 2
exprValue: 9
firstStmt: 1
formals: 2
inputs: 4
inputs: 2
leftChild: 1
parent: 2
referredVar: 2
returnStmt: 1
returnValue: 1
rightChild: 1
varValue: 6

```

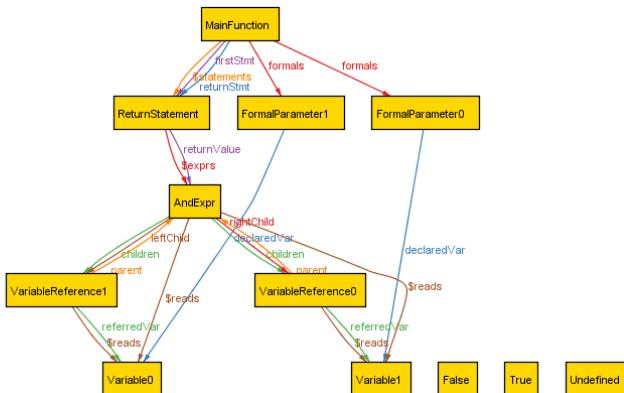


Instance 17

```

$exprs: 1
$reads: 4
$statements: 1
children: 2
declaredVar: 2
firstStmt: 1
formals: 2
leftChild: 1
parent: 2
referredVar: 2
returnStmt: 1
returnValue: 1
rightChild: 1

```

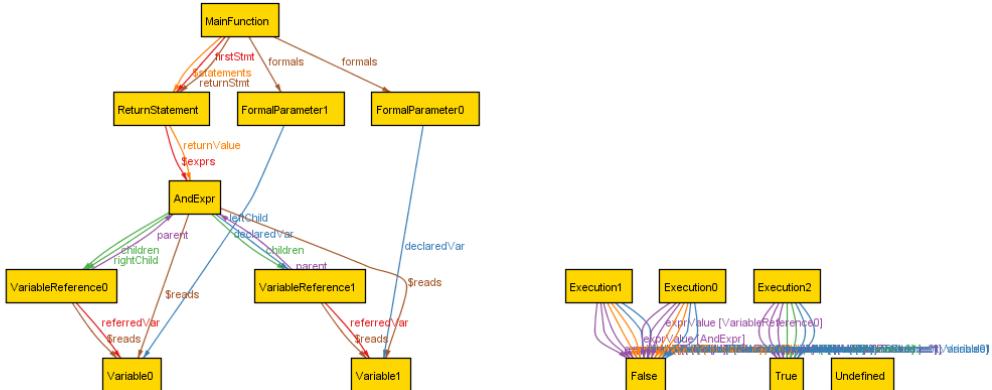


Instance 18

```

$exprs: 1
$reads: 4
$statements: 1
children: 2
declaredVar: 2
exprValue: 9
firstStmt: 1
formals: 2
inputs: 4
inputs: 2
leftChild: 1
parent: 2
referredVar: 2
returnStmt: 1
returnValue: 1
rightChild: 1
varValue: 6

```

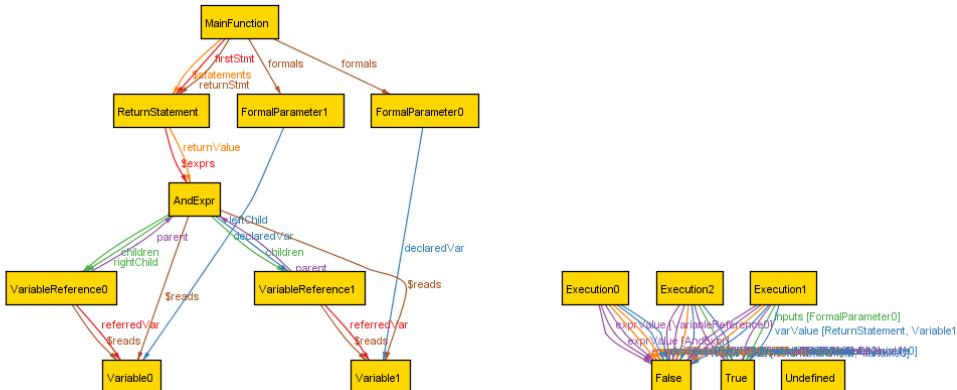


Instance 19

```

$exprs: 1
$reads: 4
$statements: 1
children: 2
declaredVar: 2
exprValue: 9
firstStmt: 1
formals: 2
inputs: 4
inputs: 2
leftChild: 1
parent: 2
referredVar: 2
returnStmt: 1
returnValue: 1
rightChild: 1
varValue: 6

```

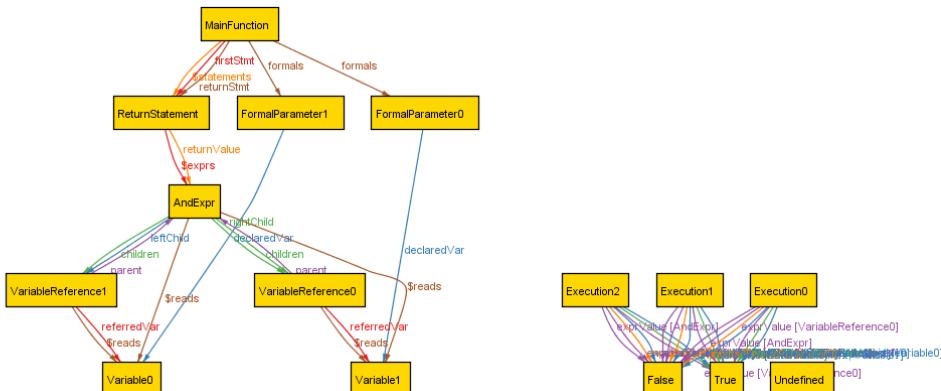


Instance 20

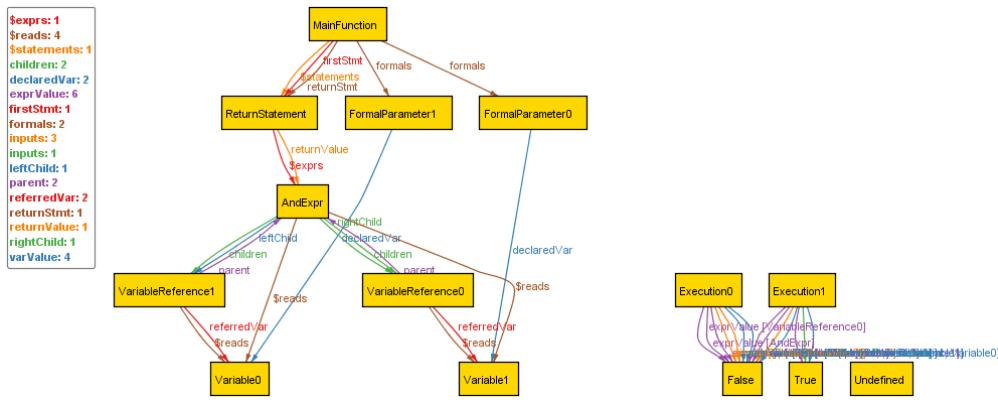
```

$exprs: 1
$reads: 4
$statements: 1
children: 2
declaredVar: 2
exprValue: 9
firstStmt: 1
formals: 2
inputs: 3
inputs: 3
leftChild: 1
parent: 2
referredVar: 2
returnStmt: 1
returnValue: 1
rightChild: 1
varValue: 6

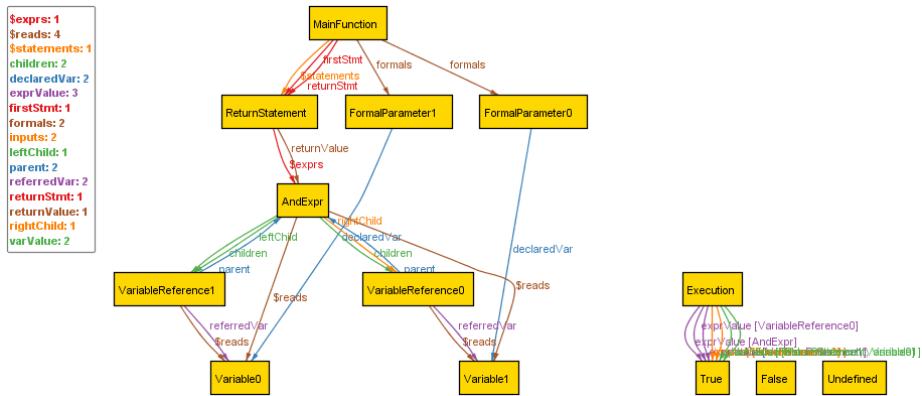
```



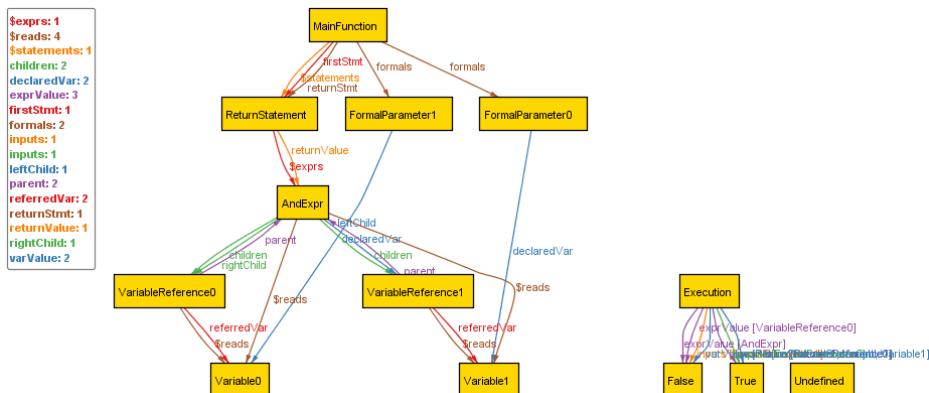
Instance 21



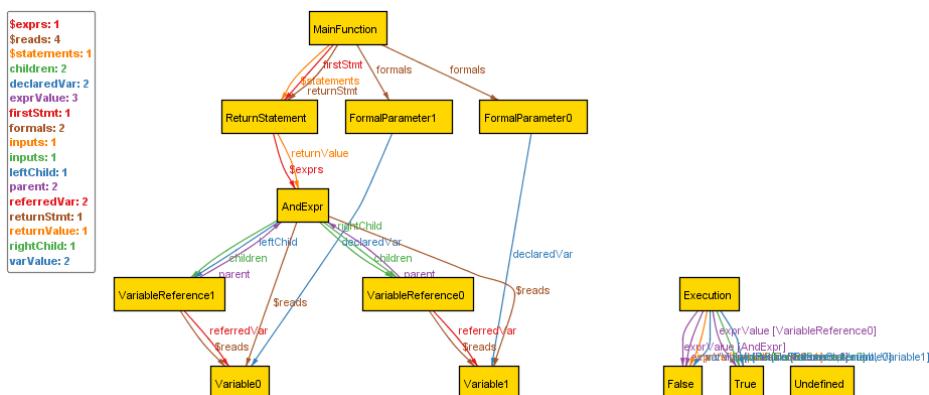
Instance 22



Instance 23



Instance 24

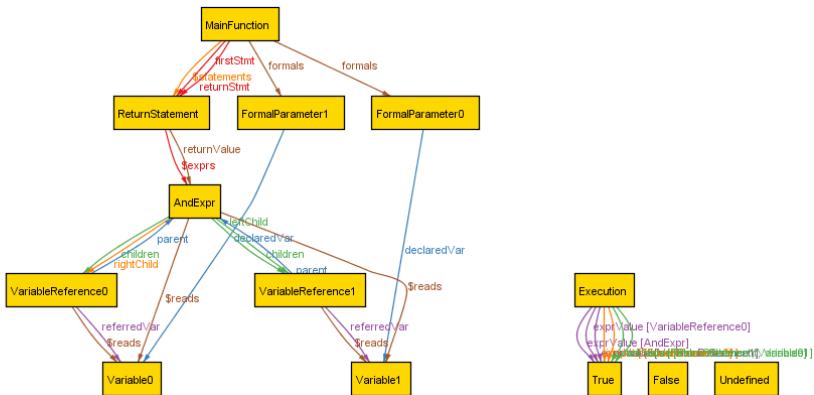


Instance 25

```

$exprs: 1
$reads: 4
$statements: 1
children: 2
declaredVar: 2
exprValue: 3
firstStmt: 1
formals: 2
inputs: 2
leftChild: 1
parent: 2
referedVar: 2
returnStmt: 1
returnValue: 1
rightChild: 1
varValue: 2

```

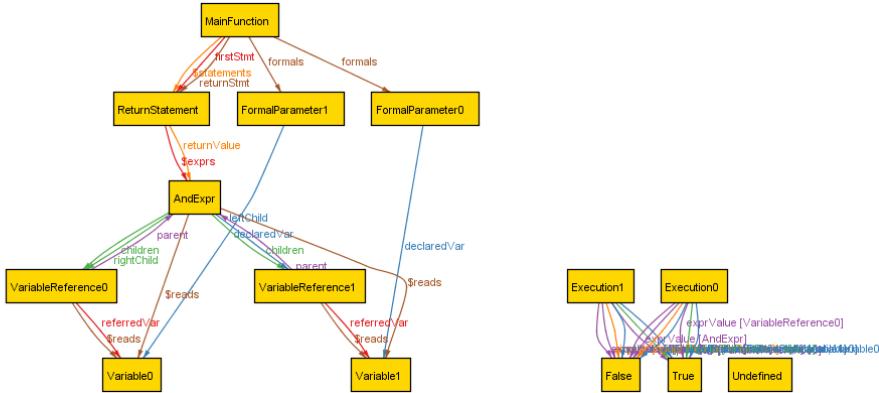


Instance 26

```

$exprs: 1
$reads: 4
$statements: 1
children: 2
declaredVar: 2
exprValue: 6
firstStmt: 1
formals: 2
inputs: 2
inputs: 2
leftChild: 1
parent: 2
referedVar: 2
returnStmt: 1
returnValue: 1
rightChild: 1
varValue: 4

```

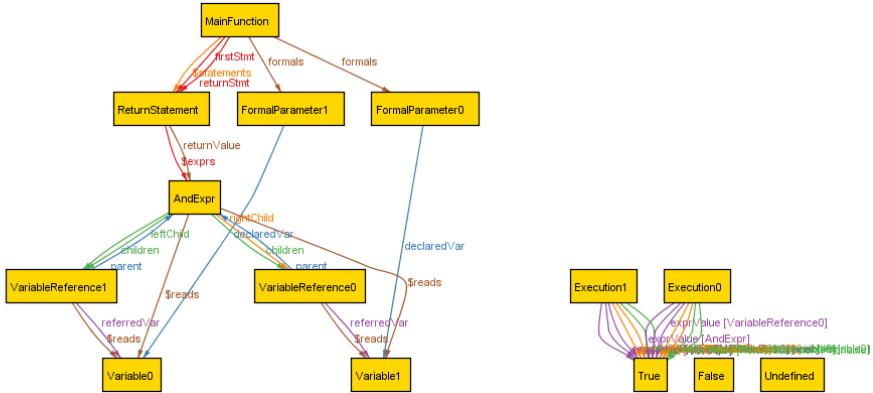


Instance 27

```

$exprs: 1
$reads: 4
$statements: 1
children: 2
declaredVar: 2
exprValue: 6
firstStmt: 1
formals: 2
inputs: 4
leftChild: 1
parent: 2
referedVar: 2
returnStmt: 1
returnValue: 1
rightChild: 1
varValue: 4

```

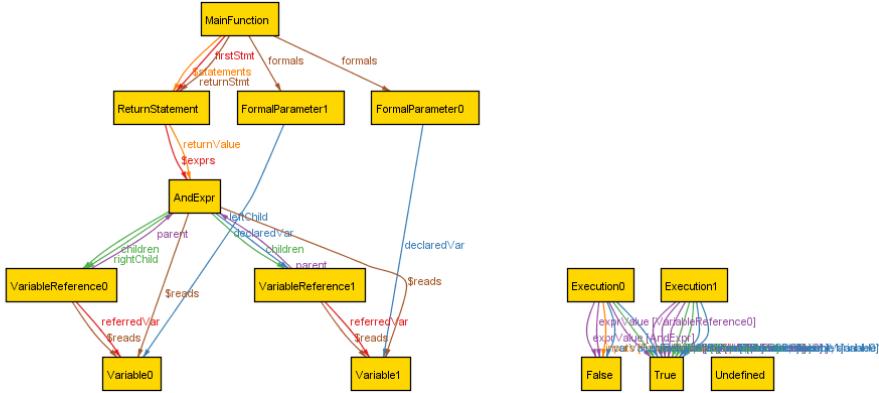


Instance 28

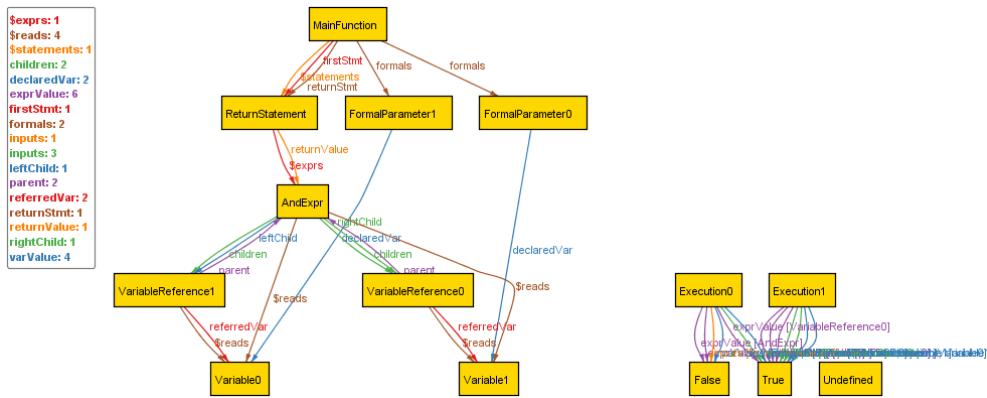
```

$exprs: 1
$reads: 4
$statements: 1
children: 2
declaredVar: 2
exprValue: 6
firstStmt: 1
formals: 2
inputs: 1
inputs: 3
leftChild: 1
parent: 2
referedVar: 2
returnStmt: 1
returnValue: 1
rightChild: 1
varValue: 4

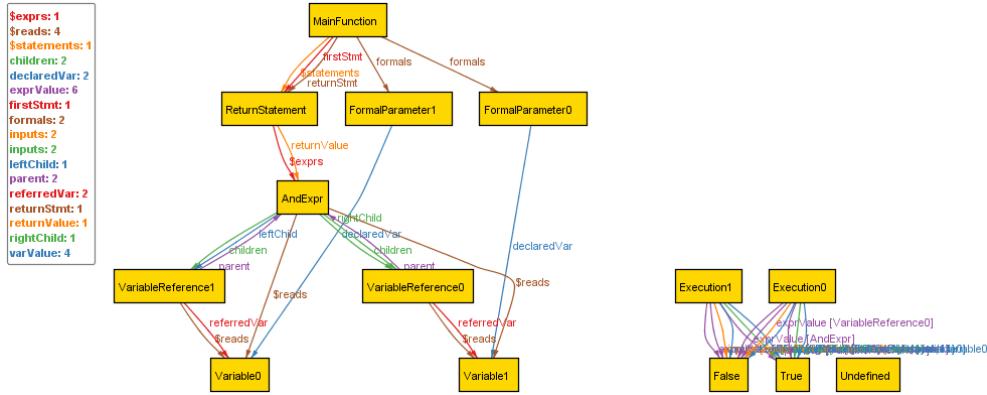
```



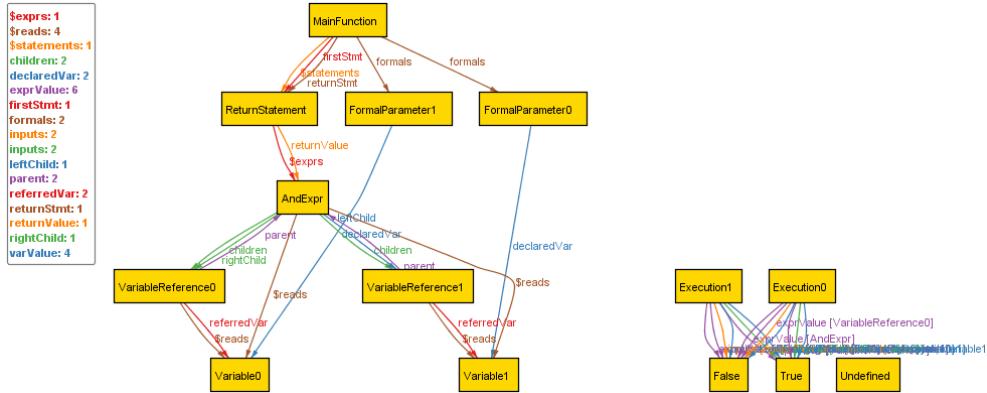
Instance 29



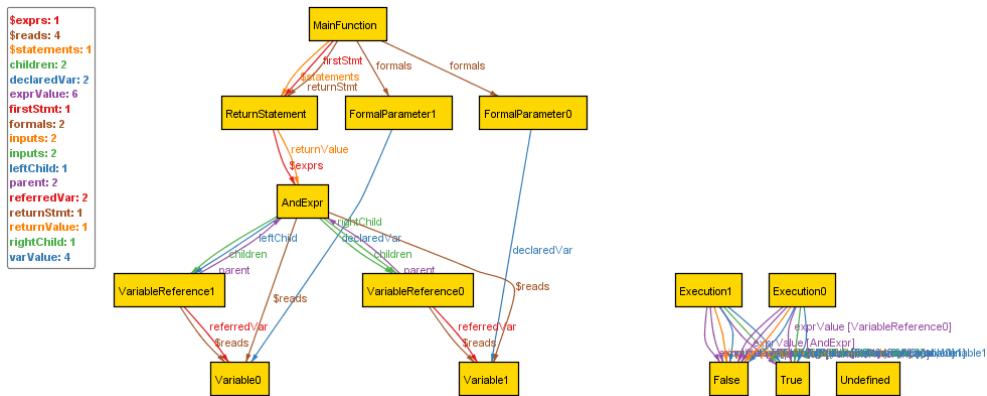
Instance 30

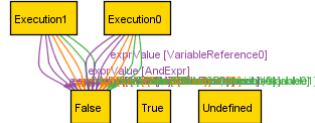
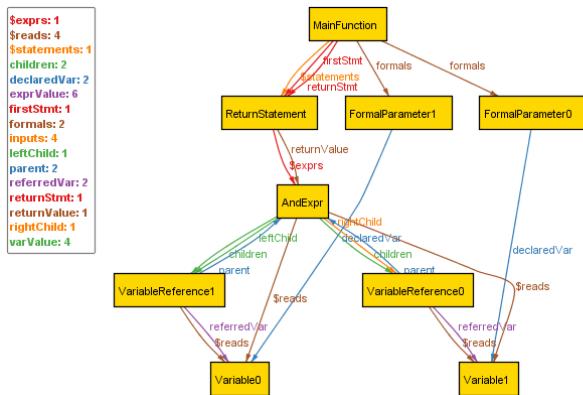


Instance 31

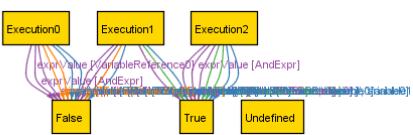
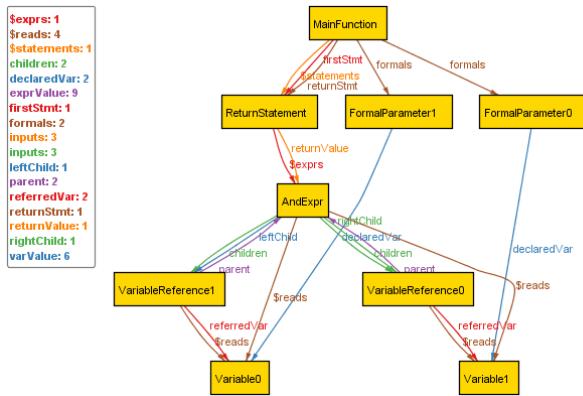


Instance 32

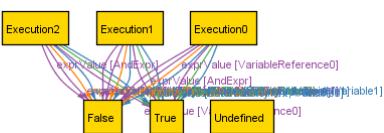
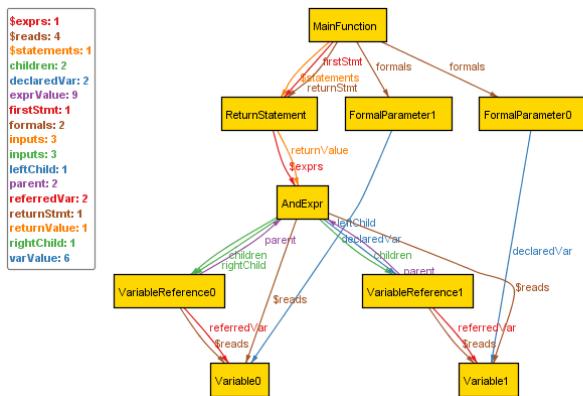




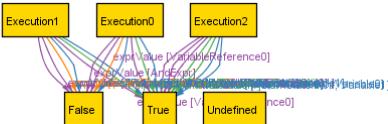
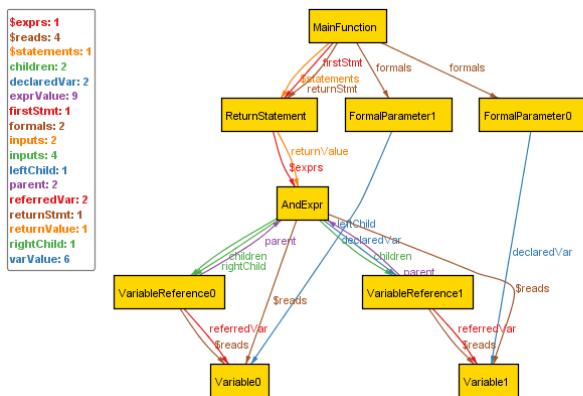
Instance 34



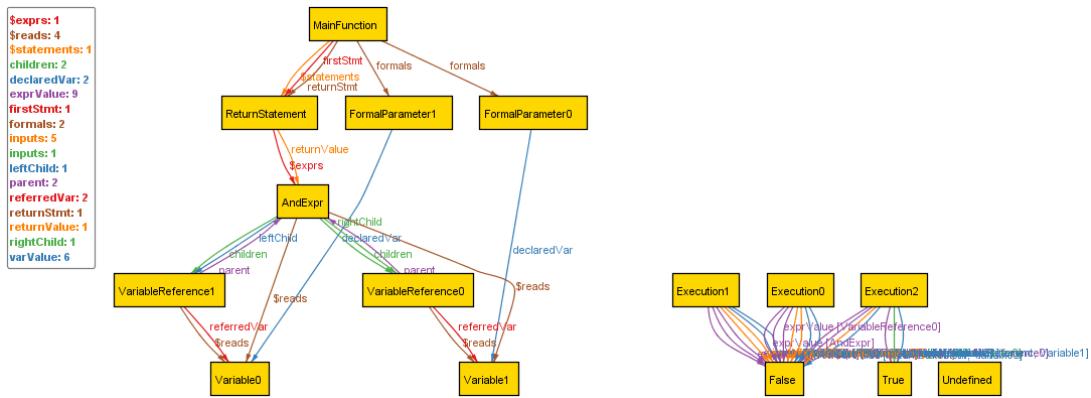
Instance 35



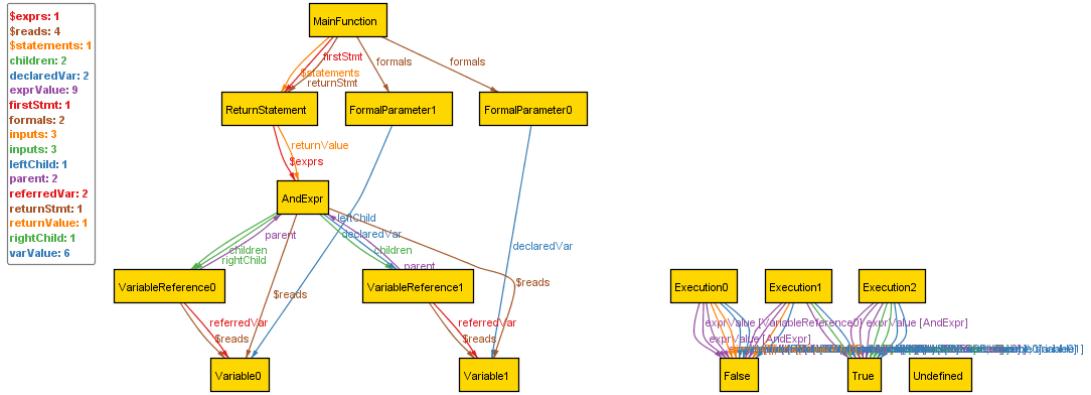
Instance 36



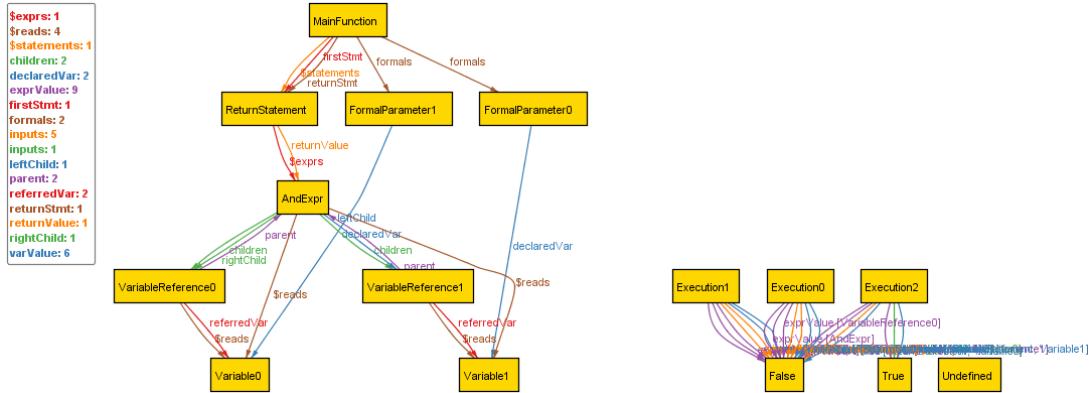
Instance 37



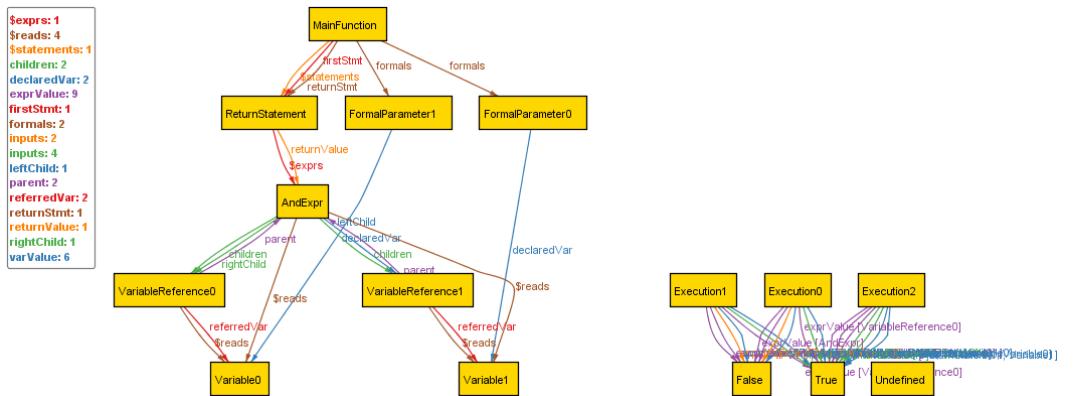
Instance 38



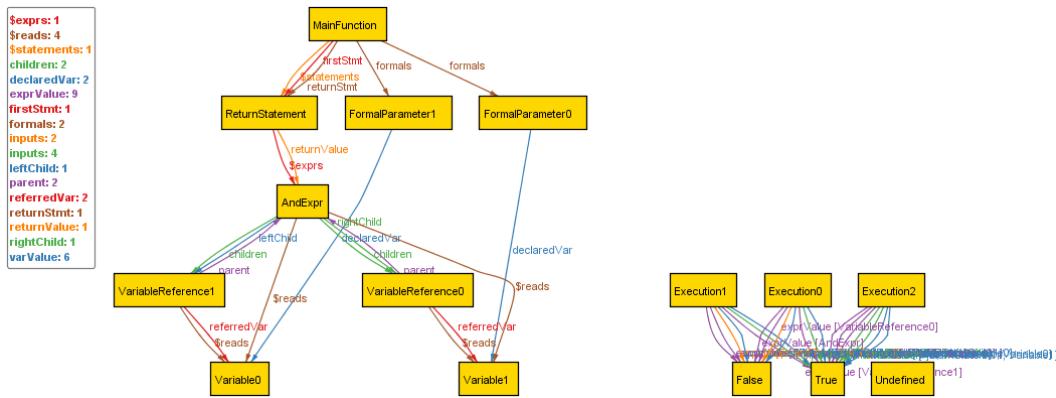
Instance 39



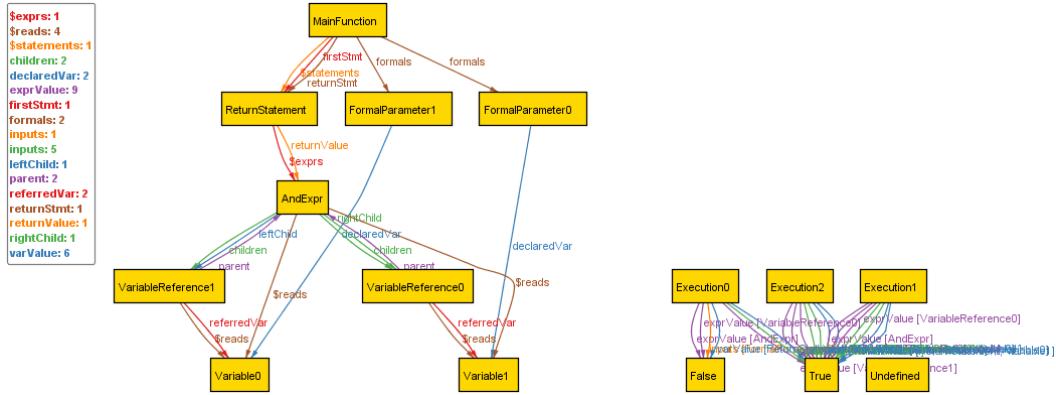
Instance 40



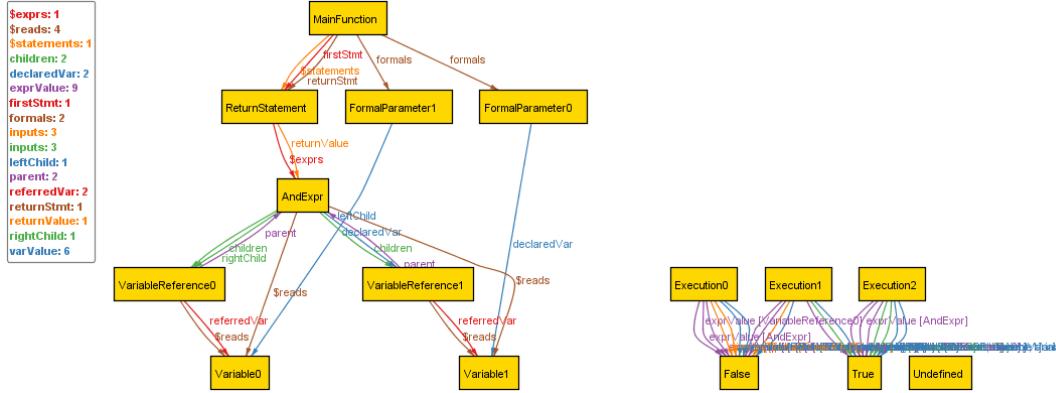
Instance 41



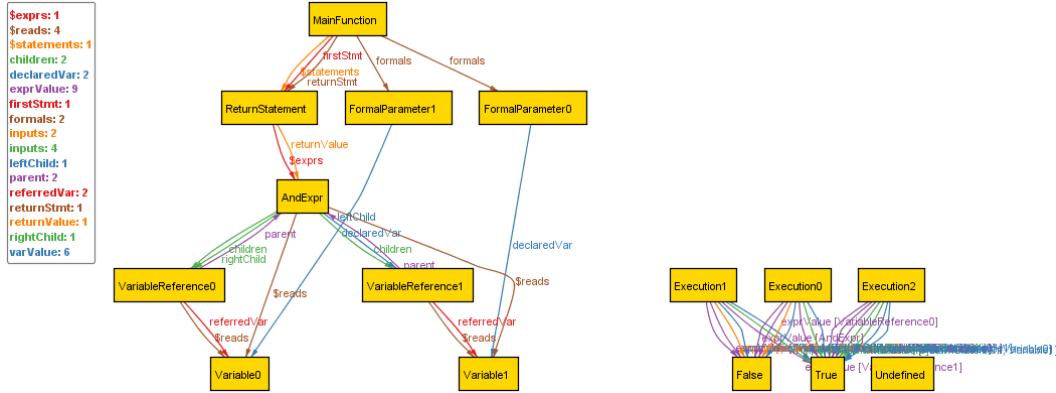
Instance 42

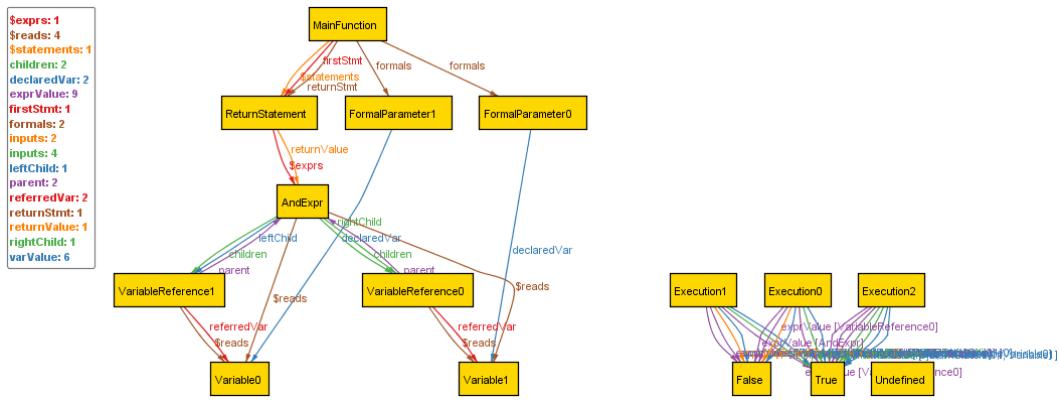


Instance 43

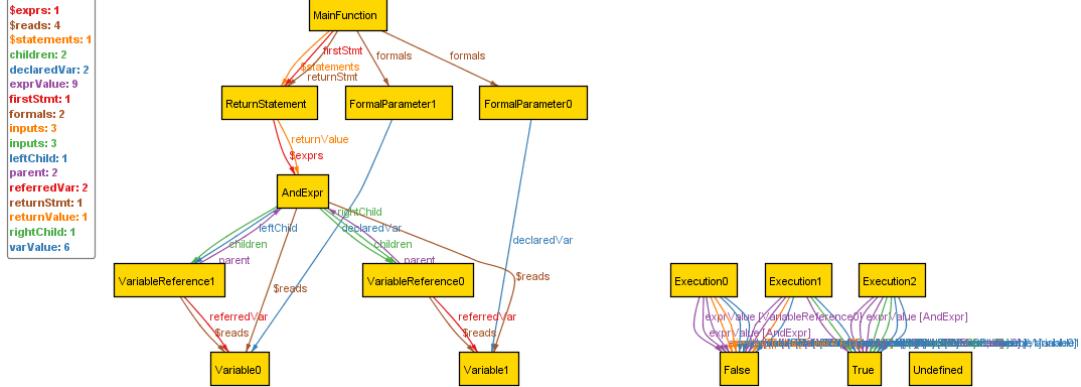


Instance 44

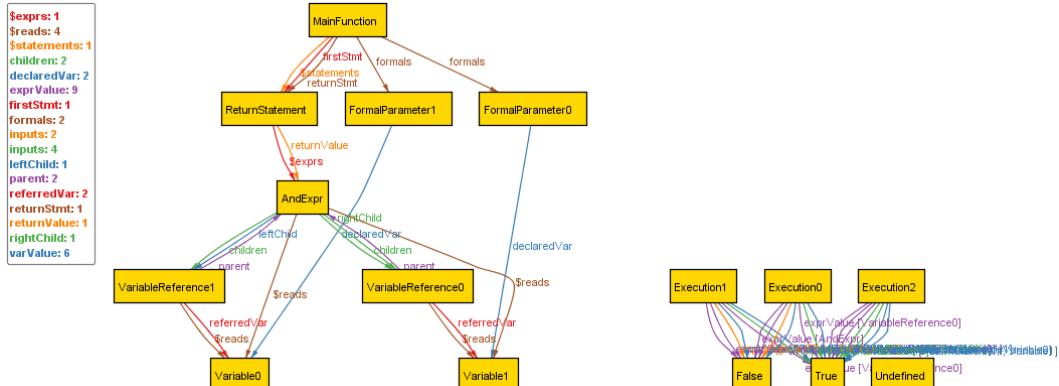




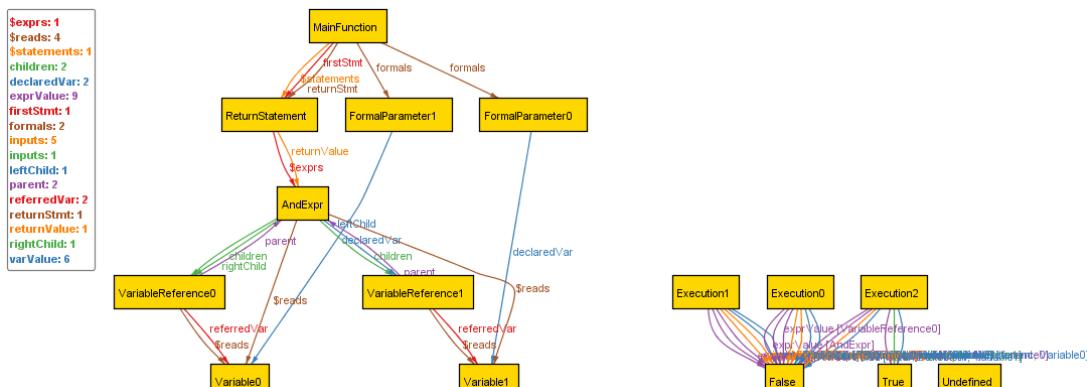
Instance 46



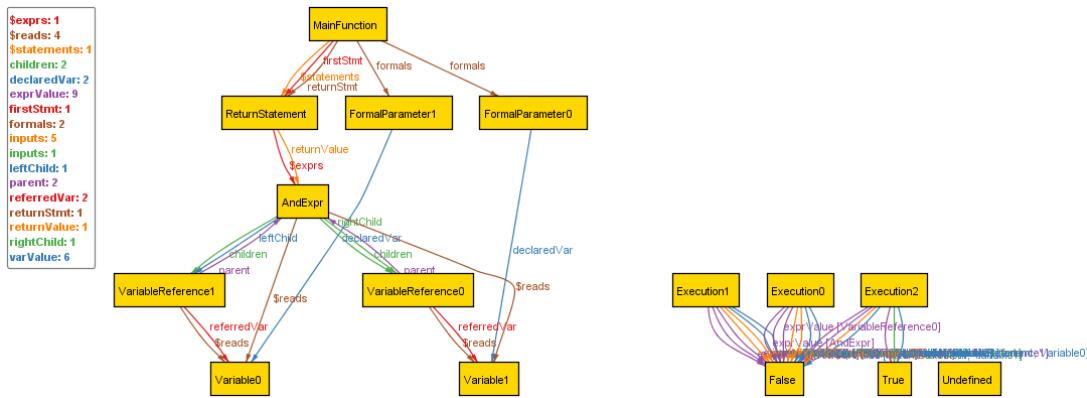
Instance 47



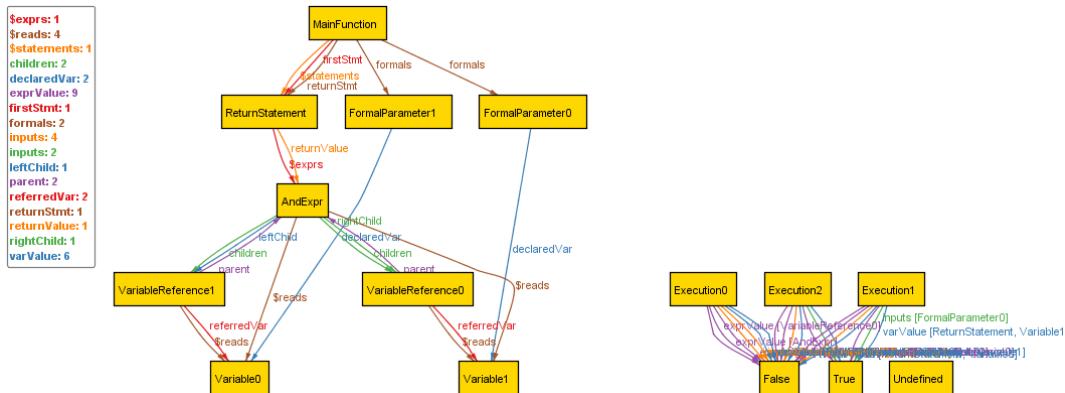
Instance 48



Instance 49

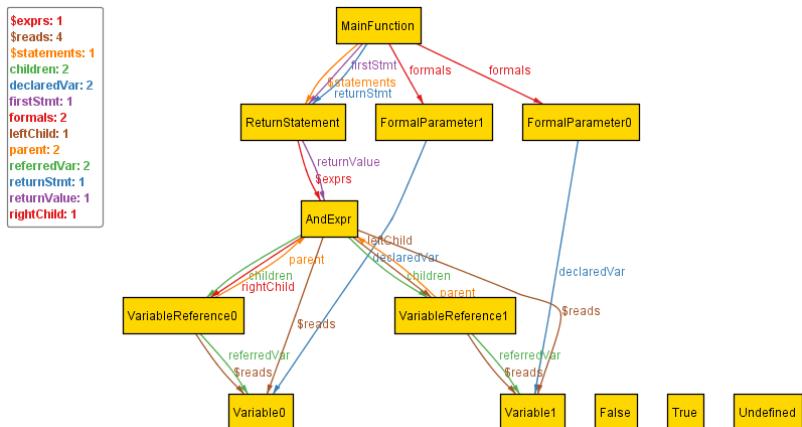


Instance 50

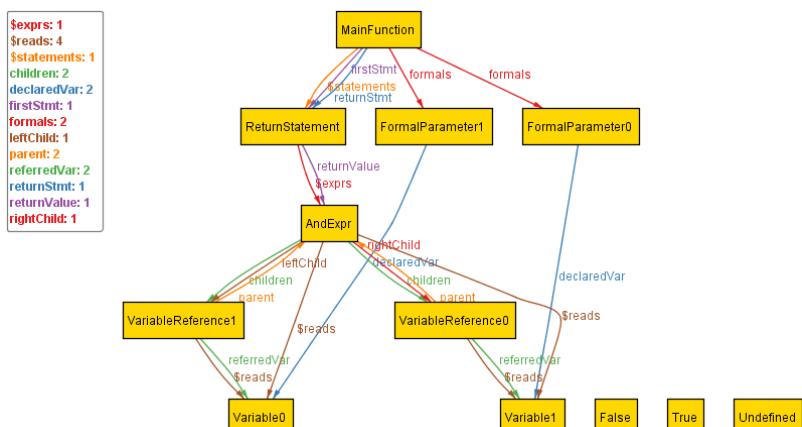


Instance 3

Instance 1



Instance 2



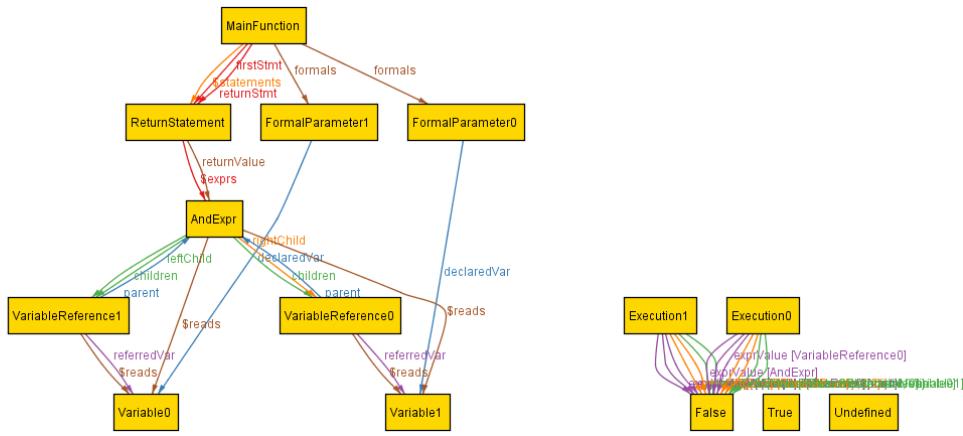
Instance 4

Instance 1

```

$exprs: 1
$reads: 4
$statements: 1
children: 2
declaredVar: 2
exprValue: 6
firstStmt: 1
formals: 2
inputs: 4
leftChild: 1
parent: 2
referredVar: 2
returnStmt: 1
returnValue: 1
rightChild: 1
varValue: 4

```

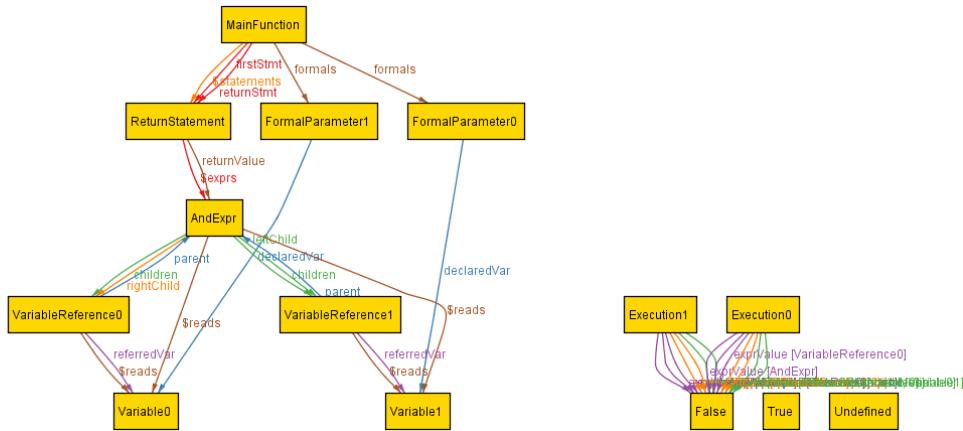


Instance 2

```

$exprs: 1
$reads: 4
$statements: 1
children: 2
declaredVar: 2
exprValue: 6
firstStmt: 1
formals: 2
inputs: 4
leftChild: 1
parent: 2
referredVar: 2
returnStmt: 1
returnValue: 1
rightChild: 1
varValue: 4

```

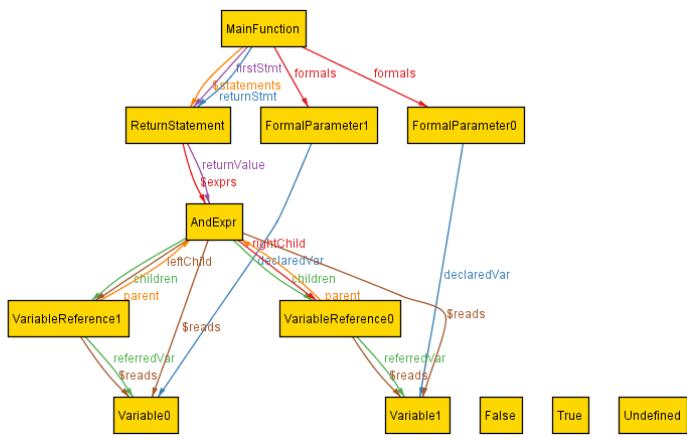


Instance 3

```

$exprs: 1
$reads: 4
$statements: 1
children: 2
declaredVar: 2
exprValue: 6
firstStmt: 1
formals: 2
inputs: 6
leftChild: 1
parent: 2
referredVar: 2
returnStmt: 1
returnValue: 1
rightChild: 1
varValue: 6

```

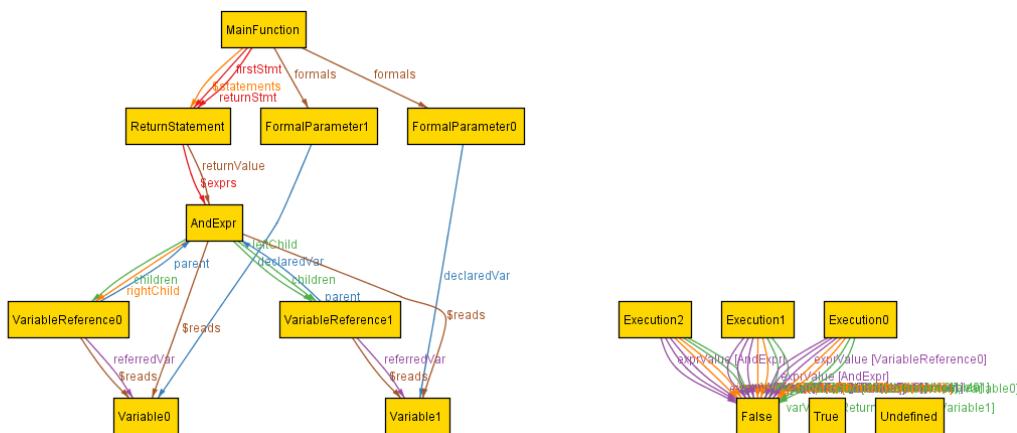


Instance 4

```

$exprs: 1
$reads: 4
$statements: 1
children: 2
declaredVar: 2
exprValue: 9
firstStmt: 1
formals: 2
inputs: 6
leftChild: 1
parent: 2
referredVar: 2
returnStmt: 1
returnValue: 1
rightChild: 1
varValue: 6

```

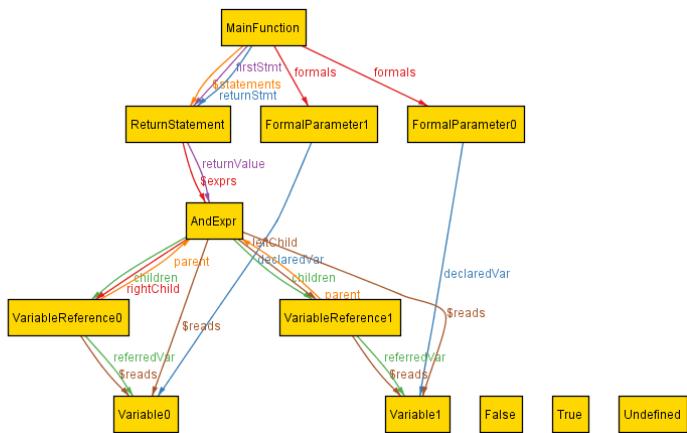


Instance 5

```

$exprs: 1
$reads: 4
$statements: 1
children: 2
declaredVar: 2
firstStmt: 1
formals: 2
leftChild: 1
parent: 2
referredVar: 2
returnStmt: 1
returnValue: 1
rightChild: 1

```

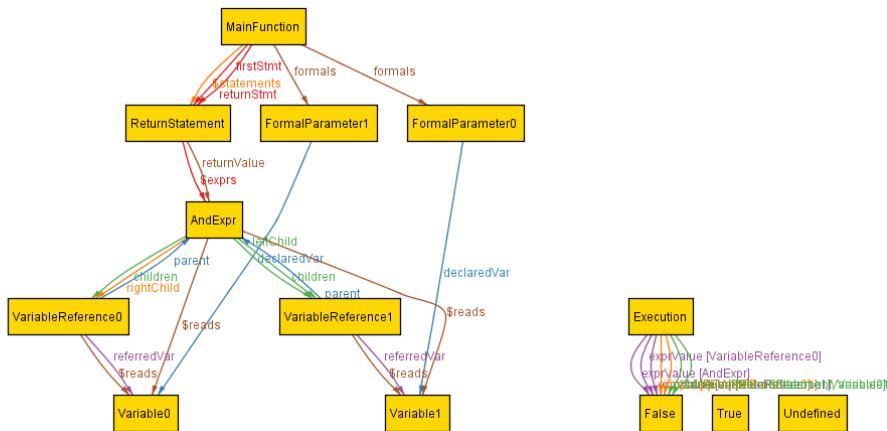


Instance 6

```

$exprs: 1
$reads: 4
$statements: 1
children: 2
declaredVar: 2
exprValue: 3
firstStmt: 1
formals: 2
inputs: 2
leftChild: 1
parent: 2
referredVar: 2
returnStmt: 1
returnValue: 1
rightChild: 1
varValue: 2

```

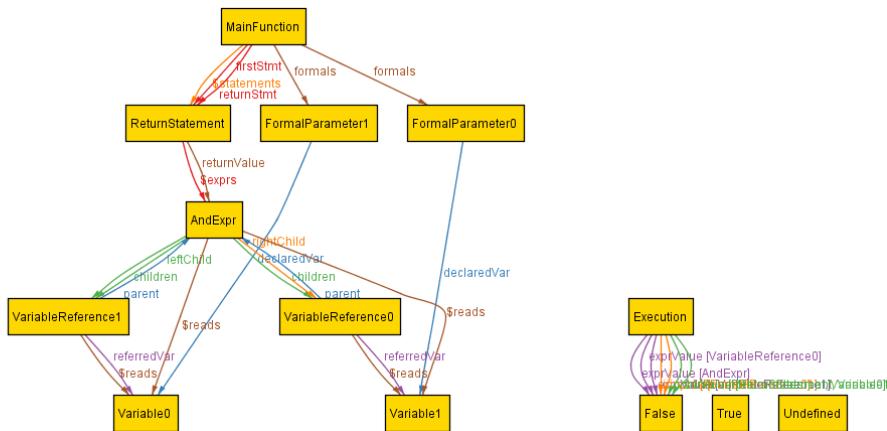


Instance 7

```

$exprs: 1
$reads: 4
$statements: 1
children: 2
declaredVar: 2
exprValue: 3
firstStmt: 1
formals: 2
inputs: 2
leftChild: 1
parent: 2
referredVar: 2
returnStmt: 1
returnValue: 1
rightChild: 1
varValue: 2

```



Instance 8

```

$exprs: 1
$reads: 4
$statements: 1
children: 2
declaredVar: 2
exprValue: 9
firstStmt: 1
formals: 2
inputs: 6
leftChild: 1
parent: 2
referredVar: 2
returnStmt: 1
returnValue: 1
rightChild: 1
varValue: 6

```

