Assignment 2

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Assignment 2: Control-Dependence

Context-Sensitive ICFG Traversal

- You will be using what you have learned about ICFG and context-sensitive graph traversal.
- **Goal**: implement a context-sensitive graph traversal on ICFG and print **feasible** paths from a source node to a sink node on the graph

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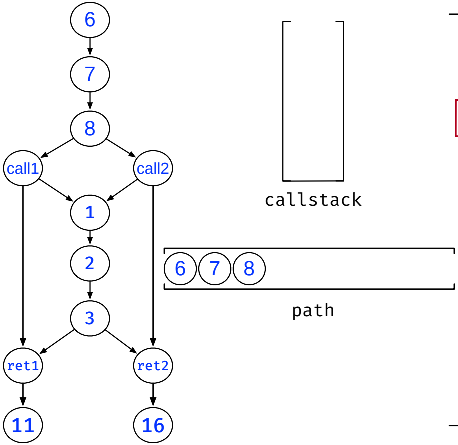
- **Goal**: implement a context-sensitive graph traversal on ICFG and print **feasible** paths from a source node to a sink node on the graph
- **Specification and code template**: `https://github.com/SVF-tools/SVF-Teaching/wiki/Assignment-2`
- **SVF CPP API** `https://github.com/SVF-tools/SVF-Teaching/wiki/SVF-CPP-API`

Context-Sensitive Control-Dependence

Obtaining a path from node 6 to node 11 on ICFG



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visited: set<NodeID>
path: vector<NodeID>
callstack: stack<callsite> //A stack of LLVM call instructions
DFS(visited, path, callstack, src, dst)
visited.inser(src)
path.push_back(src)
if src == dst then
  Print path
foreach edge e ∈ outEdges(src) do
  if e.dst ∉ visited then
     if e.isIntraCFGEdge() then
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     else if e.isCallCFGEdge() then
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visited.erase(src);
path.pop_back();
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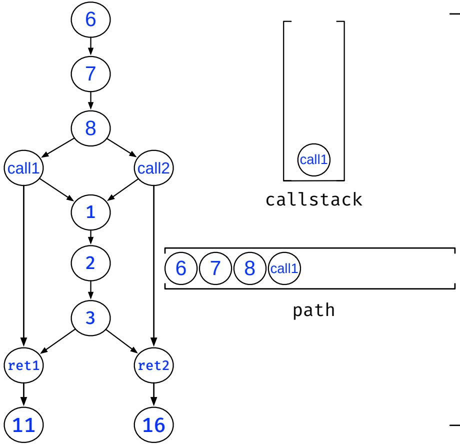

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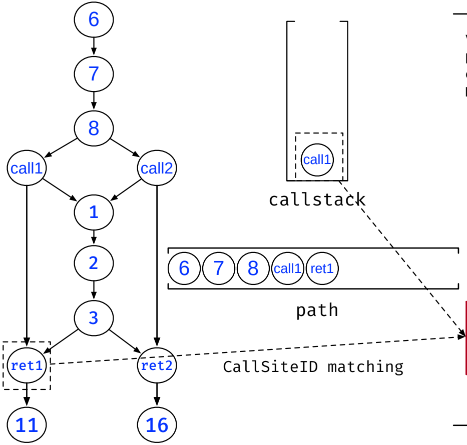

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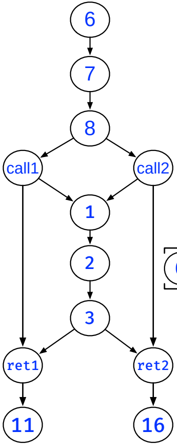

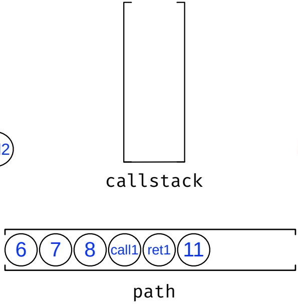

feasible path:
6→7→8→call1→ret1→11

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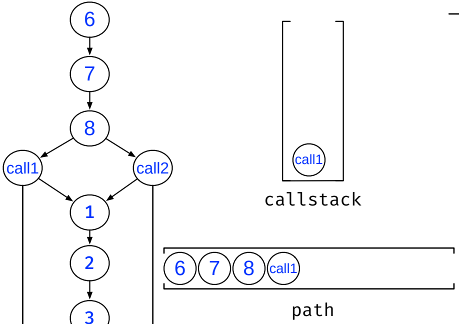

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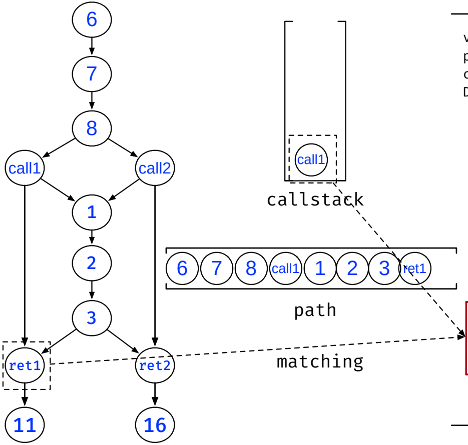

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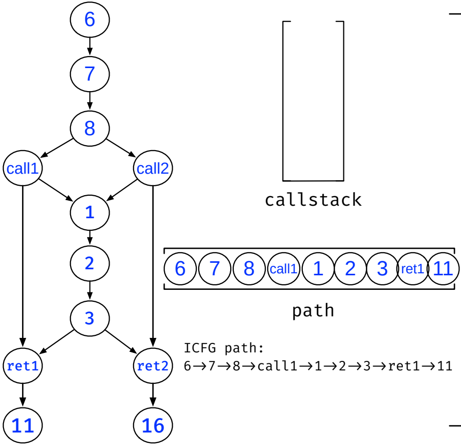

ICFG path:
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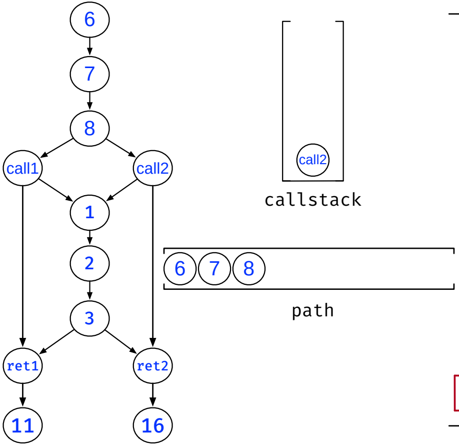

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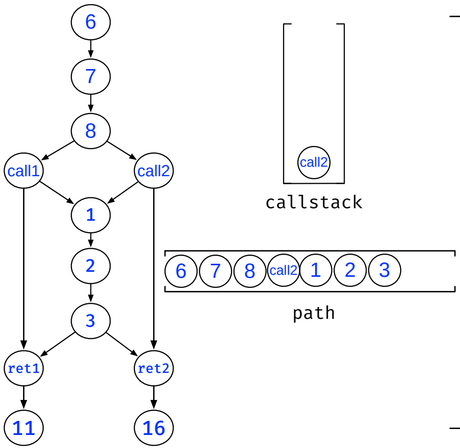

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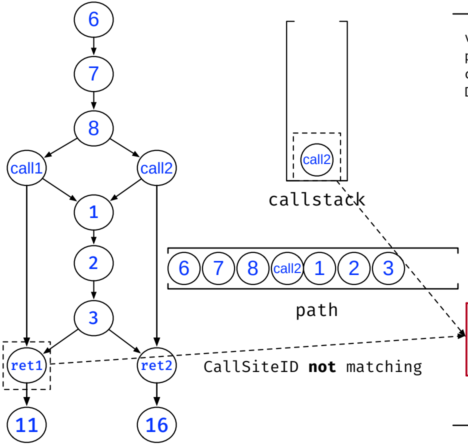

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