

# CS738: Advanced Compiler Optimizations

## SSAPRE: Example

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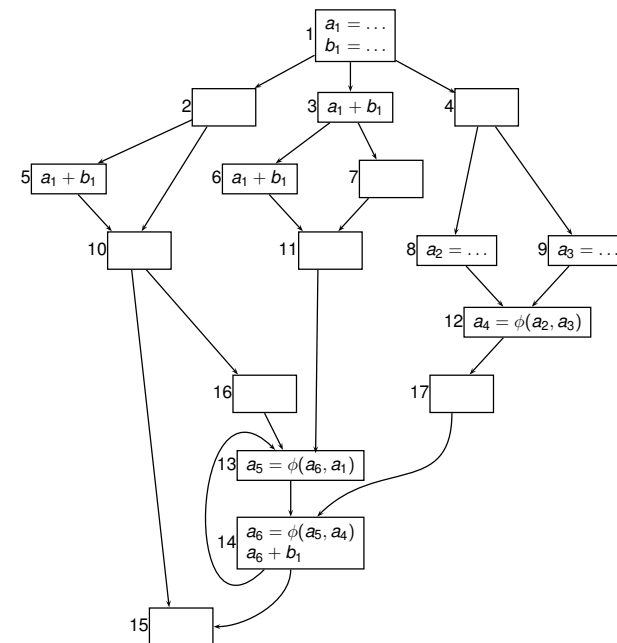
karkare@cse.iitk.ac.in

<http://www.cse.iitk.ac.in/~karkare/cs738>

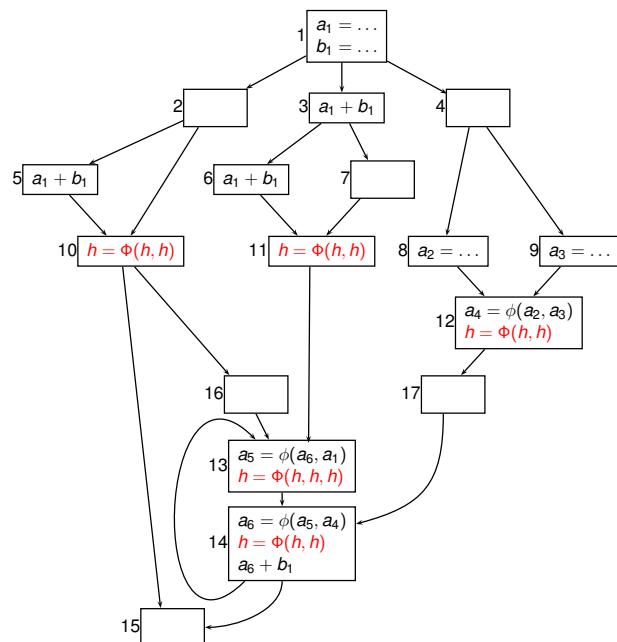
Department of CSE, IIT Kanpur



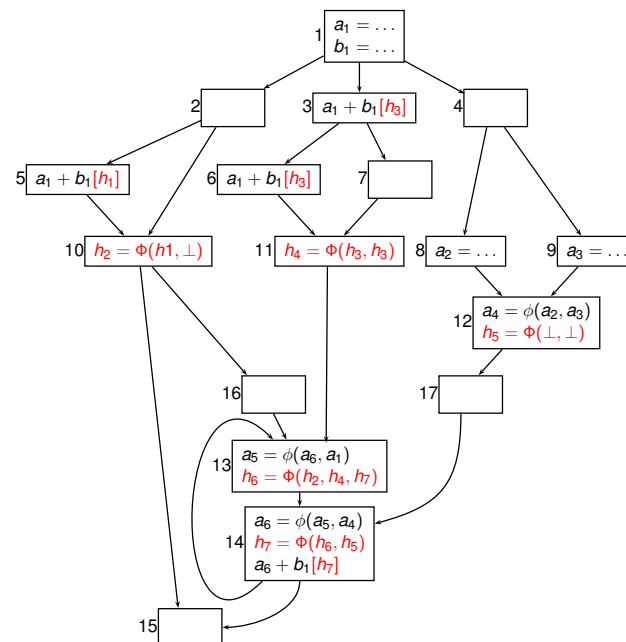
Example



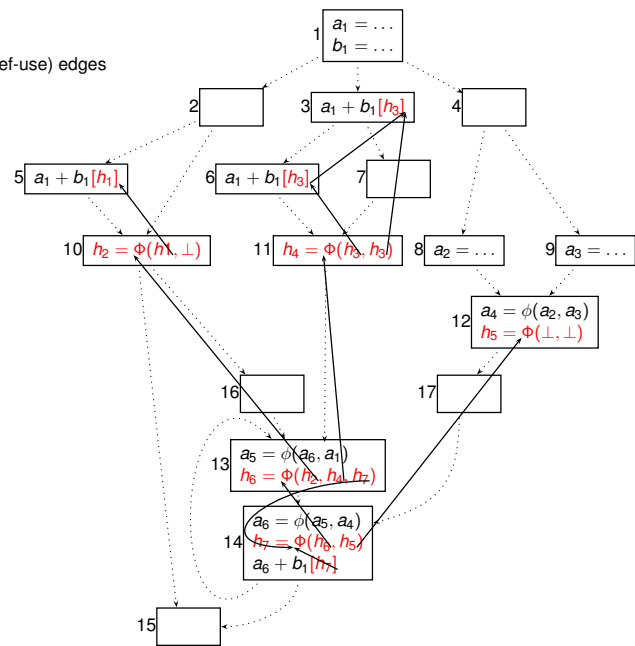
$\Phi$  insertion



Rename

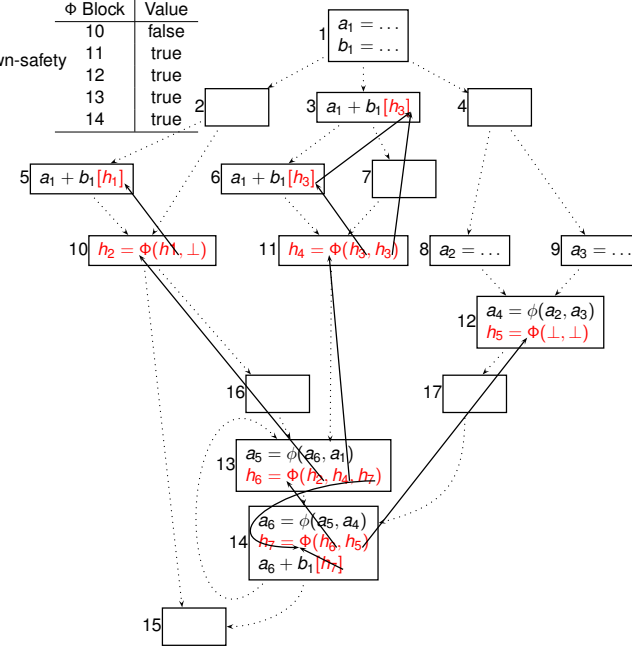


FRG (def-use) edges



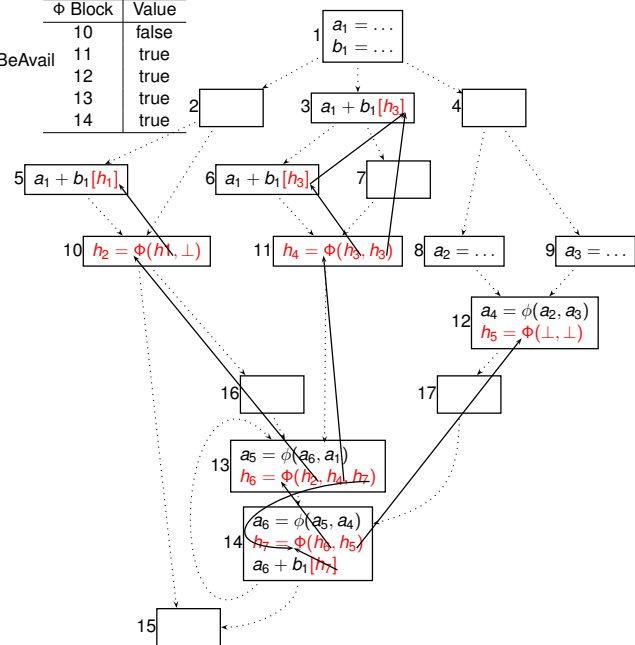
$\Phi$ Block	Value
10	false
11	true
12	true
13	true
14	true

Down-safety



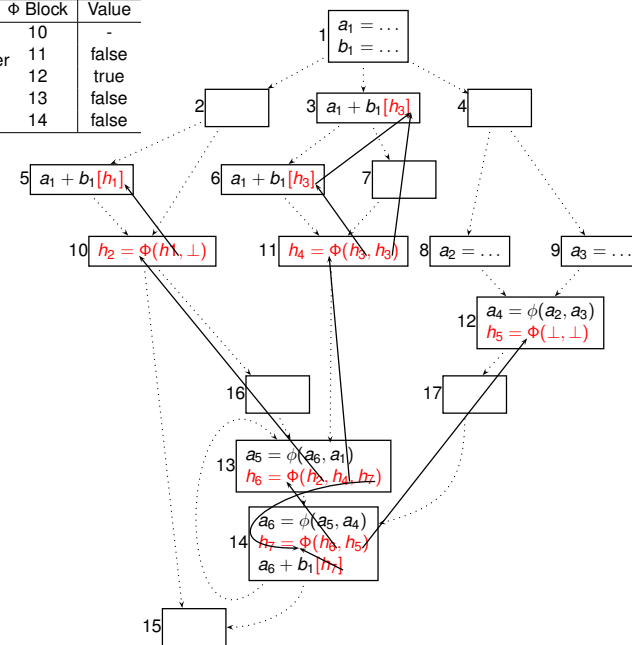
CanBeAvail

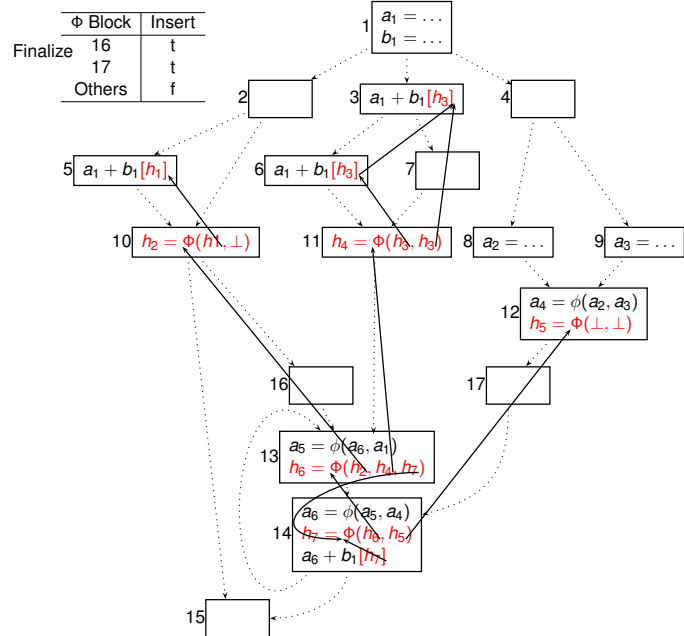
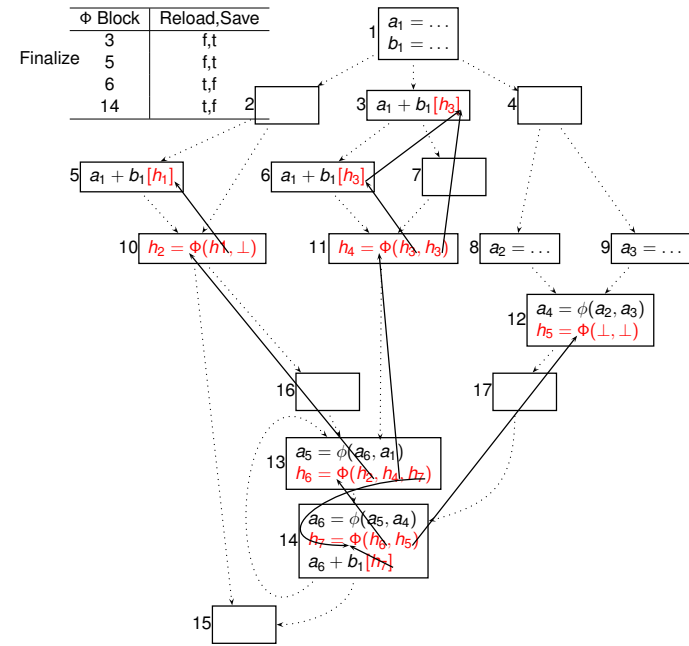
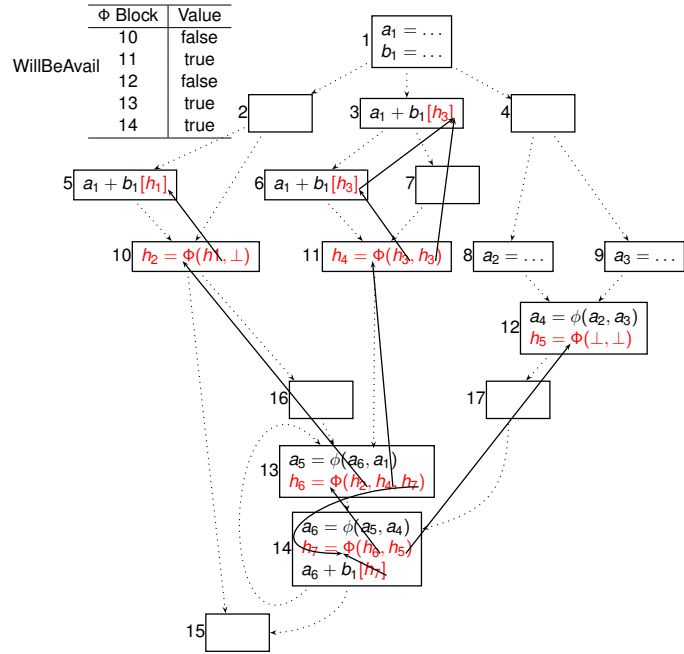
$\Phi$ Block	Value
10	false
11	true
12	true
13	true
14	true



Later

$\Phi$ Block	Value
10	-
11	false
12	true
13	false
14	false





Code Motion

