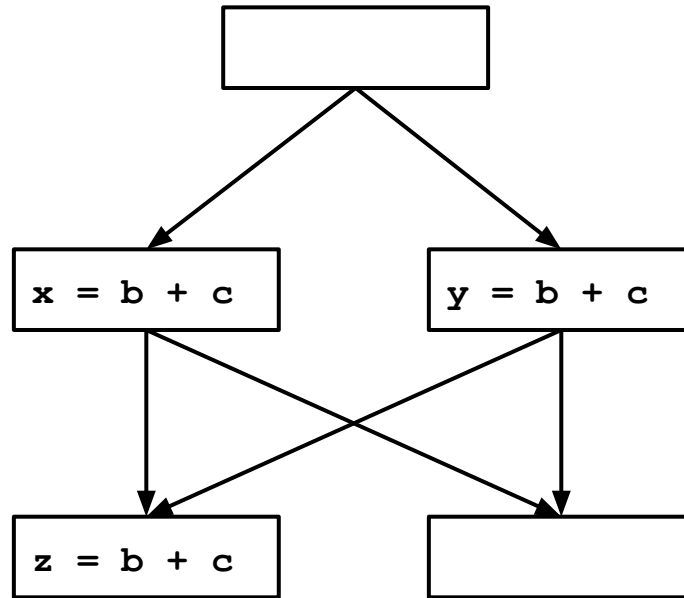


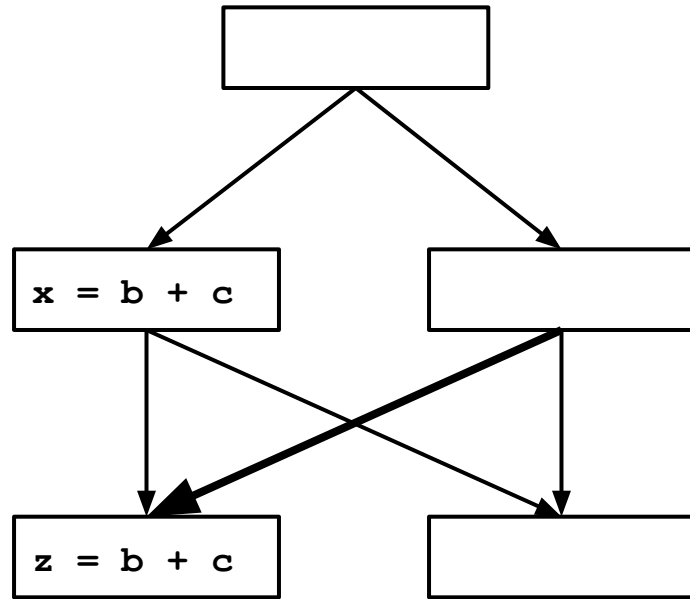
Partial Redundancy Elimination

CS243 Review Session

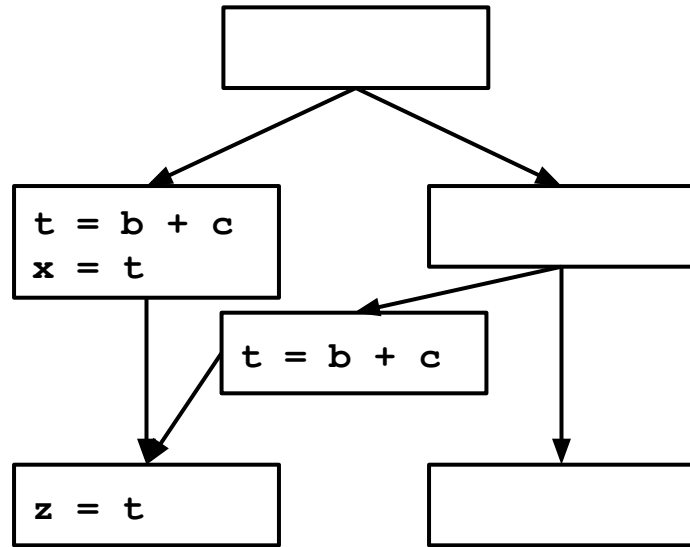
Full Redundancy

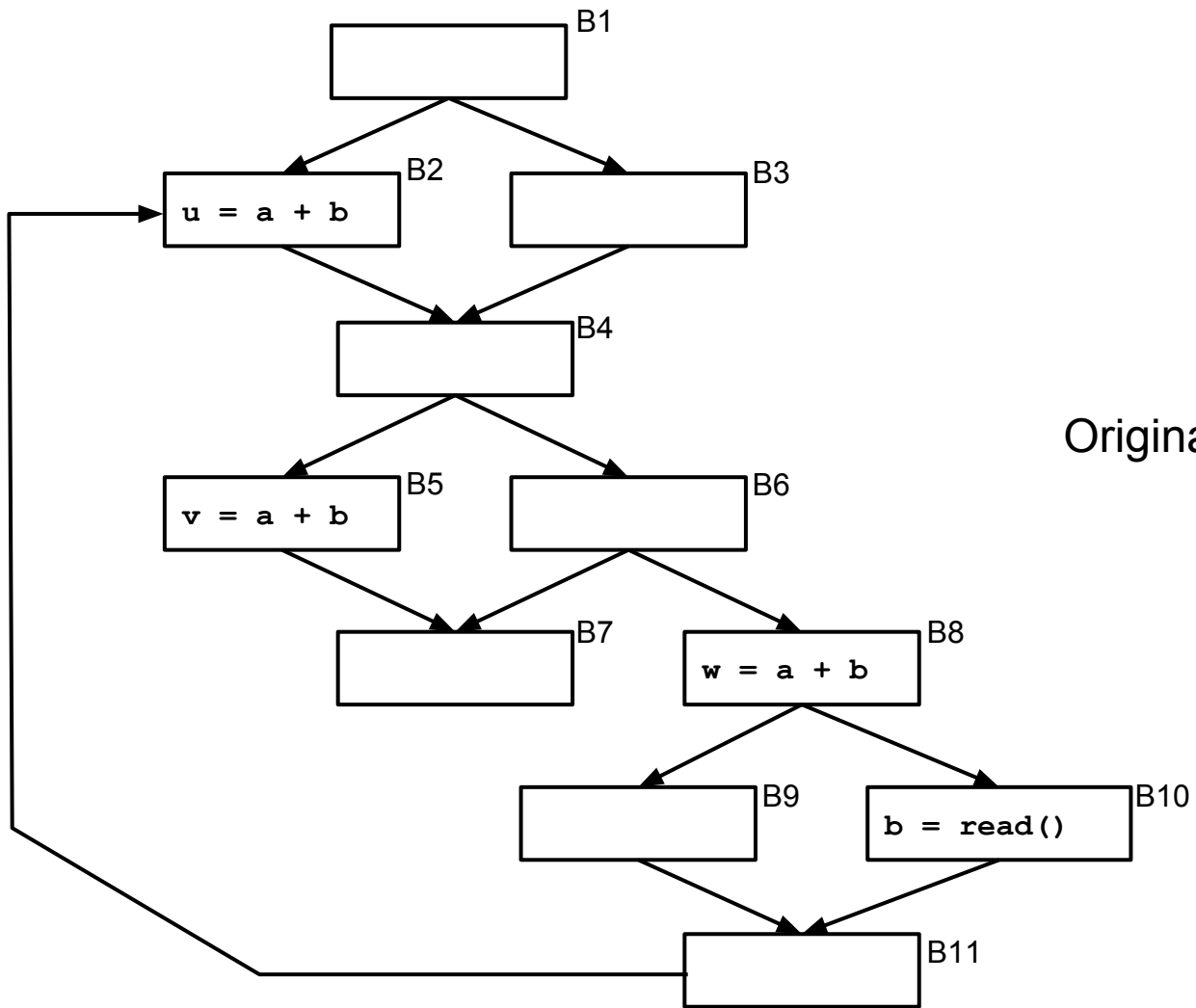


Partial Redundancy

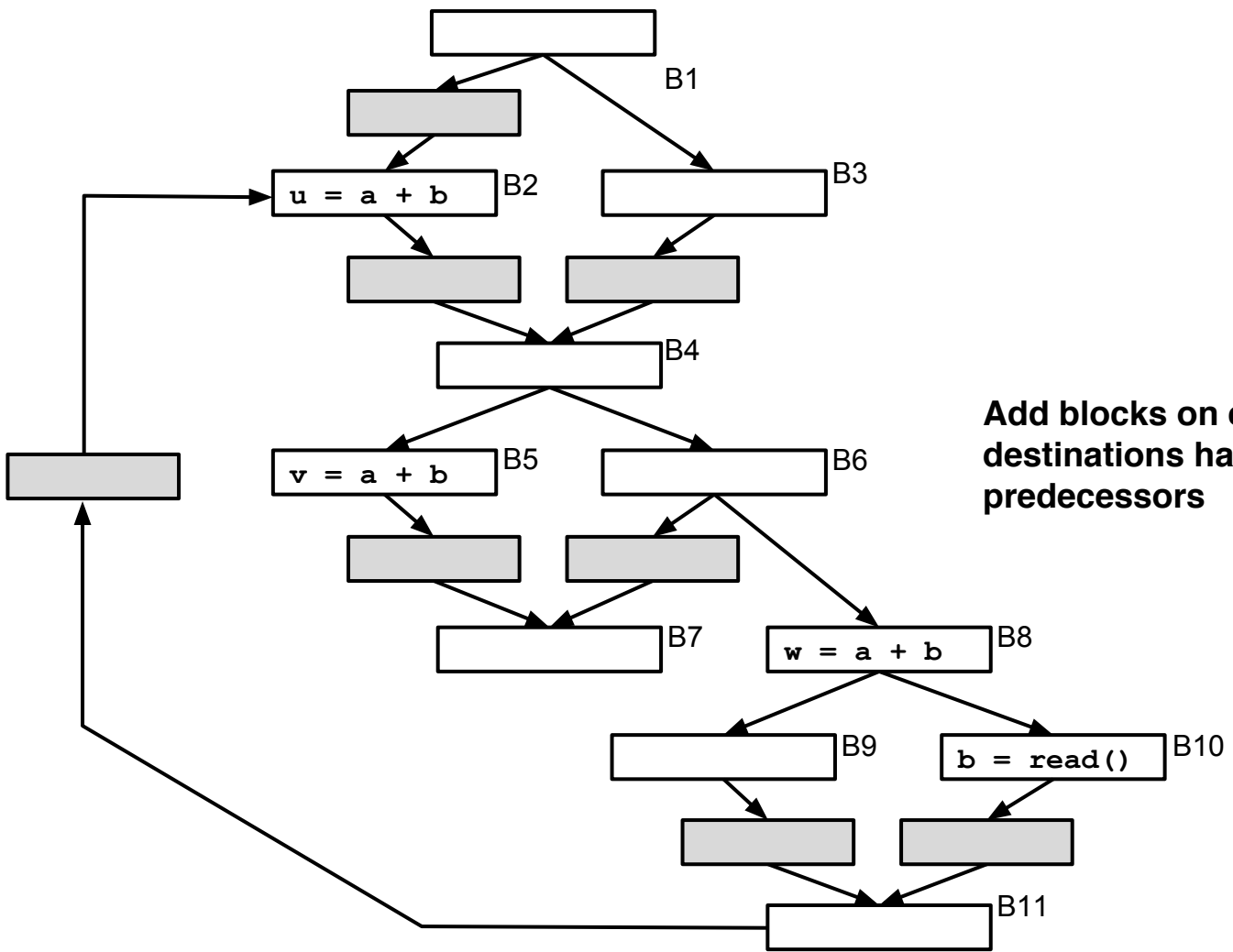


Partial Redundancy

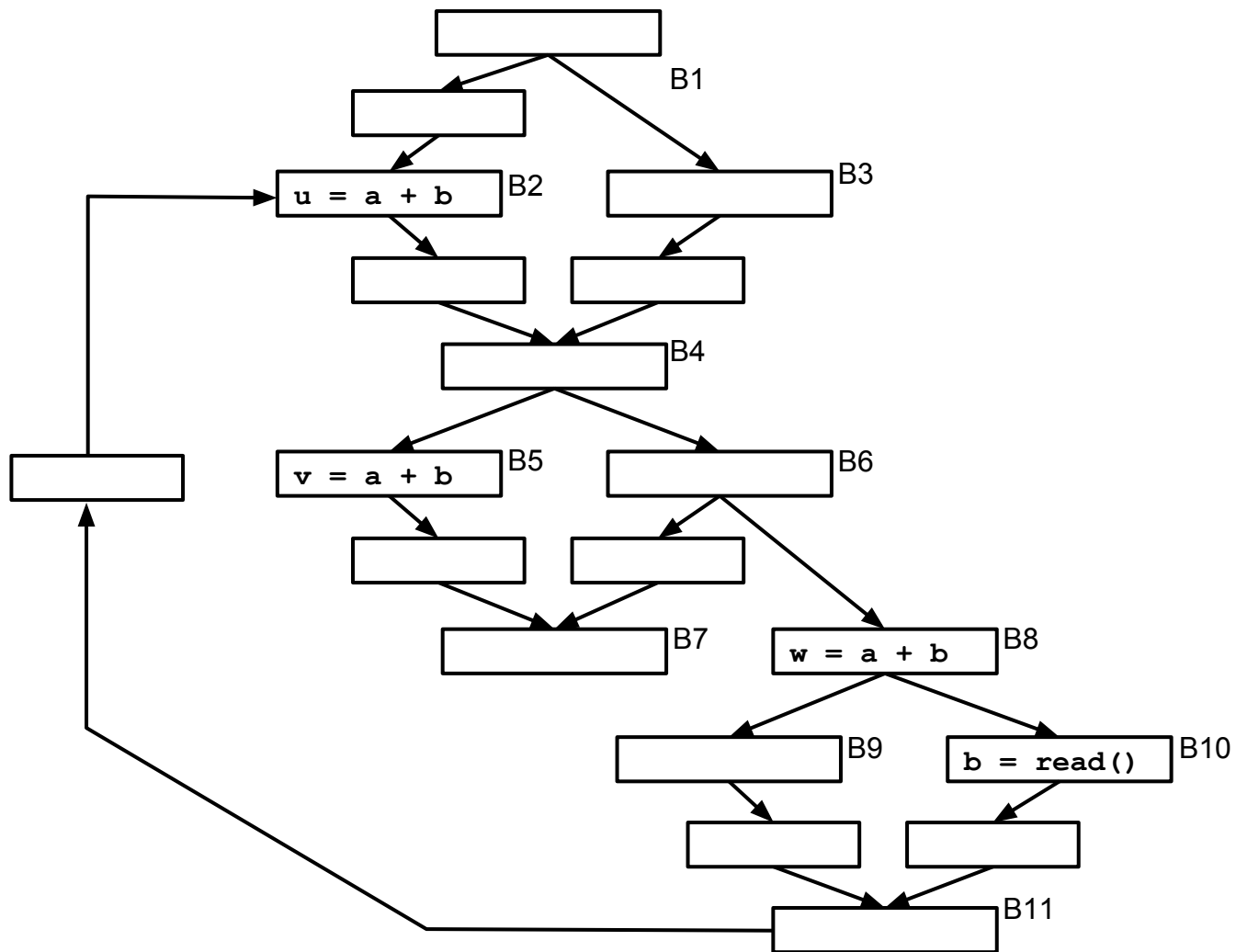


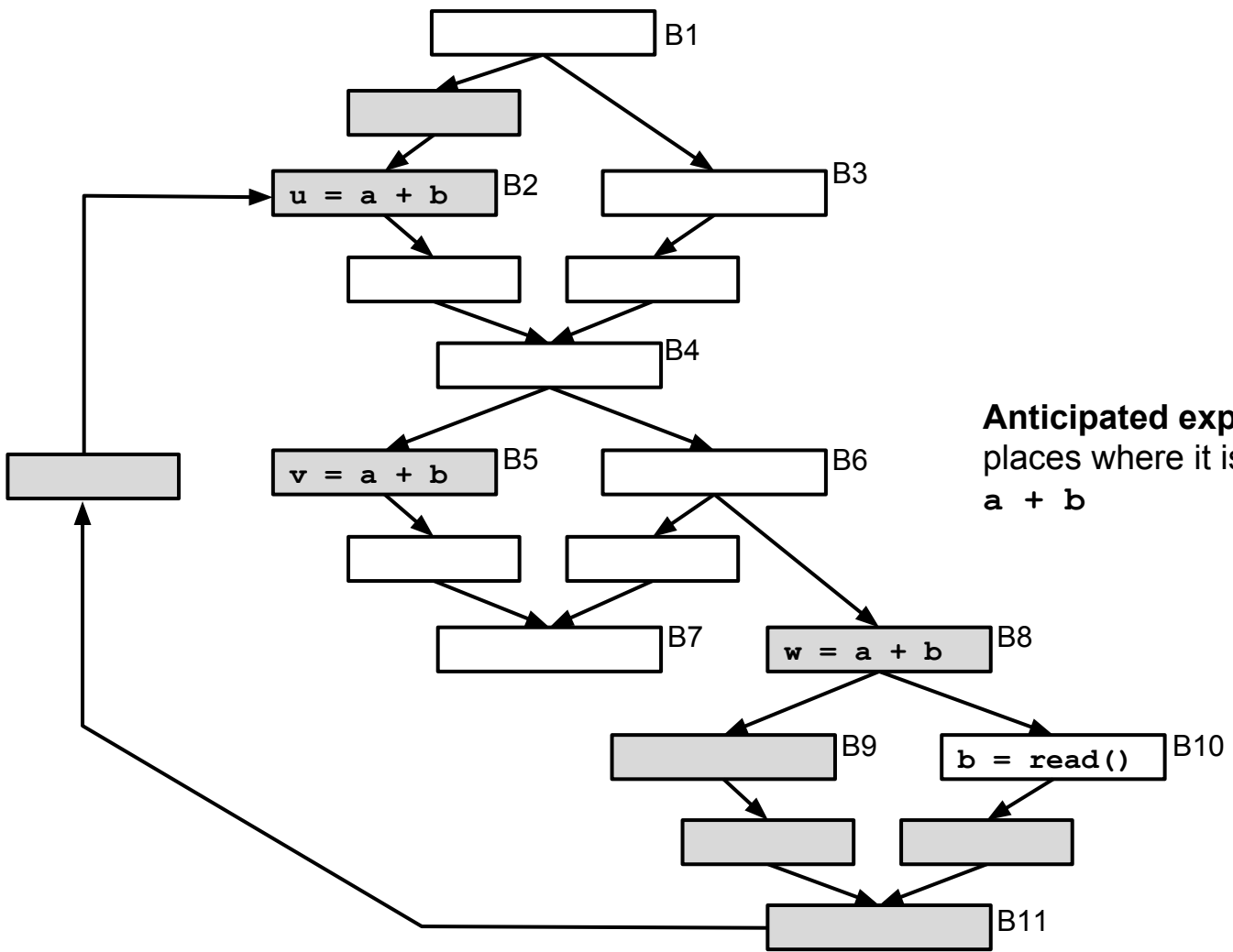


Original graph

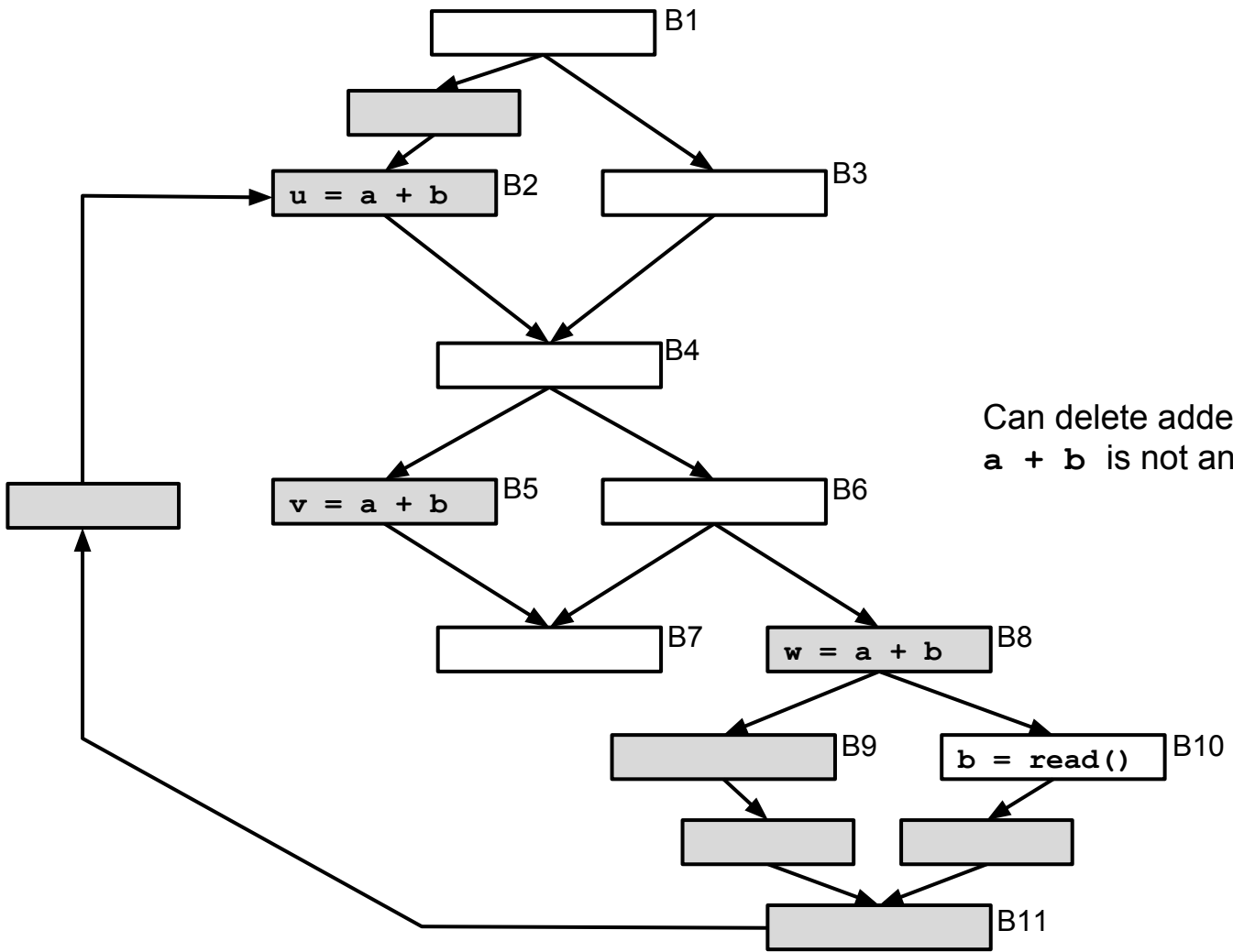


Add blocks on edges whose destinations have multiple predecessors

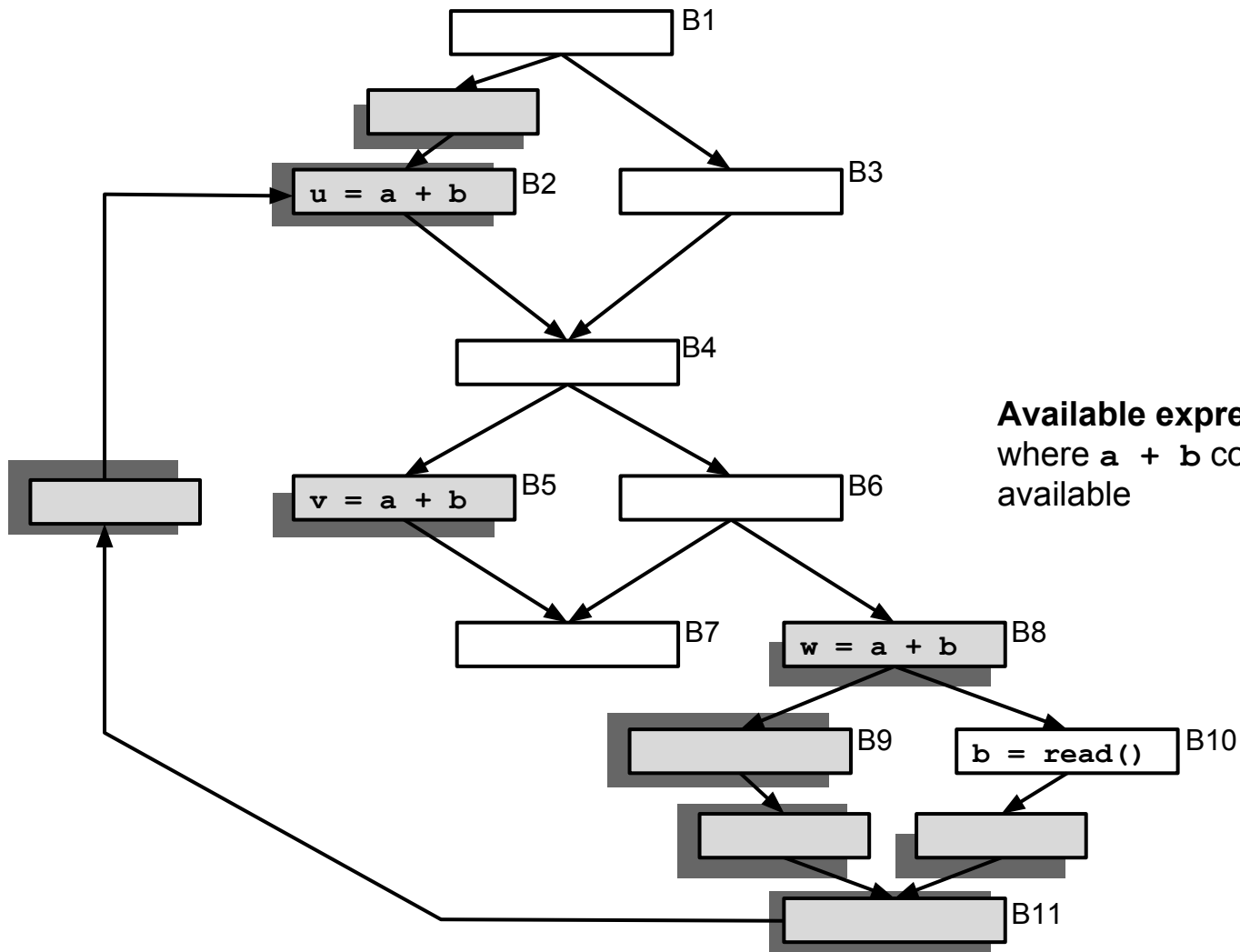




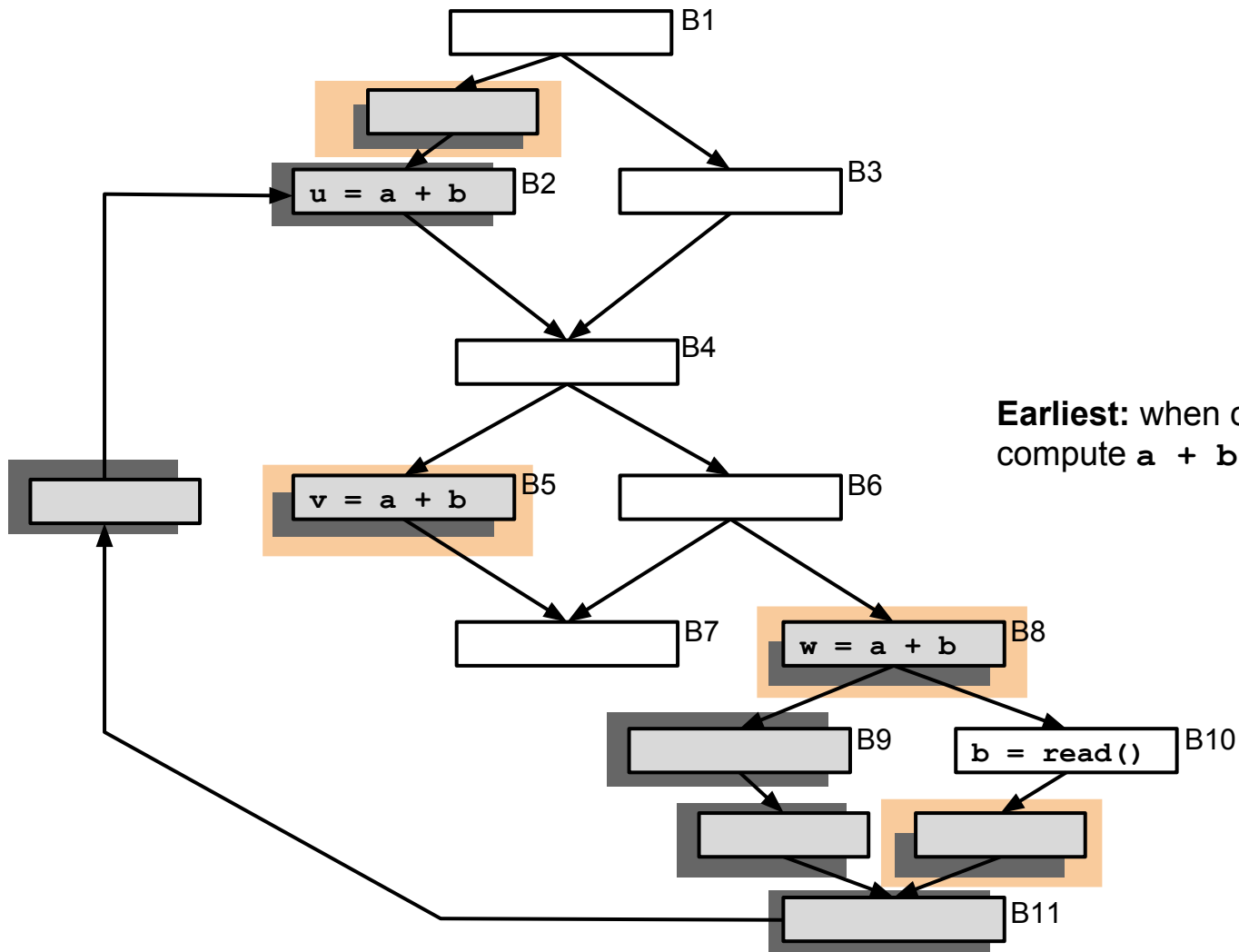
Anticipated expressions:
places where it is **safe** to place
`a + b`



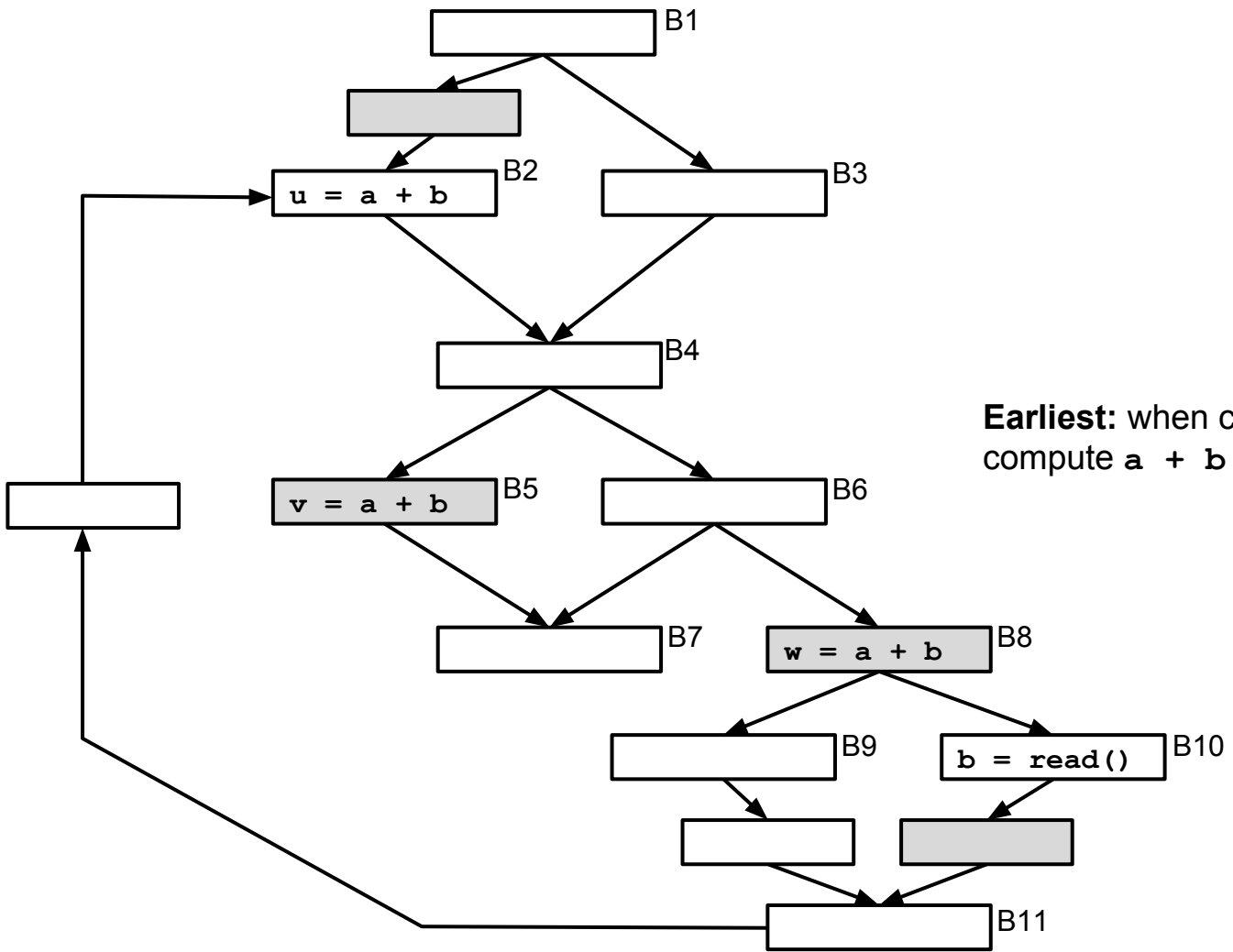
Can delete added blocks where `a + b` is not anticipated



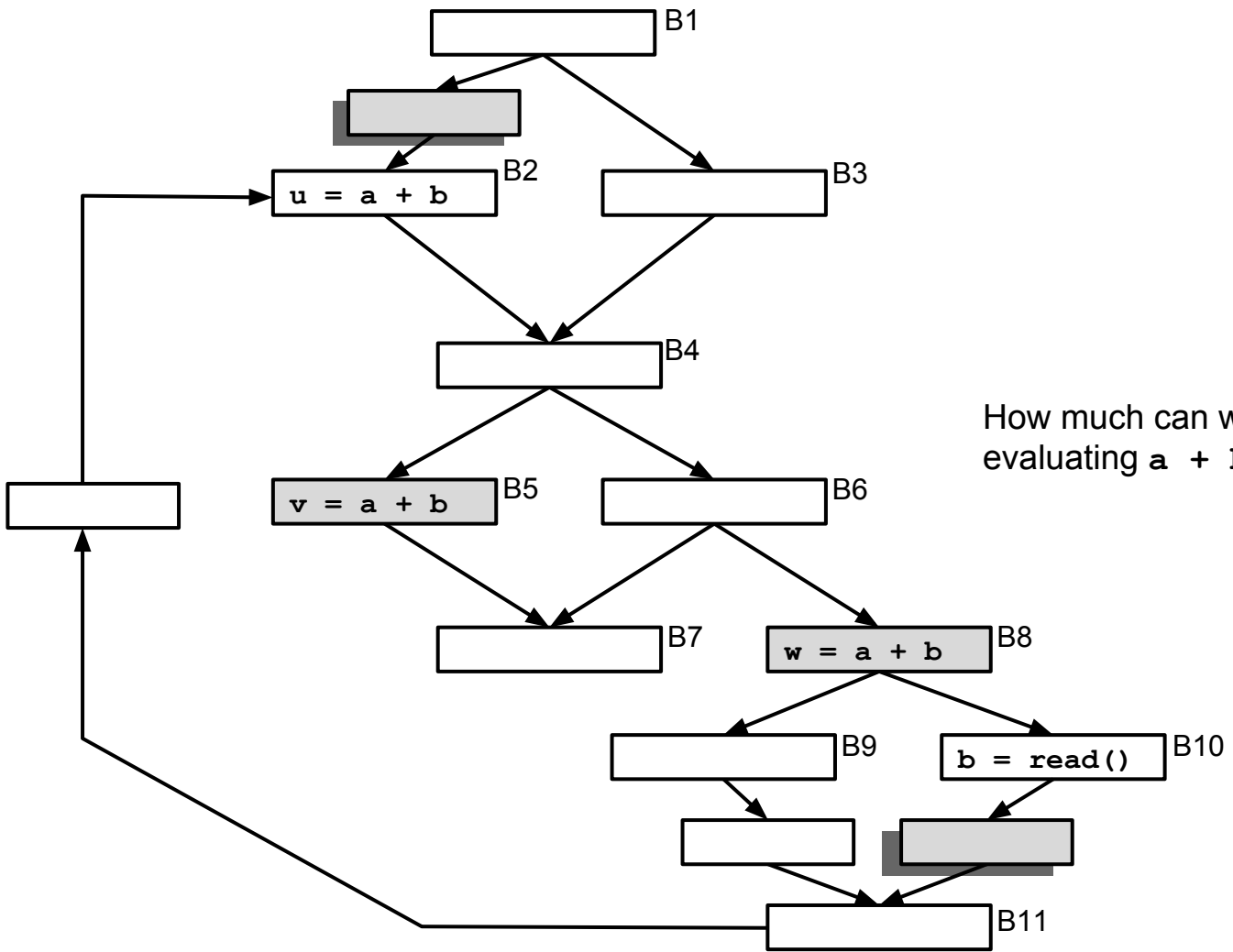
Available expressions: points where `a + b` could be made available



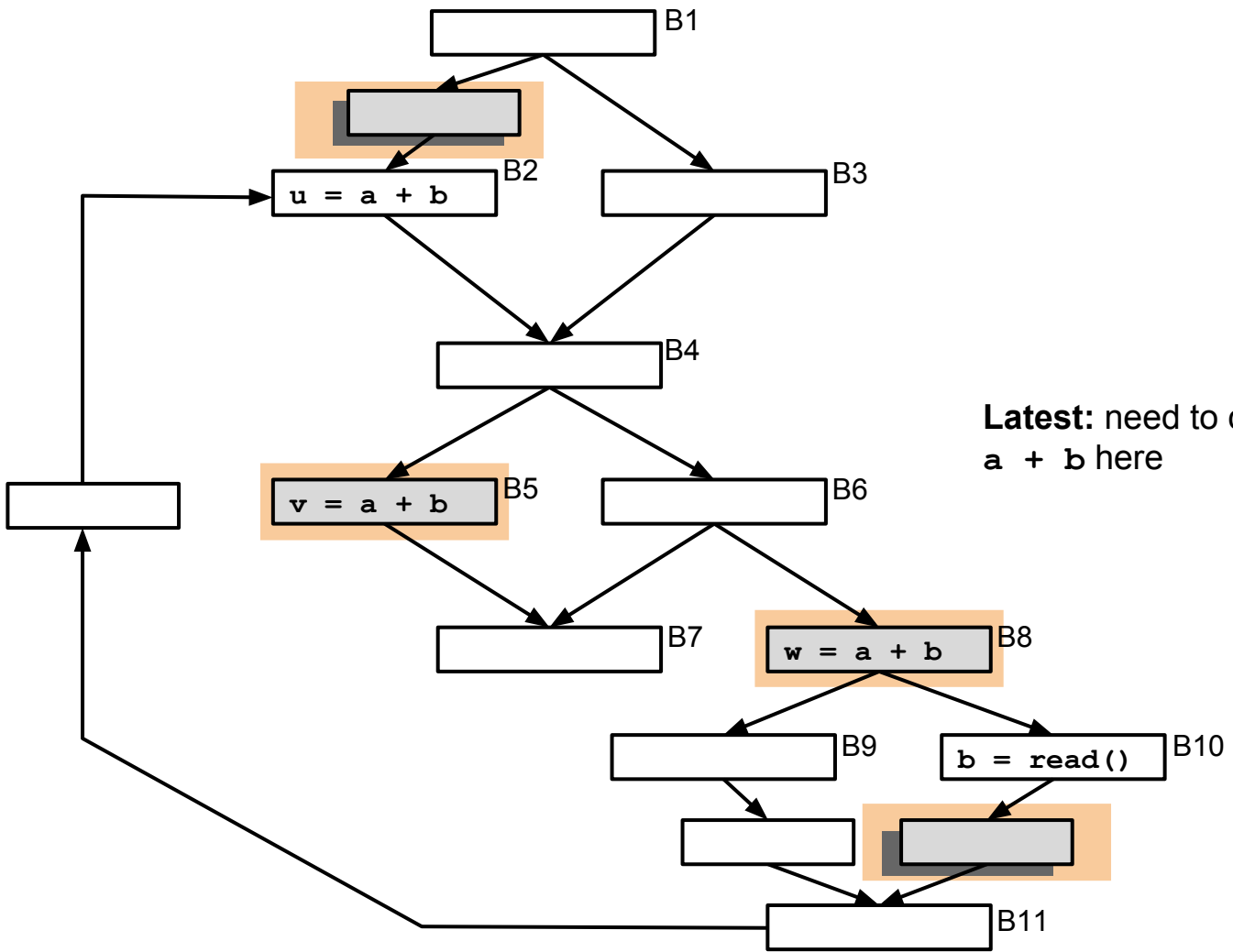
Earliest: when can we earliest compute `a + b`



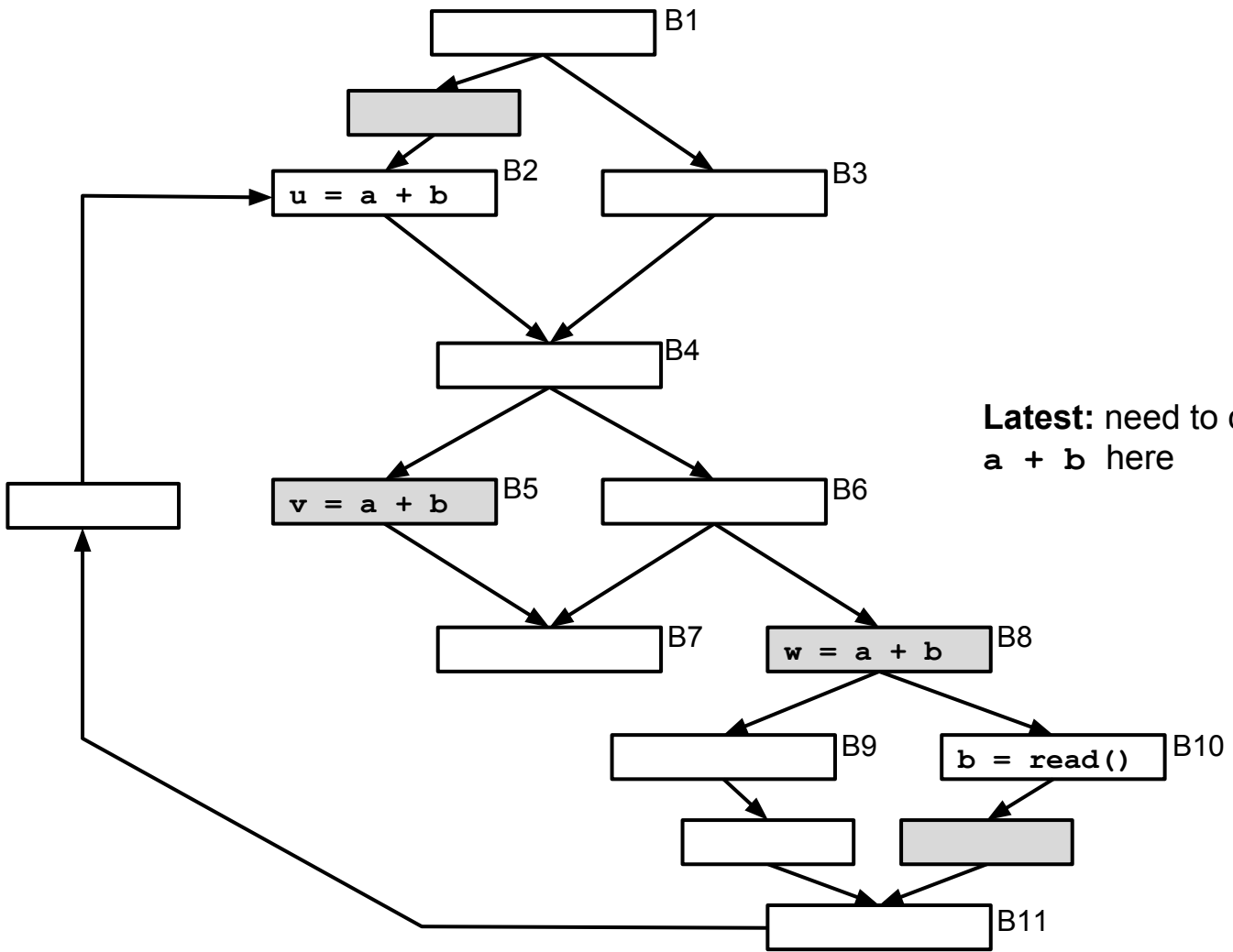
Earliest: when can we earliest compute `a + b`



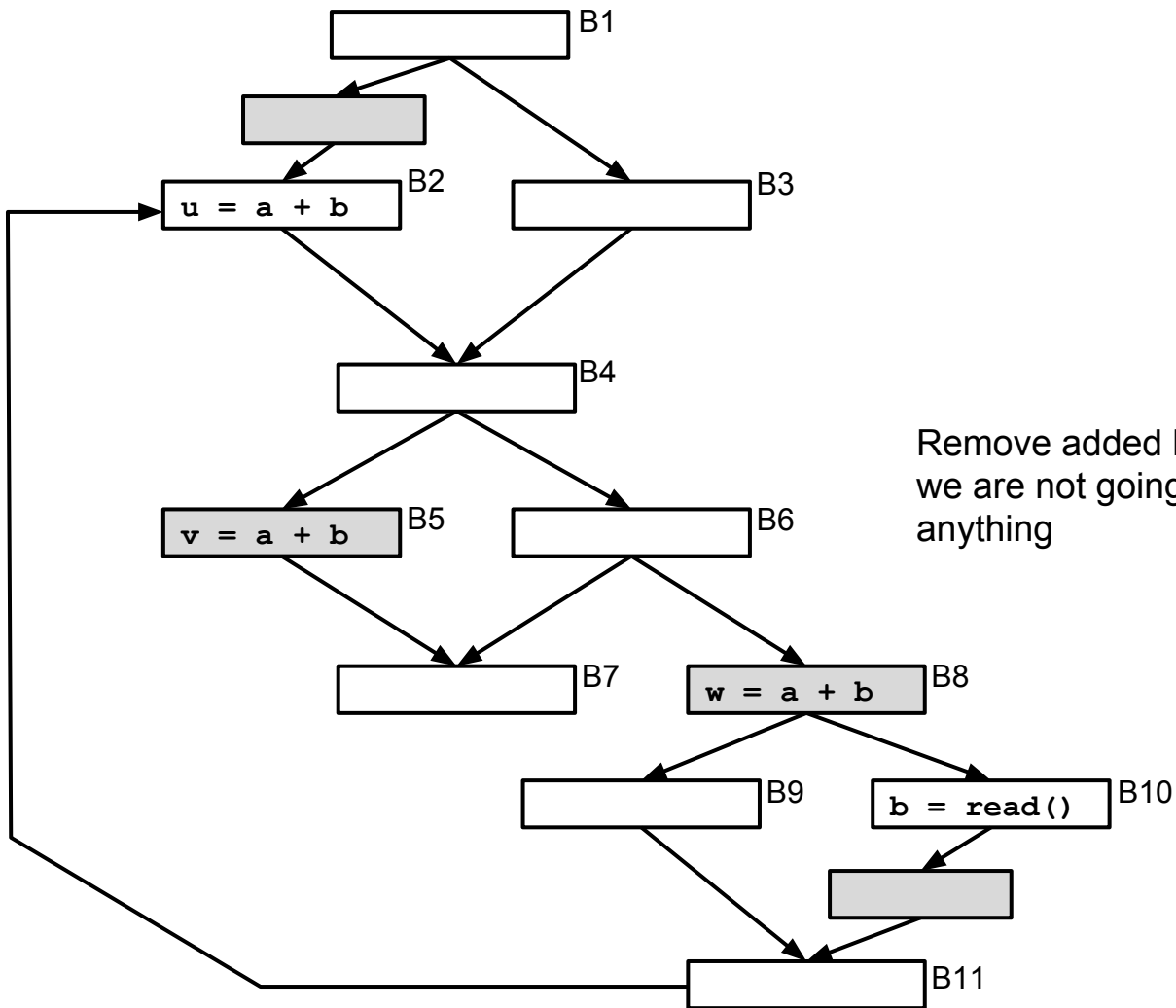
How much can we postpone evaluating $a + b$?



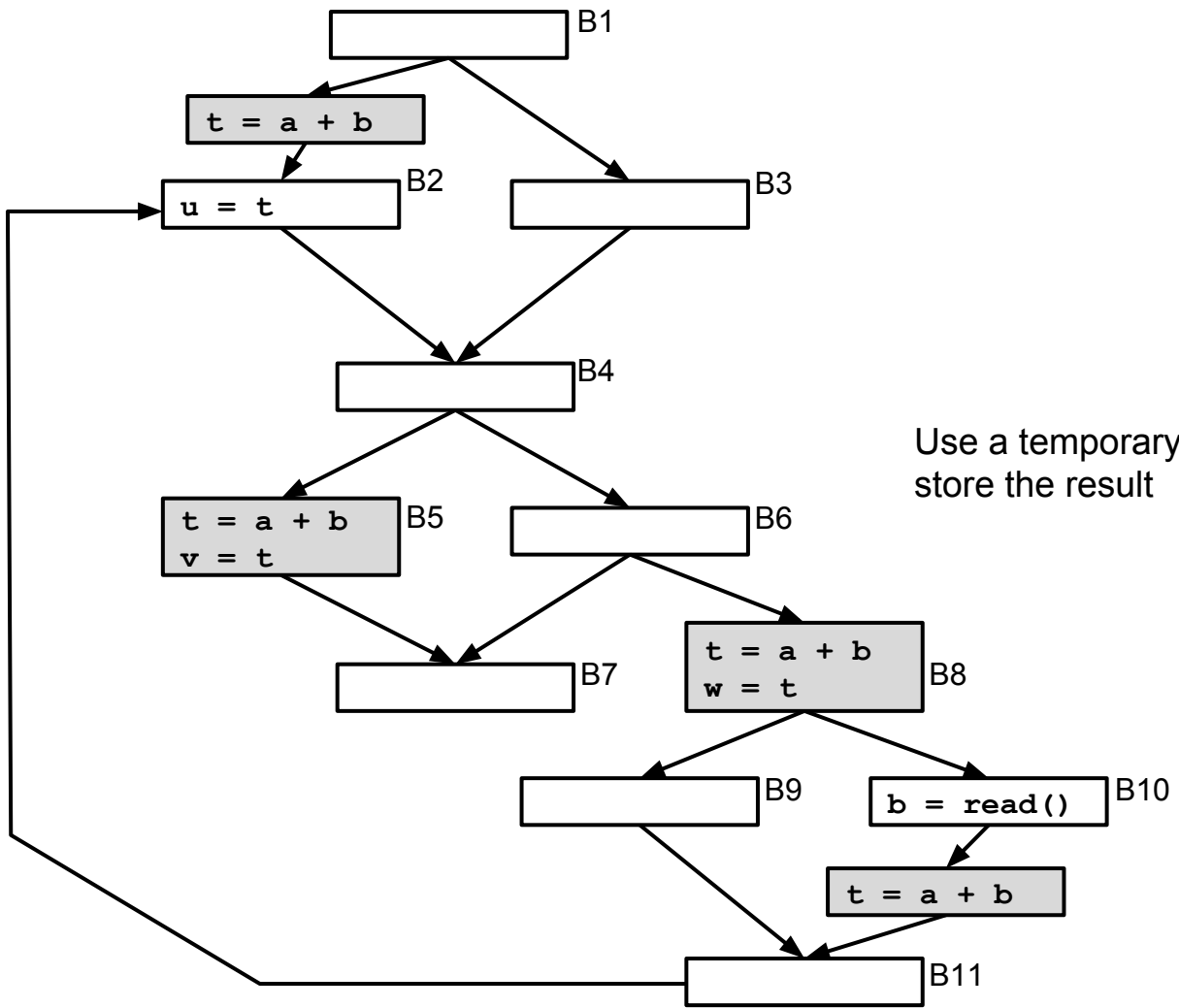
Latest: need to compute `a + b` here



Latest: need to compute
`a + b` here



Remove added blocks where we are not going to compute anything



Use a temporary variable to store the result

