Name:- Suraj kumar
RollNo:- 13000119075
Dept:- CSE 'B'

15 PUZZLE

// live_node_set: sets to hold the live nodes at any time

// lowcost: variable to hold the cost of the best cost at any given node.

Begin
lowcost = ∞
while live_node_set ≠ ∞ do
→ chose a branching node k such that k∈ live_node_set;
// k is E-node

→ live_node_set = {k},

→ Generate the children of node k and the corresponding lower bounds;
S: {(i, 2i) : i is child of k and 2i its lower bound}

for each element (i, 2i) in S do
→ if 2i > U // more than lower bound

-then
-kill child i; // i is a child node
else
if child is a solution
then
V=Zi ; current best = child i ;
else
add child i to live-node-set;
endif;
endif;
endfor;
end while;
END

Complexity Analysis

Time complexity = $O(n^2)$

Space complexity = $O(n^2)$