Name: Adwait Purao
Uid: 2021300101 Batch: B2

Branch and Bound is a tree search algorithm used to solve optimization problems. The algorithm generates live nodes that have not yet been expanded and explores E-nodes that are currently being expanded. The cost function $C(X) = g(X) + h(X)$ is used to determine the next E-node by assigning a cost to each node X. The algorithm avoids searching in sub-trees that do not contain an answer node by using an intelligent ranking function.

The cost function is defined as the sum of the cost of reaching the current node from the root and the cost of reaching an answer node from X. It is an efficient algorithm to solve a wide range of optimization problems, including the sliding puzzle problem. However, the efficiency of the algorithm depends on the optimization of the implementation and the design of the cost function.