→ Implement 8 puzzle problem using A* algorithm.

Evaluate function : $f(n) = g(n) + h(n)$

$f(n)$: estimated total cost of path through n to goal.

$g(n)$: cost for reach n.

$h(n)$: estimated cost from n to goal

$f(n)$: estimated total cost.

Best first search has $f(n) = h(n)$

Algorithm:

function A* search (problem) returns a solution (or) failure

node ← a node n with n state = problem. initial state, ng

frontier ← a priority queue ordered by ascending g^th only element n.

loop do

if empty ? (frontier) then return failure.

n ← pop (frontier)

if problem. goal test (n. state) then return solution (n)

for each action a in problem. actions (n. state) do

n' ← child node (problem, n, a)

insert [n', g(n') + h(n'), frontier)