

LAB-6

29/10

8 queens -

A* algorithm

Step-1

Construct an 8x8 board:

1				Q			
2	Q						
3			Q				
4						Q	
5		Q					
6							Q
7					Q		
8	Q						

function 8-Queen-Star():

initial = random-positions()

open-list = priority-queue()

open-list.push(initial, heuristic)

while (open-list != 0):

current = open-list.pop-min()

if (heuristic(current) == 0)

return current

// Soln found.

for neighbour in generate(current):

open-list.push(neighbour, heuristic)

return "No solution".

function heuristic():

count = 0.

if (same row || same column || same diagonal):

count++

return count.

Hill Climbing - 8 Queens

function 8-Queen():

initial = generate-random()

while true:

conflict = heuristic(state)

if (conflict == 0)

return current

// Soln found =

for neighbours in generate(current)

if new-conflict < current-conflict

current = new-state

return "No solution"

function heuristic(state)

count = 0

if (same row | same column | same diagonal)

count++

return count.

might not find soln.

Proceed

TUPTUO

matrix of 8x8

.
.	Q	.	.	.	.	.	.
.	.	.	Q	.	.	.	.
Q	.	.	.	.	.	.	.
.	.	.	.	.	.	Q	.
.	.	.	.	Q	.	.	.
.	.	Q	.	.	.	.	.
.	.	.	.	.	.	Q	.

- possible soln

.	.	.	.	.	.	Q	.
Q	.	.	.	.	.	.	.
.	.	Q	.	.	.	.	.
.	.	.	.	.	.	Q	.
.	Q	.	.	.	.	.	.
.	.	.	.	Q	.	.	.
.	.	.	.	.	.	.	Q
.	.	.	Q	.	.	.	.

avg heuristic = 1

OUTPUT -

A* - One possible solution

```

Q . . . . .
. . . . . Q
. . . . Q . .
. . . . . . Q
. Q . . . . .
. . . Q . . .
. . . . . Q .
. . Q . . . .
    
```

Hill Climbing -

```

. Q . . . . .
. . . . . Q
. . . . Q . .
. . Q . . . .
. . . . . Q .
. . . Q . . .
Q . . . . .
. . . . Q . .
    
```

No solution found

: (1) sitirunt mitalu
 . 0 = dural
 1 = dural
 . dural mitalu

: (largest amal // smallest amal // worst amal) ji

Answer 8 - possible mitalu

: (Answer - 8 mitalu)
 (1) mitalu - starting = kitalu
 : surt ditalu
 (state) sitirunt = ditalu
 (0 == ditalu) ji
 dural mitalu

Surf amal 11

(Answer) starting is kitalu of
 ditalu - dural > ditalu - worst ji
 mitalu - worst = dural

29/10/24 "mitalu all" mitalu
 (state) sitirunt mitalu

0 = dural
 (largest amal // smallest amal // worst amal) ji
 . ++ dural
 . dural mitalu

. dural hif dural ditalu