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Lab-4

8-queen problem using hill climbing local search

Pseudocode

```
Function (Hill Climbing) max_iterations)
current_state = generate_random_board(N)
current_cost = calculate_cost(current_state)
for iterations: 1 to max_iterations
    if current_cost == 0:
        return current_state
    neighbours = generate_neighbours(current
    best_neighbour = None
    best_cost = current_cost
    for neighbour in neighbours:
        neighbour cost = calculate_cost(n
        if neighbour_cost < best_cost
            best_cost = neighbour_cost
            best_neighbour = neighbour
    if best_cost >= current_cost:
        return current_state
    current_state = best_neighbour
    current_cost = best_cost
return None
```

Output

Iteration 0: Current State: [0, 3, 0, 2], cost:
Iteration 1: current State: [1, 3, 0, 2], cost:
Solution found: [1, 3, 0, 2].