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CN-Lab3

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8 puzzle using Manhattan distance:-

```
def solve(src, target, limit, visited_states):  
    if src == target:  
        return True  
    if limit >= 12:  
        return False  
    visited_states.append(src)  
    actions = possible_moves(src, visited_states)  
    for action in actions:  
        if manhattan(src, target) < min:  
            new_move = action  
    print(new_move)  
    if solve(new_move, target, limit+1, visited_states) is True:  
        return True  
    return False
```

```
def manhattan(src, target):  
    sum = 0  
    for i in range(3):  
        for j in range(3):  
            if src[i][j] != 0:  
                b = index(src, src[i][j])  
                c = index(target, src[i][j])  
                sum += (abs(b[0] - c[0]) + abs(b[1] - c[1]))  
    return sum
```

①

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