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Practical no 3

AIM: Implement A* search algorithm for Romanian map problem or any other map

CODE

```
from simpleai.search import SearchProblem, astar
GOAL = 'KRUNAL DHAVLE'
class HelloProblem(SearchProblem):
    def actions(self, state):
        if len(state) < len(GOAL):
            return list(' ABCDEFGHIJKLMNOPQRSTUVWXYZ')
        else:
            return []

    def result(self, state, action):
        return state + action
    def is_goal(self, state):
        return state == GOAL
    def heuristic(self, state):

        wrong = sum([1 if state[i] != GOAL[i]
                     else 0
                     for i in range(len(state))])
        missing = len(GOAL) - len(state)
        return wrong + missing
problem = HelloProblem(initial_state='')
```

```
result = astar(problem)
print(result.state)
print(result.path())
```

```
================= RESTART: C:/Users/BlackBot/Desktop/aiprac3.py ================
KRUNAL DHAVLE
[(None, ''), ('K', 'K'), ('R', 'KR'), ('U', 'KRU'), ('N', 'KRUN'), ('A', 'KRUNA'), ('L', 'KR
UNAL'), (' ', 'KRUNAL '), ('D', 'KRUNAL D'), ('H', 'KRUNAL DH'), ('A', 'KRUNAL DHA'), ('V',
'KRUNAL DHAV'), ('L', 'KRUNAL DHAVL'), ('E', 'KRUNAL DHAVLE')]
>>>
```