

KI HA 1

Tom Schmidt

Stefan Poggenberg

Samuel Schöpa

Bjarne Hiller
216203851

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1 Der Staubsauger-Agent

1.1 Programm

```
1 def ModelBasedVacuumAgent():
2     """An agent that keeps track of what locations are clean or
3         dirty."""
4     model = {}
5     direction = {(-1,0): 'Left', (1,0): 'Right', (0,-1): 'Up',
6                 (0,1): 'Down'}
7     last_location = None
8     last_move = None
9     moves = None
10
11     def program(percept):
12         nonlocal last_location
13         nonlocal last_move
14         nonlocal moves
15         (x, y), status = percept
16         model[(x, y)] = status
17
18         if not ((x, y) == last_location):
19             # new location: check for unknown neighbors
20             moves = [direction[(i, j)] for (i, j) in direction.
21                     keys() if not (x + i, y + j) in model]
22             last_location = (x, y)
23         else:
24             # last move had no effect: remove last_move
25             if last_move in moves:
26                 moves.remove(last_move)
```

```
25         if status == 'Dirty':
26             # Clean if location is dirty
27             return 'Suck'
28         elif len(moves) > 0:
29             # Into the unknown!
30             last_move = random.choice(moves)
31             return last_move
32         else:
33             return random.choice(['Right', 'Left', 'Up', 'Down'
34                                   ])
35     return Agent(program)
```

1.2 Optimaler Agent

2 Problemlösen durch Suchen