

# KI HA 1

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## 1 Schiebepuzzles als Planungsproblem

### 1.1 3

step

0: MOVE T1 P22 P21

1: MOVE T3 P12 P22

2: MOVE T2 P11 P12

3: MOVE T1 P21 P11

4: MOVE T3 P22 P21 vllt sollte ich fauler Sack nicht einfach die ff ergebnisse hier hinklatschen

### 1.2 4

at(tile, position): Ist an gegebener Position gegebenes tile?

empty(position): Ist auf der Position kein tile?

neighbor(position, position): Liegen gegebene Positionen nebeneinander?

move(tile, position): Bewege gegebenes tile auf gegebene Position.

### 1.3 5

#### 1.3.1 domain.pddl

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```
1 (define (domain puzzle)
2   (:types tile position)
3
4   (:predicates
5     (at ?x - tile ?p - position)
6     (empty ?p - position)
7     (neighbor ?p - position ?q - position)
8   )
```

```

9
10 (:action move
11   :parameters (?x - tile ?f ?t - position)
12   :precondition
13     (and
14       (at ?x ?f)
15       (empty ?t)
16       (neighbor ?f ?t)
17     )
18   :effect
19     (and
20       (at ?x ?t)
21       (empty ?f)
22     )
23 )
24 )

```

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### 1.3.2 problem.pddl

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```

1 (define (problem 2puzzle)
2   (:domain puzzle)
3
4   (:objects
5     t1 t2 t3 - tile
6     p11 p12 p21 p22 - position
7   )
8
9   (:init
10    (neighbor p11 p12)
11    (neighbor p11 p21)
12    (neighbor p12 p11)
13    (neighbor p12 p22)
14    (neighbor p21 p11)
15    (neighbor p21 p22)
16    (neighbor p22 p21)
17    (neighbor p22 p12)
18    (at t2 p11)
19    (at t3 p12)
20    (at t1 p22)
21    (empty p21)
22  )
23
24  (:goal

```

```
25      (and
26        (at t1 p11)
27        (at t2 p12)
28        (at t3 p21)
29      )
30    )
31  )
```

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