KI HA 1

Tom Schmidt	Stefan Poggenberg	Samuel Schöpa	Bjarne Hiller
216204224	218100161	216203821	216203851

18. Mai 2018

1 Schiebepuzzles als Planungsproblem

1.1 3

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

```
(define (domain puzzle)
  (:types tile position)

  (:predicates
    (at ?x - tile ?p - position)
    (empty ?p - position)
    (neighbor ?p - position ?q - position)
  )

  (:action move
    :parameters (?x - tile ?f ?t - position)
    :precondition
      (and
        (at ?x ?f)
        (empty ?t)
        (neighbor ?f ?t)
      )
    :effect
      (and
        (at ?x ?t)
        (empty ?f)
      )
  )
)
```

1.3.2 problem.pddl

```
(define (problem 2puzzle)
  (:domain puzzle)

  (:objects
    t1 t2 t3 - tile
    p11 p12 p21 p22 - position
  )

  (:init
    (neighbor p11 p12)
    (neighbor p11 p21)
    (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  )
```