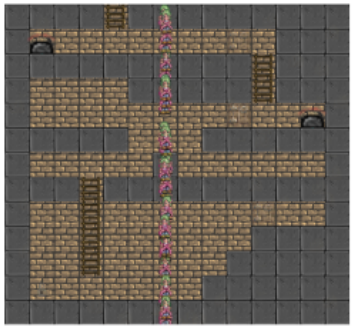
From Skills to Symbols: Learning Symbolic Representations for Abstract High-Level Planning[1]

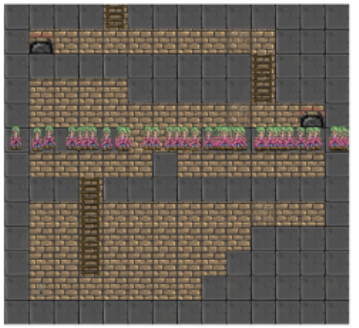
- Core challenge in AI: high-level reasoning in low-level world
- How to develop high-level abstraction that faciliates low-level action?
- Implement (and extend) framework from [1]

```
(:action jump_left_option319
 :parameters ()
 :precondition (and (notfailed) (symbol29) (symbol28) )
 :effect (probabilistic
          0.4723 (and (symbol17) (symbol1) (not (symbol28)) (not (symbol29))
                      (decrease (reward) 62.39))
          0.5277 (and (symbol20) (symbol1) (not (symbol28)) (not (symbol29))
                      (decrease (reward) 36.32))
         )
)
```

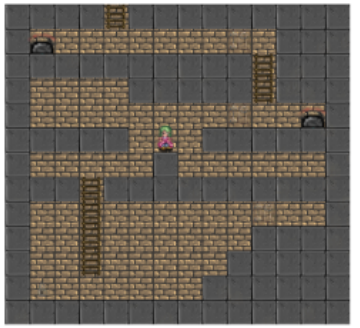
(a) Generated PDDL Operator



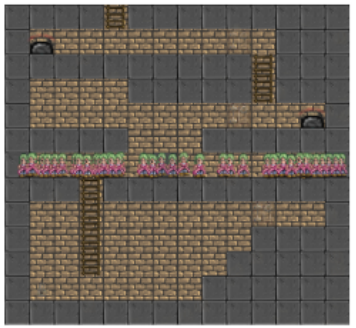
(b) symbol29



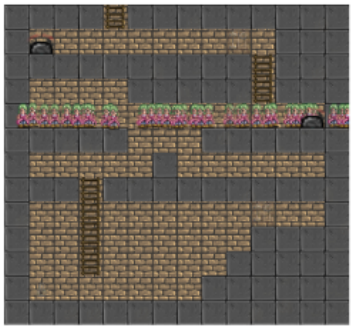
(c) symbol28



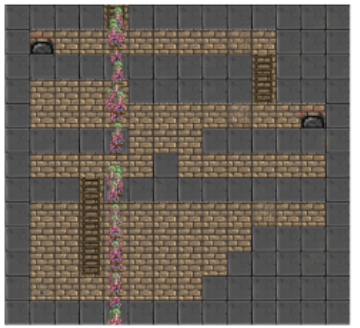
(d) symbol28 and symbol29



(e) symbol17



(f) symbol20



(g) symbol1

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[1]George Konidaris, Leslie Pack Kaelbling and Tomas Lozano-Perez (2018) "From Skills to Symbols: Learning Symbolic Representations for Abstract High-Level Planning", Volume 61, pages 215-289