

Solution Problem Set IV: Modeling in STRIPS and PDDL

1.

For a given set of Blocks B :

$F = \{ \text{on}(x,y), \text{onTable}(x), \text{clear}(x), \text{holding}(x), \text{armFree} \mid x, y \in B \},$

$O =$

$\{ \text{stack}(x,y):$

- Prec: $\text{holding}(x), \text{clear}(y)$
- Add: $\text{clear}(x), \text{on}(x,y), \text{armFree}$
- Del: $\text{clear}(y), \text{holding}(x)$

$\mid x, y \in B \}$

$\cup \{ \text{unstack}(x,y):$

- Prec: $\text{on}(x,y), \text{clear}(x), \text{armFree}$
- Add: $\text{holding}(x), \text{clear}(y)$
- Del: $\text{clear}(x), \text{on}(x,y), \text{armFree}$

$\mid x, y \in B \}$

$\cup \{ \text{putdown}(x):$

- Prec: $\text{holding}(x)$
- Add: $\text{clear}(x), \text{onTable}(x), \text{armFree}$
- Del: $\text{holding}(x)$

$\mid x \in B \}$

$\cup \{ \text{pickup}(x):$

- Prec: $\text{onTable}(x), \text{clear}(x), \text{armFree}$
- Add: $\text{holding}(x)$
- Del: $\text{clear}(x), \text{onTable}(x), \text{armFree}$

$\mid x \in B \}$

$I = \{ \text{on}(a,c), \text{onTable}(c), \text{onTable}(b), \text{clear}(a), \text{clear}(b), \text{armFree} \}$

$G = \{ \text{on}(a,b), \text{on}(b,c) \}$

2-3. PDDL domains have been created here: http://editor.planning.domains/#read_session=TYXYMCQN8w