AI Planning for Autonomy
Solution Problem Set IV: Modeling in STRIPS and PDDL

1.

For a given set of Blocks B:

F={ on(x,y), onTable(x), clear(x), holding(x), armFree | $x, y \in B$ },
A= { stack(x,y):

- Prec: holding(x), clear(y)

- Add: clear(x), on(x,y), armFree

- Del: clear(y), holding(x)

| $x, y \in B$ }

A = $A \cup$ { unstack(x,y):

- Prec: on(x,y), clear(x), armFree

- Add: holding(x), clear(y)

- Del: clear(x), on(x,y), armFree

| $x, y \in B$ }

A= $A \cup$ { putdown(x):

- Prec: holding(x)

- Add: clear(x), onTable(x), armFree

- Del: holding(x)

| $x \in B$ }

A = $A \cup$ { pickup(x):

- Prec: onTable(x), clear(x), armFree

- Add: holding(x)

- Del: clear(x), onTable(x), armFree

| $x \in B$ }

I = {on(a,c), onTable(c), onTable(b), clear(a), clear(b), armFree}
F = { on(a,b), on(b,c) }

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