

Action Rule of SHRDLU

```
(DEF PICKUP
  (CONSE (X Y) ( #PICKUP $?X)
    (GOAL (#MANIP $?X))
    (COND ((GOAL (#GRASPING $?X)))
      ((GOAL (#GRASPING $_Y))
        (GOAL (#GET-RID-OF $?Y)))
      (T))
    (GOAL (#CLEARTOP  $?X))
    (GOAL (#MOVEHAND  $?X))
    (ASSERT (#GRASPING $?X))))

(DEF GRASP
  (CONSE (X Y) ( #GRASP $?X)
    (GOAL (#MANIP $?X))
    (COND ((GOAL (#GRASPING $?X)))
      ((GOAL (#GRASPING $_Y))
        (GOAL (#GET-RID-OF $?Y)))
      (T))
    (GOAL (#CLEARTOP  $?X))
    (GOAL (#MOVEHAND  $?X))
    (ASSERT (#GRASPING $?X))))

(DEF GET-RID-OF
  (CONSE (X Y) (#GET-RI-OF $?X)
    (OR (GOAL (#PUTON $?X :TABLE))
      (GOAL (#PUTON $?X $?Y))))

(DEF CLEARTOP
  (CONSE (X Y) (#CLEARTOP $?X)
    (COND ((GOAL (#SUPPORT $?X $_Y))
      (GOAL (#GET-RID-OF $?Y)))
      ((ASSERT (#CLEARTOP $?Y)))))

(DEF PUTON
  (CONSE (X Y Z) (#PUTON $?X $?Y)
    (NOT (EQ $?X $?Y))
    (GOAL (#FINDSPACE $?Y $E (SIZE $?X) $_Z))
    (GOAL (#PUT $?X $?Z)))

(DEF PUT
  (CONSE (X Y Z) (#PUT $?X  $?Y)
    (CLEAR $?Y (SIZE $?X) $?X)
    (GOAL (#GRASP  $?X))
    (GOAL (#MOVEHAND  $?Y))
    (GOAL (#UNGRASP)))
```