“Consider the state space for the Blocks World that includes: (1) Fourteen blocks (a, b, c, d, e, f, g, h, i, j, k, l, m, n);”

Block(x) → a(x) V b(x) V c(x) V d(x) V e(x) V f(x) V g(x) V h(x) V i(x) V j(x) V k(x) V l(x) V m(x) V n(x)

“(2) The relations among the blocks (ABOVE, ON, CLEAR, TABLE);”

Block(x) Ʌ Block(y) → ABOVE(x,y) V ON(x,y) V CLEAR(x,y) V TABLE(x,y) V

ABOVE(y,x) V ON(y,x) V CLEAR(y,x) V TABLE(y,x)

“(3) There are only two locations (L1, L2) on the table for blocks possible placement;”

Block(x) → L1(x) V L2(x)

“(4) the functions or actions {PICK-UP(Li), PUT-DOWN(Li), STACK(Li), MOVE(Li), UNSTACK(Li), NOOP};”

L1(x) V L2(x) 🡪 PICK-UP(L1) V PUT-DOWN(L1) V STACK(L1) V MOVE(L1) V UNSTACK(L1) V NOOP(L1) V

PICK-UP(L2) V PUT-DOWN(L2) V STACK(L2) V MOVE(L2) V UNSTACK(L2) V NOOP(L2)

“you program must perform the sequence of actions on the blocks by a two robotic arms with box grasping capabilities”

ⱯxⱯzⱯi Block(x) Ʌ Arm(i) Ʌ Action(z) 🡪 Ⴈⱻy Block(y) Ʌ Arm(i) Ʌ Action(z)

“Each robotic arm can perform one action on one box at a time”

ⱯxⱯzⱯi Block(x) Ʌ Arm(i) Ʌ Action(z) 🡪 Ⴈⱻy Block(x) Ʌ Arm(i) Ʌ Action(y)