First, we have to check to see if AT(Sam, Window) Λ AT(Table, Niche) S0 is true, and it is NOT, so we continue:

S0= AT(Sam, door), AT(Table, center)

Now, we check to see which (if any) of the operators are applicable:   
**Push?** Let us assume Ǝx AT(Table, x) Λ AT(Sam, x)

AT(Table, center) V AT(Sam, center) AT(Table, center)

AT(Sam, center)

F

So this doesn’t apply, however we can move!

Move(Door, Center) turns S1 into: AT(Sam, Center) Λ AT(Table, Center)

We repeat the above check for push, but this time the resolution comes up positive! Although so does the move, so we can choose either one. We just continue this search until we reach our goal state, the state diagram looks like the following:

S3

Sgoal

S2

S1

S0

Move(u)

Move(u) push(u)

Move(u)