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COGS 100

16 May 2025

Week 2: Cognitive Models Assignment

1. Create a “daisy” within the top face of the cube - “daisy”: a yellow tile in the middle, surrounded by four white tiles: one above, below, left, and right of it.
    a. IF there is a white edge tile in the middle layer, AND there's not already a tile in the way, THEN move it to the top layer
        i. This rule brings white to the edge tile towards the top face to form a daisy without disrupting any other pieces
    b. IF there is a white edge tile that is in the middle layer but flipped, AND there’s not already a tile in the way, THEN rotate it until in the ideal middle layer position,
        i. This rule helps reassign a piece to make it possible to form a daisy on the top face
    c. IF there is a white edge tile that is in the middle layer, AND there’s a tile in the way, THEN rotate the daisy until the tile in the spot is not white
        i. This rule rotates the daisy to help make it possible to insert the white tile that is not already in the daisy formation
2. Create a “white cross” - “white cross”: a face where the middle tile is white, surrounded by four white tiles: one above, below, left, and right of it.

a. IF there is a white edge tile on the top face, AND it's corresponding colour tile is not aligned with the colour of the centre colour of it's adjacent side, THEN rotate the until the edge is aligned
    i. This rule makes sure we have a proper alignment before proceeding
b. IF there is a white edge tile on the top face, AND it's corresponding colour tile is aligned with the colour of the centre colour of it's adjacent side, THEN rotate it 180 degrees
    i. This rule locks the tile in the correct position for future substeps
c. IF there is no white edge tile on the top face, AND there is no white cross, THEN revert to substep one
    i. This rule solves all issues and missteps and redirects user to revert to the previous state for correct positioning

3. Create the top layer of each face - each side's top layer will have the same colour as it's respective side
    a. IF there is a white tile corner piece, AND its two corresponding corner colours do not match the centerpieces to the side of it, THEN rotate the corner piece until the corner colours match the centerpieces to the side of it.
        i. This rule prepares corner for proper positioning
    b. IF there is a white tile corner piece, AND corner colours match the centerpieces to the side of it, AND white faces to the left, THEN hold the otherside of the corner that white is facing and preform the left algorithm: turn left counterclockwise, turn top counterclockwise, left clockwise, top clockwise
        i. This rule is a lefty algorithm technique for proper insertion

    c. IF there is a white tile corner piece, AND corner colours match the centerpieces to the side of it, AND white faces to the right, THEN hold the otherside of the corner that white is facing and turn right side clockwise, then preform the righty algorithm: turn top clockwise, then turn right counterclockwise, then turn top counterclockwise
        i. This rule is a righty algorithm technique for proper insertion
4. Create the middle layer of each face - each side's middle layer will have the same colour as it's respective side
    a. IF edge tile is in the middle layer but in the wrong position, THEN move it to the top layer, then reinsert correctly
        i. Resets incorrect placed tile for proper reinsertion
    b. IF edge tile belong in middle layer in on top, THEN align the centre and perform the left or right insertion algorithm
        i. Placement method for the middle layer edge tiles
    c. IF all top edges are yellow but middle is incomplete, THEN remove all middle edge to create space
        i. This rule creates options for movement when no proper moves remain
5. Solve for Yellow Cross
    a. IF no yellow edges show, THEN do the cross algorithm to create a line
        i. This rule creates a yellow cross using an algorithm
    b. IF line a yellow line exists but no cross, THEN flip the line horizontally and repeat algorithm
        i. Converts line into a complete cross

    c. IF the yellow is in a L shape, TEHN position at the top-left and perform a lefty/righty algorithm
        i. Solution if L-shape is apparent
6. Solve for Cube
    a. IF one yellow corner is positioned correctly, THEN rotate the front right side and perform the lefty/righty algorithm
        i. Cycles remaining corners into their correct place
    b. IF no corners are correct, THEN perform the lefty/righty algorithm until correct corners
        i. Creates a corner if none are apparent
    c. IF corners are positioned correctly but not orientated, THEN performer the corner-twist algorithm until solved
        i. Final adjustments for the solution of the cube