Will Schell

Bit 16

$L(G_{LVL})$

- 8 LOCATIONS
- EACH LOCATION CAN BE POPULATED BY ANY NUMBER OF UNIFORMED SIZED CUBES OR BY ONE OF ANY PYRAMID WHOSE BASE MATCHES THE FACES OF THE CUBES
- THE CUES ARE EITHER RED, BLUE, YELLOW
- OBJECTS (CUBES OR PYRAMIDS) MAY BE STACKED VERTICALLY ON CUBES

COMMANDS:

1) $placeCube_{color}$

2) placePyramid

3) newLocation

4) emptyLocation

5) numCubes

6) numPyramids

Questions:

1) Is any location empty?

2) Can a cube be placed in the location?

3) Can a pyramid be placed in the location?

4) How many pyramids are there?

5) How many cubes are there?

6) What is the current sequence of cubes and/or pyramid at a location?

CFG for Linesville:

Start Symbol: Linesville

Terminals: {Empty, Red Block, Blue Block, Yellow Block, Pyramid, L1:, L2:, L3:, L4:, L5:, L6:, L7:, L8:, -}

Non-Terminals: {Linesville, L1, L2, L3, L4, L5, L6, L7, L8, Status, Block}

1. Linesville -> L1: L1 - L2: L2 - L3: L3 - L4: L4 - L5: L5 - L6: L6 - L7: L7 - L8: L8
2. L1 -> Status
3. L2 -> Status
4. L3 -> Status
5. L4 -> Status
6. L5 -> Status
7. L6 -> Status
8. L7 -> Status
9. L8 -> Status
10. Status -> Empty
11. Status -> Block
12. Status -> Pyramid
13. Status -> Block Pyramid
14. Block -> Block Block
15. Block -> Red Block | Yellow Block | Blue Block

| EMPTY SET: | | | L1: Empty - L2: Empty - L3: Empty - L4: Empty - L5: Empty - L6: Empty - L7: Empty - L8: Empty | | | | | | | | | | | | | | | RULE: |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Linesville | => | L1: L1 | - | L2: L2 | - | L3: L3 | - | L4: L4 | - | L5:L5 | - | L6: L6 | - | L7: L7 | - | L8: L8 | 1 |
| 2 | | => | L1: Status | - | L2: L2 | - | L3: L3 | - | L4: L4 | - | L5:L5 | - | L6: L6 | - | L7: L7 | - | L8: L8 | 2 |
| 3 | | => | L1: Empty | - | L2: L2 | - | L3: L3 | - | L4: L4 | - | L5:L5 | - | L6: L6 | - | L7: L7 | - | L8: L8 | 10 |
| 4 | | => | L1: Empty | - | L2: Status | - | L3: L3 | - | L4: L4 | - | L5:L5 | - | L6: L6 | - | L7: L7 | - | L8: L8 | 3 |
| 5 | | => | L1: Empty | - | L2: Empty | - | L3: L3 | - | L4: L4 | - | L5:L5 | - | L6: L6 | - | L7: L7 | - | L8: L8 | 10 |
| 6 | | => | L1: Empty | - | L2: Empty | - | L3: Status | - | L4: L4 | - | L5:L5 | - | L6: L6 | - | L7: L7 | - | L8: L8 | 5 |
| 7 | | => | L1: Empty | - | L2: Empty | - | L3: Empty | - | L4: L4 | - | L5:L5 | - | L6: L6 | - | L7: L7 | - | L8: L8 | 10 |
| 8 | | => | L1: Empty | - | L2: Empty | - | L3: Empty | - | L4: Status | - | L5:L5 | - | L6: L6 | - | L7: L7 | - | L8: L8 | 5 |
| 9 | | => | L1: Empty | - | L2: Empty | - | L3: Empty | - | L4: Empty | - | L5:L5 | - | L6: L6 | - | L7: L7 | - | L8: L8 | 10 |
| 10 | | => | L1: Empty | - | L2: Empty | - | L3: Empty | - | L4: Empty | - | L5:Status | - | L6: L6 | - | L7: L7 | - | L8: L8 | 6 |
| 11 | | => | L1: Empty | - | L2: Empty | - | L3: Empty | - | L4: Empty | - | L5: Empty | - | L6: L6 | - | L7: L7 | - | L8: L8 | 10 |
| 12 | | => | L1: Empty | - | L2: Empty | - | L3: Empty | - | L4: Empty | - | L5: Empty | - | L6: Status | - | L7: L7 | - | L8: L8 | 7 |
| 13 | | => | L1: Empty | - | L2: Empty | - | L3: Empty | - | L4: Empty | - | L5: Empty | - | L6: Empty | - | L7: L7 | - | L8: L8 | 10 |
| 14 | | => | L1: Empty | - | L2: Empty | - | L3: Empty | - | L4: Empty | - | L5: Empty | - | L6: Empty | - | L7: Status | - | L8: L8 | 8 |
| 15 | | => | L1: Empty | - | L2: Empty | - | L3: Empty | - | L4: Empty | - | L5: Empty | - | L6: Empty | - | L7: Empty | - | L8: L8 | 10 |
| 16 | | => | L1: Empty | - | L2: Empty | - | L3: Empty | - | L4: Empty | - | L5: Empty | - | L6: Empty | - | L7: Empty | - | L7: Status | 9 |
| 17 | | => | L1: Empty | - | L2: Empty | - | L3: Empty | - | L4: Empty | - | L5: Empty | - | L6: Empty | - | L7: Empty | - | L8: Empty | 10 |