Assignment 1 – Lucas Estienne

List of inputs

|  |  |  |  |
| --- | --- | --- | --- |
| **Input** | **ID** | **Value** | **Persistent Data** |
| IN\_LEFT\_SCAN | 0 | ls | person\_msg.id |
| IN\_RIGHT\_SCAN | 1 | rs | person\_msg.id |
| IN\_WEIGHT\_SCALE | 2 | ws | person\_msg.weight |
| IN\_LEFT\_OPEN | 3 | lo |  |
| IN\_RIGHT\_OPEN | 4 | ro |  |
| IN\_LEFT\_CLOSED | 5 | lc |  |
| IN\_RIGHT\_CLOSED | 6 | rc |  |
| IN\_GUARD\_RIGHT\_LOCK | 7 | grl |  |
| IN\_GUARD\_RIGHT\_UNLOCK | 8 | gru |  |
| IN\_GUARD\_LEFT\_LOCK | 9 | gll |  |
| IN\_GUARD\_LEFT\_UNLOCK | 10 | glu |  |
| IN\_EXIT | 11 | exit |  |

List of outputs

|  |  |  |  |
| --- | --- | --- | --- |
| **Output** | **ID** | **Value** | **Persistent Data** |
| OUT\_START | 0 | The controller is running as PID: | getpid() |
| OUT\_READY | 1 | Waiting for Person... |  |
| OUT\_SCAN | 2 | Person scanned ID. ID = | person\_msg.id |
| OUT\_WEIGHT\_SCALE | 3 | Person weighed. Weight = | person\_msg.weight |
| OUT\_LEFT\_OPEN | 4 | Person opened left door. |  |
| OUT\_RIGHT\_OPEN | 5 | Person opened right door. |  |
| OUT\_LEFT\_CLOSED | 6 | Person closed left door. |  |
| OUT\_RIGHT\_CLOSED | 7 | Person closed right door. |  |
| OUT\_GUARD\_RIGHT\_LOCK | 8 | Right door locked by Guard. |  |
| OUT\_GUARD\_RIGHT\_UNLOCK | 9 | Right door unlocked by Guard. |  |
| OUT\_GUARD\_LEFT\_LOCK | 10 | Left door locked by Guard. |  |
| OUT\_GUARD\_LEFT\_UNLOCK | 11 | Left door unlocked by Guard. |  |
| OUT\_EXIT | 12 | Exit display. |  |
| OUT\_STOP | 13 | Exiting controller. |  |

List of states

|  |  |
| --- | --- |
| **State** | **Value** |
| ST\_START | 0 |
| ST\_READY | 1 |
| ST\_LEFT\_SCAN | 2 |
| ST\_RIGHT\_SCAN | 3 |
| ST\_WEIGHT\_SCALE | 4 |
| ST\_LEFT\_OPEN | 5 |
| ST\_RIGHT\_OPEN | 6 |
| ST\_LEFT\_CLOSED | 7 |
| ST\_RIGHT\_CLOSED | 8 |
| ST\_GUARD\_RIGHT\_LOCK | 9 |
| ST\_GUARD\_RIGHT\_UNLOCK | 10 |
| ST\_GUARD\_LEFT\_LOCK | 11 |
| ST\_GUARD\_LEFT\_UNLOCK | 12 |
| ST\_EXIT | 13 |
| ST\_STOP | 14 |

List of conditions:

|  |  |  |
| --- | --- | --- |
| Old State | Condition | New State |
| ST\_START | ST\_START entered | ST\_READY |
| ST\_READY | person\_msg.state is ST\_LEFT\_SCAN | ST\_LEFT\_SCAN |
| ST\_READY | person\_msg.state is ST\_RIGHT\_SCAN | ST\_RIGHT\_SCAN |
| ST\_LEFT\_SCAN | person\_msg.state is ST\_GUARD\_LEFT\_UNLOCK | ST\_GUARD\_LEFT\_UNLOCK |
| ST\_RIGHT\_SCAN | person\_msg.state is ST\_GUARD\_RIGHT\_UNLOCK | ST\_GUARD\_RIGHT\_UNLOCK |
| ST\_WEIGHT\_SCALE | person\_msg.state is ST\_LEFT\_CLOSED | ST\_LEFT\_CLOSED |
| ST\_WEIGHT\_SCALE | person\_msg.state is ST\_RIGHT\_CLOSED | ST\_RIGHT\_CLOSED |
| ST\_LEFT\_OPEN | person\_msg.state is ST\_WEIGHT\_SCALE | ST\_WEIGHT\_SCALE |
| ST\_LEFT\_OPEN | person\_msg.state is ST\_LEFT\_CLOSED | ST\_LEFT\_CLOSED |
| ST\_RIGHT\_OPEN | person\_msg.state is ST\_WEIGHT\_SCALE | ST\_WEIGHT\_SCALE |
| ST\_RIGHT\_OPEN | person\_msg.state is ST\_RIGHT\_CLOSED | ST\_RIGHT\_CLOSED |
| ST\_LEFT\_CLOSED | person\_msg.state is ST\_GUARD\_LEFT\_LOCK | ST\_GUARD\_LEFT\_LOCK |
| ST\_RIGHT\_CLOSED | person\_msg.state is ST\_GUARD\_RIGHT\_LOCK | ST\_GUARD\_RIGHT\_LOCK |
| ST\_GUARD\_RIGHT\_LOCK | person\_msg.state is ST\_GUARD\_LEFT\_UNLOCK | ST\_GUARD\_LEFT\_UNLOCK |
| ST\_GUARD\_RIGHT\_UNLOCK | person\_msg.state is ST\_RIGHT\_OPEN | ST\_RIGHT\_OPEN |
| ST\_GUARD\_LEFT\_LOCK | person\_msg.state is ST\_GUARD\_RIGHT\_UNLOCK | ST\_GUARD\_RIGHT\_UNLOCK |
| ST\_GUARD\_LEFT\_UNLOCK | person\_msg.state is ST\_LEFT\_OPEN | ST\_LEFT\_OPEN |
| ST\_EXIT | ST\_EXIT entered | ST\_STOP |

Diagram

