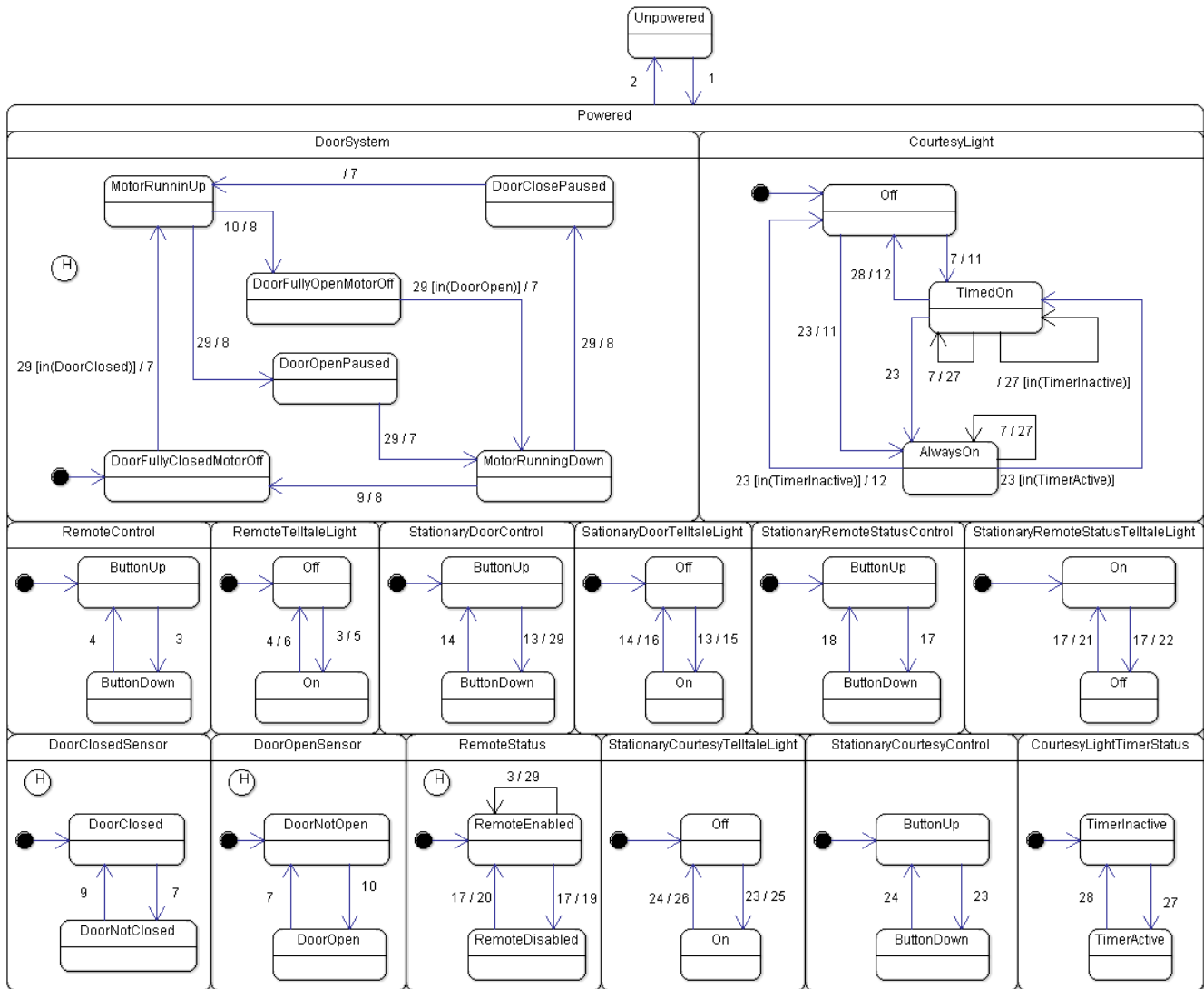**CS6130 Assignment 5**

Andrew Wagner GTID: 903058809

Asher Cornelius GTID: 903052457

Amit Kaushal GTID: 903060755

William Jordan GTID: 901981446

Kyle Grunwald GTID: 902328761

Unpowered

2   1

Powered

DoorSystem

MotorRunninUp   / 7   DoorClosePaused

10 / 8

H

DoorFullyOpenMotorOff   29 [in(DoorOpen)] / 7

29 / 8   29 / 8

29 [in(DoorClosed)] / 7   DoorOpenPaused

29 / 7

DoorFullyClosedMotorOff   MotorRunningDown

9 / 8

CourtesyLight

Off

7 / 11

28 / 12   TimedOn

23 / 11   23   7 / 27   / 27 [in(TimerInactive)]

7 / 27

AlwaysOn

23 [in(TimerInactive)] / 12   23 [in(TimerActive)]

RemoteControl

ButtonUp

4   3

ButtonDown

RemoteTelltaleLight

Off

4 / 6   3 / 5

On

StationaryDoorControl

ButtonUp

14   13 / 29

ButtonDown

SationaryDoorTelltaleLight

Off

14 / 16   13 / 15

On

StationaryRemoteStatusControl

ButtonUp

18   17

ButtonDown

StationaryRemoteStatusTelltaleLight

On

17 / 21   17 / 22

Off

DoorClosedSensor

H

DoorClosed

9   7

DoorNotClosed

DoorOpenSensor

H

DoorNotOpen

7   10

DoorOpen

RemoteStatus

3 / 29

H

RemoteEnabled

17 / 20   17 / 19

RemoteDisabled

StationaryCourtesyTelltaleLight

Off

24 / 26   23 / 25

On

StationaryCourtesyControl

ButtonUp

24   23

ButtonDown

CourtesyLightTimerStatus

TimerInactive

28   27

TimerActive

Events

1. System powered on
2. System powered off
3. Remote button pressed
4. Remote button released
5. Turn on remote telltale light
6. Turn off remote telltale light

7. Start motor
8. Stop motor
9. Door fully closed
10. Door fully open
11. Turn on courtesy light
12. Turn off courtesy light
13. Stationary door button pressed
14. Stationary door button released
15. Turn on stationary door telltale light
16. Turn off stationary door telltale light
17. Stationary disable remote button pressed
18. Stationary disable remote button released
19. Enable remote
20. Disable remote
21. Turn on stationary remote status telltale light
22. Turn off stationary remote status telltale light
23. Stationary courtesy button pressed
24. Stationary courtesy button released
25. Turn on stationary courtesy telltale light
26. Turn off stationary courtesy telltale light
27. Courtesy light timer started
28. Courtesy light timer expires
29. Activate door system

Assumptions

1. If the system is in the 'TimerInactive' state, and the courtesy light is activated into the 'AlwaysOn' state, running the garage door motor will activate the timer, but will not transition to the 'TimedOn' state.

Notes

1. All composite states are intended to be concurrent regions. ArguUML doesn't provide a clean way of arranging its built-in concurrent regions within a composite state, hence the lack of dotted lines.
2. The remote communicates to the garage door motor via the stationary control device. Therefore, the remote events are routed through the stationary device, and if the remote is enabled, the door activation event is dispatched.
3. The courtesy light concurrent region doesn't specifically call-out the oddness or evenness of the count of times the courtesy button has been pressed. The machine has been designed to function as required without the need for a counter.
4. In the event of a power outage, the system will retain state history for the door, remote status, and the two door sensors.