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1  /*
2  * Scola Tutorial
3  * by Antoine B. Rauzy
4  * Exercise: Dynamic Car assembly
5  * Variant using fail instructions to prevent to have two cars at the same place
6  */
7
8  domain BodyState {RAW, PAINTED} end
9  domain ComponentState {MISSING, INSTALLED} end
10
11 block AssemblyLine
12     integer carCount 0
13     block Station1 end
14     block Station2 end
15     block Station3 end
16 end
17
18 scenario CarAssembly as AssemblyLine
19     state Initial
20     next Initial CreateCar
21     task CreateCar
22         if (is_block car) then fail
23         set carCount (add carCount 1)
24         new block car
25         new integer car.number carCount
26         new BodyState car.body RAW
27     end
28     next CreateCar LaunchAssembly
29     fork LaunchAssembly
30         branch createCar
31         branch launch
32     end
33     next LaunchAssembly.createCar CreateCar
34     next LaunchAssembly.launch MoveCarToStation1
35     task MoveCarToStation1
36         if (is_block Station1.car) then fail
37         move car Station1.car
38     end
39     next MoveCarToStation1 Station1Lane.PaintBody
40     scenario Station1Lane as Station1
41         task PaintBody
42             set car.body PAINTED
43         end
44     end
45     next Station1Lane.PaintBody MoveCarToStation2
46     task MoveCarToStation2
47         if (is_block Station2.car) then fail
48         move Station1.car Station2.car
49     end
50     next MoveCarToStation2 Station2Lane.AssembleEngine
51     scenario Station2Lane as Station2
52         task AssembleEngine
53             new ComponentState car.engine INSTALLED
54         end
55     end
56     next Station2Lane.AssembleEngine MoveCarToStation3
57     task MoveCarToStation3
58         if (is_block Station3.car) then fail
59         move Station2.car Station3.car
60     end
61     next MoveCarToStation3 Station3Lane.StartAssembly
62     scenario Station3Lane as Station3
63         state StartAssembly
64         task AssembleFrontWheels
65             new ComponentState car.frontLeftWheel INSTALLED
66             new ComponentState car.frontRightWheel INSTALLED
67         end
68         task AssembleRearWheels
69             new ComponentState car.rearLeftWheel INSTALLED
70             new ComponentState car.rearRightWheel INSTALLED
71         end
72     state AssemblyCompleted

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73         next StartAssembly AssembleFrontWheels
74         next AssembleFrontWheels AssembleRearWheels
75         next AssembleFrontWheels AssembleRearWheels
76         next AssembleRearWheels AssemblyCompleted
77     end
78     next Station3Lane.AssembleCompleted DeliverCar
79     task DeliverCar
80         delete Station3.car
81     end
82     next DeliverCar Terminal
83     state Terminal
84 end
85
```