

Task5: Open the State Machine for the Gate D. Find the transition that is labelled as Tran5.

- 1) Please first Read the following description of the transition.
 - Event: No triggering event is required for this transition.
 - Guard: if the gate is blocked.
 - Action: No action is required for this transition.

☐ I have read the task's description carefully.

- 2) Please answer before starting the task:

[illegible]

- 3) Perform the task and develop the Guard and Action parts of the transition expression.

☐ I am done with developing the transition.

- 4) Please answer once you have finished the task:

[illegible]

Task6: Open the State Machine for the Gate C. Find the transition that is labelled as Tran6.

- 1) Please first Read the following description of the transition.
 - Event: Similar as T6Copy in GateA..
 - Guard: Similar as T6Copy in GateA.
 - Action: Similar as T6Copy in GateA.

☐ I have read the task's description carefully.

- 2) Please answer before starting the task:

[illegible]

- 3) Perform the task and develop the Guard and Action parts of the transition expression.

☐ I am done with developing the transition.

- 4) Please answer once you have finished the task:

[illegible]

2 POST-SESSION EXPERIENCE RATINGS FOR CONTEXT STUDY

Please answer to the following questions based on your actual experience using the tool in the study.

- 1) Compared to your initial expectation, To what extent did the tool was close to satisfy your expectation?

Below My Expectation ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 Above My Expectation

- 2) The Contextual User Interfaces capabilities meet my requirements.

Strongly Disagree ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 Strongly Agree

- 3) The Contextual User Interface is easy to use.

Strongly Disagree ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 Strongly Agree

- 4) During performing the tasks, to what extent did you experience the following challenges?

- Relying on memory (Remembering the contextual information relevant to performing the tasks).

Strongly Disagree ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 Strongly Agree

- Switching between artifacts (Searching for information) and changing the focus.

Strongly Disagree ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 Strongly Agree

- Maintaining the overview of the diagrams.

Strongly Disagree ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 Strongly Agree

- Too much scrolling and zooming.

How difficult the task was based on your actual experience of using the tool?		1	2	3	4	5	6	7	
	Very Easy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Very Difficult

- Knowing the relations between artifacts.

Strongly Disagree ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 Strongly Agree

- Arranging windows or Finding the right window.

Strongly Disagree ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 Strongly Agree

Thank you for your time and participation in the study.

3 PRE-SESSION EXPECTATION RATINGS FOR DEBUGGING STUDY

Please answer to the following questions based on your overall expectations of using modelling tools.

- 1) To what extent do you agree that inconsistencies should be prevented immediately rather than allowing them to exist and fix them at a later time?

Very Easy ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 Very Difficult

- 2) To what extent do you agree that maintaining inconsistencies at all time is counter-productive and intrusive (disrupting the focus tasks)?

Very Easy ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 Very Difficult

- 5) During the task, did you get any warning or error message from the tool indicating that the model is erroneous or problematic?

☐Yes ☐No

If Yes, please answer the following questions:

Area			1	2	3	4	5	6	7	
Effectiveness	Where you able to fix it?	Strongly Disagree	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Strongly Agree
Helpfulness	Overall, the error message(s) and warnings helped me to solve the problem.	Strongly Disagree	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Strongly Agree
Recovery	Overall, the tool provided me with error recovery techniques (or steps) that made it easier to fix the problem.	Strongly Disagree	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Strongly Agree

Task3: Find class Gate and rename the position attribute to pos. Fix the inconsistencies, if any, that this task may introduce to the model.

- ☐ I have read the task's description carefully.
- Please answer before starting the task:

How difficult do you expect the task to be using the tool?		1	2	3	4	5	6	7	
	Very Easy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Very Difficult

- Perform the task.
 - ☐ I am done with developing the transition.
- Please answer once you have finished the task:

How difficult the task was based on your actual experience of using the tool?		1	2	3	4	5	6	7	
	Very Easy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Very Difficult

- 5) During the task, did you get any warning or error message from the tool indicating that the model is erroneous or problematic?

☐Yes ☐No

If Yes, please answer the following questions:

Area			1	2	3	4	5	6	7	
Effectiveness	Where you able to fix it?	Strongly Disagree	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Strongly Agree
Helpfulness	Overall, the error message(s) and warnings helped me to solve the problem.	Strongly Disagree	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Strongly Agree
Recovery	Overall, the tool provided me with error recovery techniques (or steps) that made it easier to fix the problem.	Strongly Disagree	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Strongly Agree

Task4: The Parking class has an operation named as enteringParkingLot. You, as a modeller find that the enteringParkingLot is a redundant operation and should be

removed from the Parking class. Remove it and also fix all the transitions that are referring to the enteringParkingLot as explained below:

- Event: If enteringParkingLot is used in the event, change the event to goingThroughTheGate.
- Guard: If enteringParkingLot is used in the guard, delete the guard. Consequently, if the containing transition will have no event, guard, or action after deleting the guard, then delete the whole transition.
- Action: If enteringParkingLot is used in the action/effect, delete the action. Consequently, if the containing transition will have no event, guard, or action after deleting the action, then delete the whole transition.

- 1) ☐ I have read the task's description carefully.
- 2) Please answer before starting the task:

How difficult do you expect the task to be using the tool?		1	2	3	4	5	6	7	
	Very Easy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Very Difficult

- 3) Perform the task.
☐ I am done with developing the transition.
- 4) Please answer once you have finished the task:

How difficult the task was based on your actual experience of using the tool?		1	2	3	4	5	6	7	
	Very Easy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Very Difficult

- 5) During the task, did you get any warning or error message from the tool indicating that the model is erroneous or problematic?
☐Yes ☐No

If Yes, please answer the following questions:

Area			1	2	3	4	5	6	7	
Effectiveness	Where you able to fix it?	Strongly Disagree	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Strongly Agree
Helpfulness	Overall, the error message(s) and warnings helped me to solve the problem.	Strongly Disagree	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Strongly Agree
Recovery	Overall, the tool provided me with error recovery techniques (or steps) that made it easier to fix the problem.	Strongly Disagree	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Strongly Agree

Task5: The Sensor class has the Blockage attribute with the type of int. Change the Blockage attributes type from int to bool and find any inconsistencies it may occur.

- 1) ☐ I have read the task's description carefully.
- 2) Please answer before starting the task:

How difficult do you expect the task to be using the tool?		1	2	3	4	5	6	7	
	Very Easy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Very Difficult

- 3) Perform the task.

☐ I am done with developing the transition.

4) Please answer once you have finished the task:

How difficult the task was based on your actual experience of using the tool?		1	2	3	4	5	6	7	
	Very Easy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Very Difficult

5) During the task, did you get any warning or error message from the tool indicating that the model is erroneous or problematic?

☐Yes ☐No

If Yes, please answer the following questions:

Area			1	2	3	4	5	6	7	
Effectiveness	Where you able to fix it?	Strongly Disagree	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Strongly Agree
Helpfulness	Overall, the error message(s) and warnings helped me to solve the problem.	Strongly Disagree	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Strongly Agree
Recovery	Overall, the tool provided me with error recovery techniques (or steps) that made it easier to fix the problem.	Strongly Disagree	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Strongly Agree

Task6: The Sensor class has the car_at_gate attribute with the type of bool. Change the car_at_gate attributes type from bool to int and find any inconsistencies it may occur.

1) ☐ I have read the task's description carefully.

2) Please answer before starting the task:

How difficult do you expect the task to be using the tool?		1	2	3	4	5	6	7	
	Very Easy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Very Difficult

3) Perform the task.

☐ I am done with developing the transition.

4) Please answer once you have finished the task:

How difficult the task was based on your actual experience of using the tool?		1	2	3	4	5	6	7	
	Very Easy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Very Difficult

5) During the task, did you get any warning or error message from the tool indicating that the model is erroneous or problematic?

☐Yes ☐No

If Yes, please answer the following questions:

Area			1	2	3	4	5	6	7	
Effectiveness	Where you able to fix it?	Strongly Disagree	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Strongly Agree
Helpfulness	Overall, the error message(s) and warnings helped me to solve the problem.	Strongly Disagree	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Strongly Agree
Recovery	Overall, the tool provided me with error recovery techniques (or steps) that made it easier to fix the problem.	Strongly Disagree	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Strongly Agree

Task7: The Lot class is a superclass of undergroundLot class. The Lot class has an operation named as checkIfRestStartTime and undergroundLot class has an operation named as isRestStartTime. You, as a modeler find that the two operations in the two classes are equivalent and only one of them should be used. Thus, you decide to remove isRestStartTime in the subclass undergroundLot. Remove it and also fix the inconsistencies, if any, that this task may introduce to the model.

- 1) ☐ I have read the task's description carefully.
- 2) Please answer before starting the task:

How difficult do you expect the task to be using the tool?		1	2	3	4	5	6	7	
	Very Easy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Very Difficult

- 3) Perform the task.
 - ☐ I am done with developing the transition.
- 4) Please answer once you have finished the task:

How difficult the task was based on your actual experience of using the tool?		1	2	3	4	5	6	7	
	Very Easy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Very Difficult

- 5) During the task, did you get any warning or error message from the tool indicating that the model is erroneous or problematic?
 - ☐Yes ☐No

If Yes, please answer the following questions:

Area			1	2	3	4	5	6	7	
Effectiveness	Where you able to fix it?	Strongly Disagree	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Strongly Agree
Helpfulness	Overall, the error message(s) and warnings helped me to solve the problem.	Strongly Disagree	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Strongly Agree
Recovery	Overall, the tool provided me with error recovery techniques (or steps) that made it easier to fix the problem.	Strongly Disagree	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Strongly Agree

Task8: Delete the isGateBlocked operation from the Sensor class. Find the referent elements of this element. If the referent is a Guard element, then change it to check if the blockage attribute is true. If the referent element is an Event or an Action, then delete the the Event or the Action.

5 POST-SESSION EXPERIENCE RATINGS FOR DEBUGGING STUDY

Please answer to the following questions based on your actual experience using the tool in the study.

- 1) Compared to your initial expectation, To what extent did the tool was close to satisfy your expectation?

Below My Expectation ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 Above My Expectation

- 2) The Interactive Consistency Management Interfaces capabilities meet my requirements.

Strongly Disagree ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 Strongly Agree

- 3) The Interactive Consistency Management Interface is easy to use.

Strongly Disagree ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 Strongly Agree

- 4) How confident you are with your level of success in fulfilling the tasks (do you think you might have left some uncaught errors in the model)?

Strongly Unconfident ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 Strongly Confident

- 5) Based on your experience, to what extent do you feel being disrupted by the tool?

Strongly Disagree ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 Strongly Agree

- 6) Based on your experience, to what extent do you agree that being disrupted was worth of delivering more correct models and being more confident in the solution?

Strongly Disagree ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 Strongly Agree

Thank you for your time and participation in the study.

