

Model-based System Engineering

Mini-Project 1

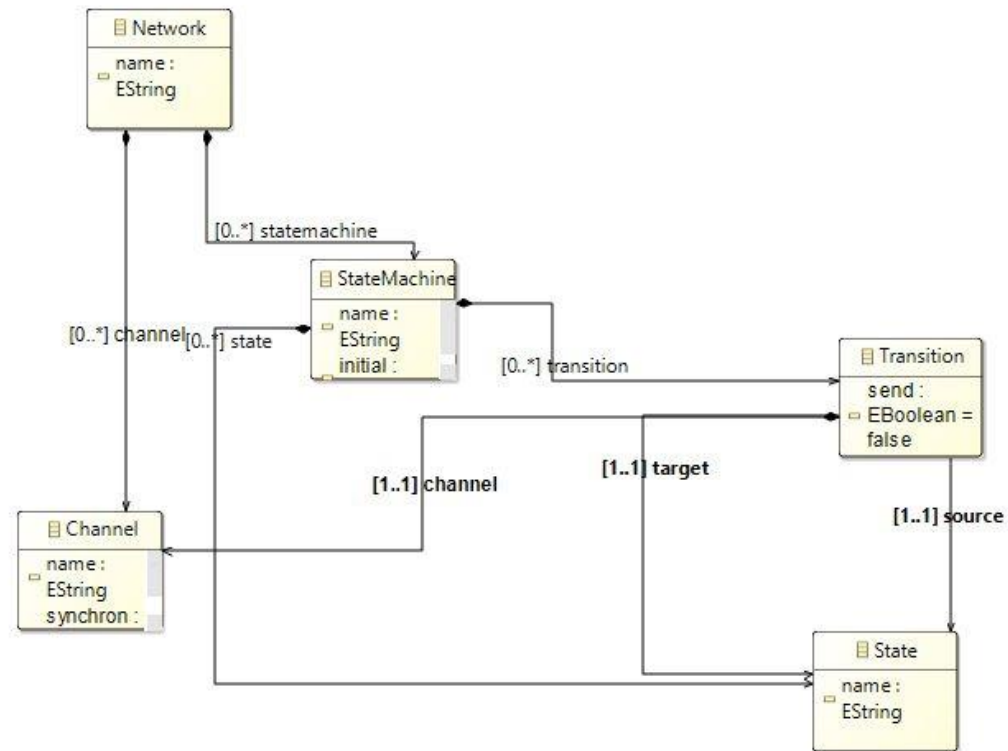
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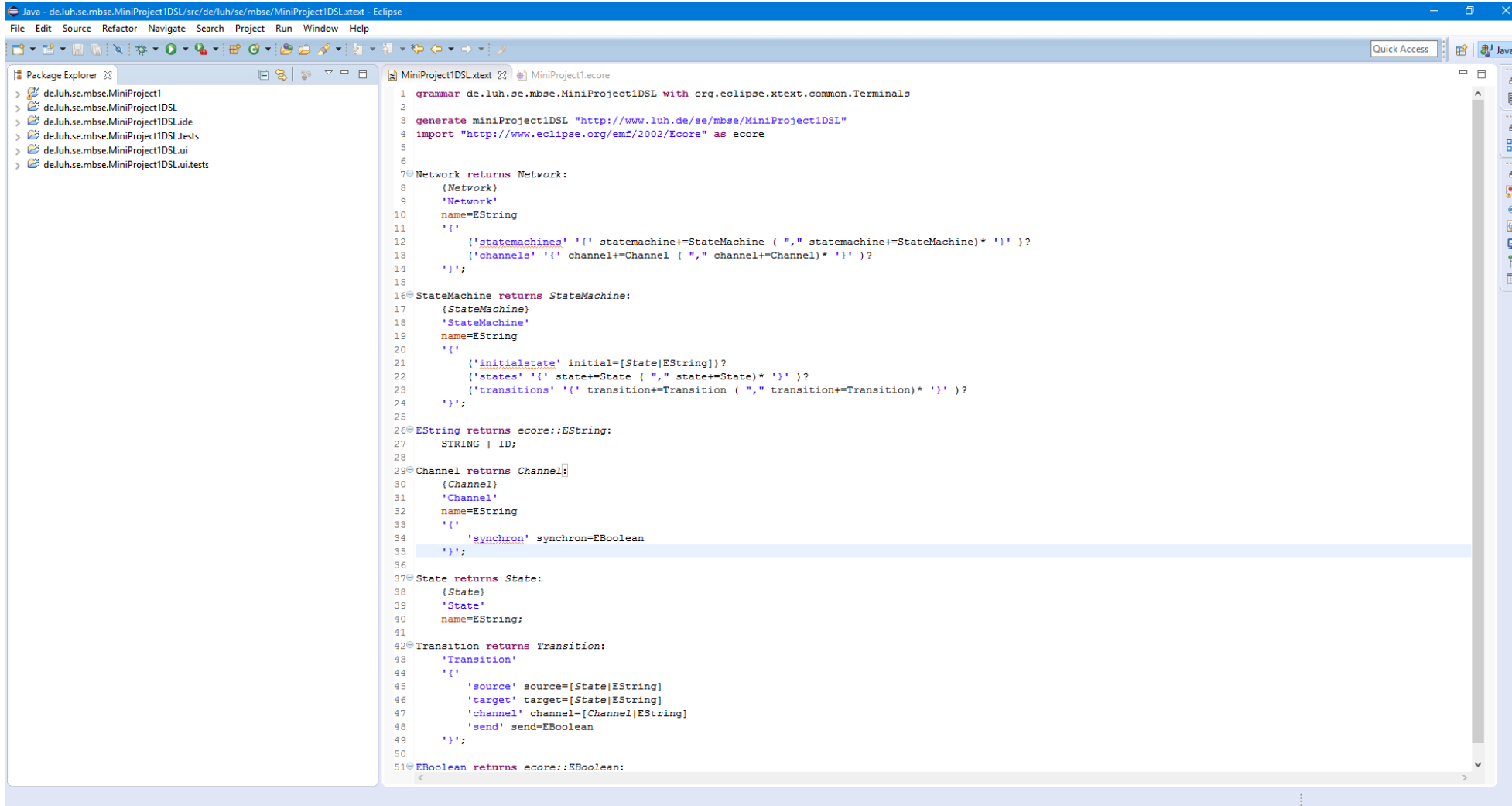
Tasks

- Create metamodel for network of statemachines
 - > using Ecore Tools
- Create textual editor
 - > using Xtext
- Create graphical editor
 - > using Sirius
- Create example models (Cafe, Pedestrian and one more)

Ecore - Model



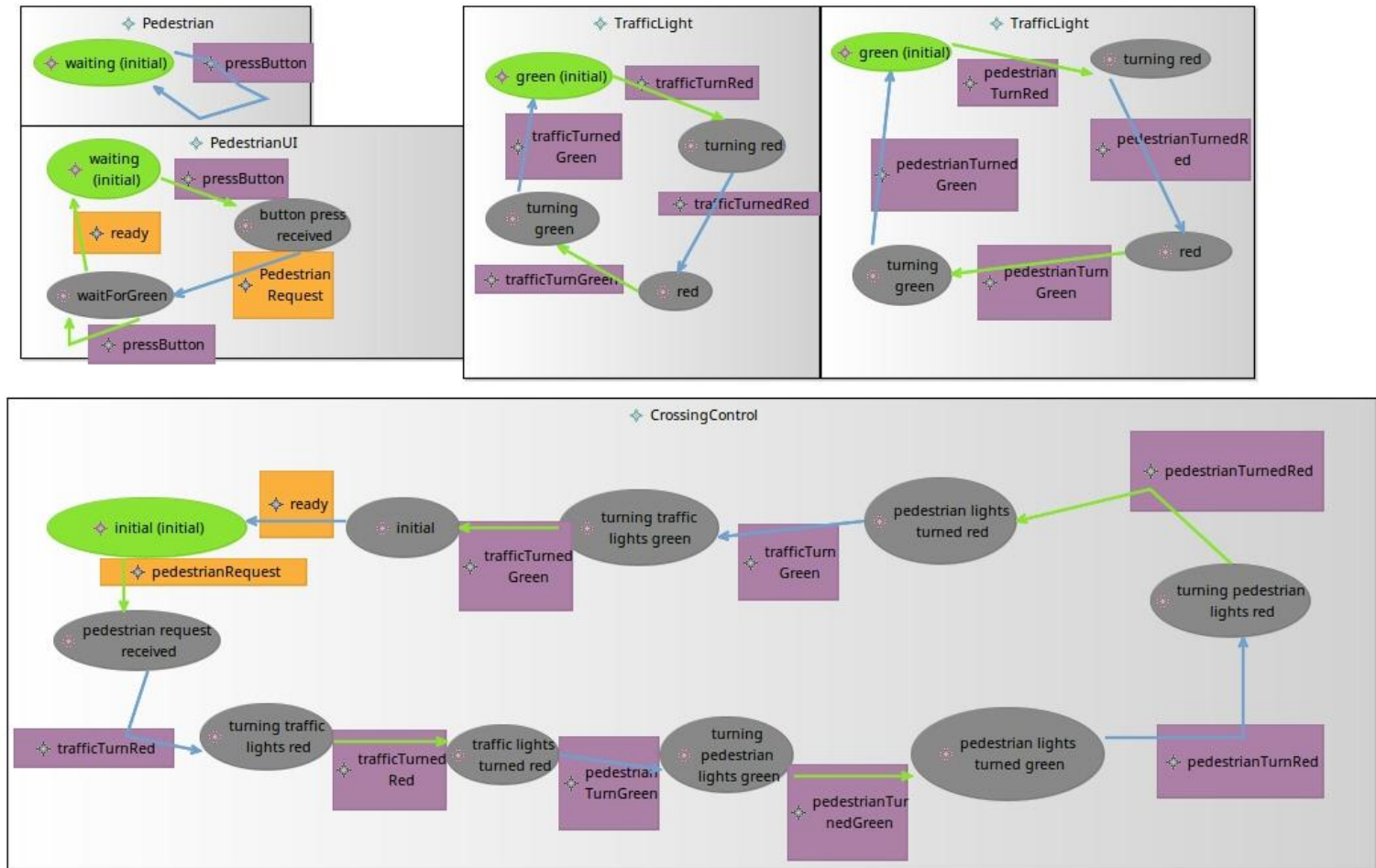
Xtext - Model



```
1 grammar de.luh.se.mbse.Miniproject1DSL with org.eclipse.xtext.common.Terminals
2
3 generate miniproject1DSL "http://www.luh.de/se/mbse/MiniProject1DSL"
4 import "http://www.eclipse.org/emf/2002/Ecore" as ecore
5
6
7 @Network returns Network:
8 {Network}
9 'Network'
10 name=EString
11 '{'
12     ('statemachines' '{' statemachine+=StateMachine ( "," statemachine+=StateMachine)* '}' )?
13     ('channels' '{' channel+=Channel ( "," channel+=Channel)* '}' )?
14 '}'
15
16 @StateMachine returns StateMachine:
17 {StateMachine}
18 'StateMachine'
19 name=EString
20 '{'
21     ('initialstate' initial=[State|EString])?
22     ('states' '{' state+=State ( "," state+=State)* '}' )?
23     ('transitions' '{' transition+=Transition ( "," transition+=Transition)* '}' )?
24 '}'
25
26 @EString returns ecore::EString:
27 STRING | ID;
28
29 @Channel returns Channel:
30 {Channel}
31 'Channel'
32 name=EString
33 '{'
34     'synchron' synchron=EBoolean
35 '}'
36
37 @State returns State:
38 {State}
39 'State'
40 name=EString;
41
42 @Transition returns Transition:
43 'Transition'
44 '{'
45     'source' source=[State|EString]
46     'target' target=[State|EString]
47     'channel' channel=[Channel|EString]
48     'send' send=EBoolean
49 '}'
50
51 @EBoolean returns ecore::EBoolean:
```

Sirius - Model

- On the right side you can choose components
- Constraints of the statemachine network are taken into consideration
- If a name has (initial) in its name, it will be highlighted
- synchronous/asynchronous have different colours



Example Model - Screenshot

- Model of a Candy Machine

