

Appendix

A. UML Notation Overview

UML (Unified Modeling Language) is a graphical language for modeling object-oriented systems [146]. In this thesis, we use the following UML diagrams: the use case, the class, the state transition and the activity diagram. Our notations will be demonstrated in the following for the respective diagram forms.

Use Case Diagram

The notation used for the use case diagram is displayed in Figure A.1. The main elements are *use cases* (shown as ovals) and their participating *actors*. Use cases can be grouped. Here we grouped them according to transaction phases.

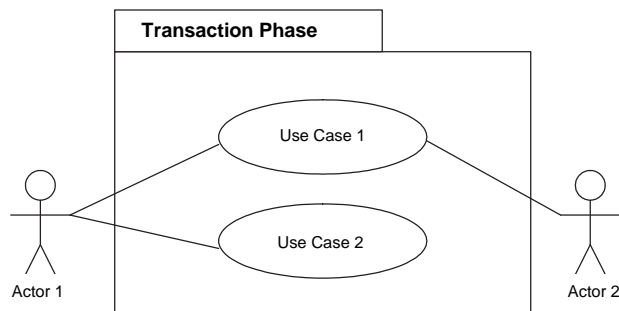


Figure A.1.: Notation used for Use Case Diagrams

Class Diagram

Figure A.2 demonstrates the notation of the class diagram. The main elements are classes and their relationships. There is a relationship between *Superclass* and *Class 1* further detailed with a multiplicity and a name. A small black arrow indicates the reading direction for the relationship name. The graphical representation of composite relationships and inheritance between classes is also demonstrated. The inheritance can be further specified with a discriminator (e.g disjoint, non-exclusive).

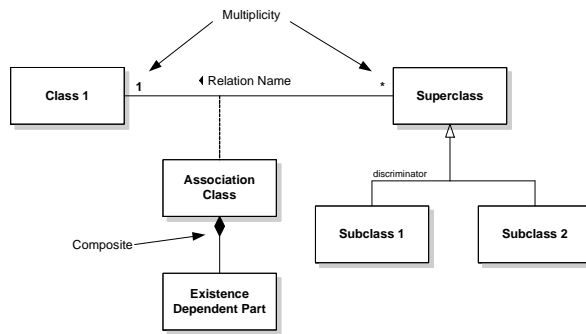


Figure A.2.: Notation used for Class Diagrams

State Transition Diagram

Figure A.3 shows the notation of the state transition diagram. The main elements are states and transitions between states triggered by actions, events, or conditions.

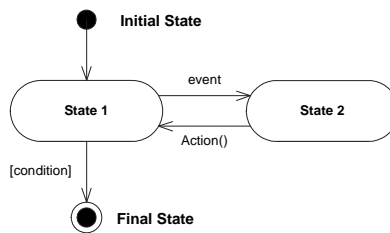


Figure A.3.: Notation used for State Transition Diagrams

Activity Diagram

The notation used for the activity diagrams is shown in Figure A.4. The flow of control is represented by arrows between the activities. The activities that are related to a specific user are placed inside the so-called swimlane of this user. A special graphical element is used here for the continuation of activity flows across multiple diagrams. Other graphical elements (below) are used for the synchronization of parallel activities, for modeling decisions and for the explicit start and end of an activity flow (if not continued from another chart).

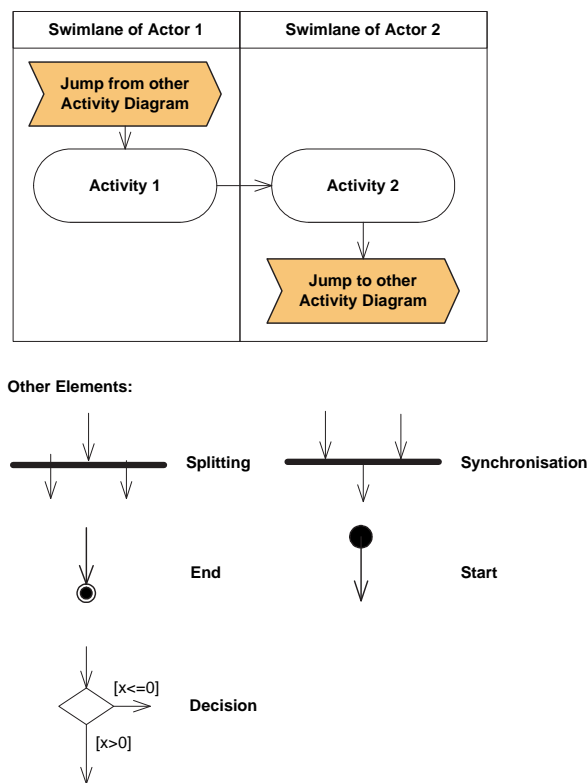


Figure A.4.: Notation used for Activity Diagrams