Aufgabe 5

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Chapter 1

Task 1

(a) Use cases describe interactions between users and a system using a graphical model and a structured text. A use case indentifies the actors involved in an interaction and names the type of interaction. Additional information can be added in order to describe the interaction with the system. Those additional information can be a textual description or one or more models such as the UML sequence diagram or the state charts.

(b) 1. We identified these criteria for the product view:

   - Hold Functional Requirements in an easy to read, easy to track text format.
   - Represents the goal of an interaction between an actor and the system. The goal represents a meaningful and measurable objective for the actor.
   - Records a set of paths (scenarios) that traverse an actor from a trigger event (start of the use case) to the goal (success scenarios).
   - Records a set of scenarios that traverse an actor from a trigger event toward a goal but fall short of the goal (failure scenarios).
   - Are multi-level: one use case can use/extent the functionality of another. [2]

2. We identified these criteria for the process view:

   - The sentence shows the intent of the actor, not their particular movements in accomplishing that intent (semantics, not dialog).[2]
   - All the action depicted by the use cases should have neutrality inside their representation.
   - The sentence shows the process moving distinctly forward. [1]
   - Since we're not gonna describe the interface with which the actors interact(e.g. the GUI of a software) but instead the control of action that is exchanged from one actor to another(e.g. data passes from actor B to actor A or vice versa).[3]

- Mentioning the timing is optional.

(c) The difference between a use case and a scenario is that a scenario is a concrete realisation of a use case, so there are no variations only one flow of events and concrete Data etc. A scenario represents one particular example situation with these values etc. where as a use case describes a class/type of a situation.

Chapter 2

Task 2

(a) A usecase diagram is an Summary/ overview of general Information regarding the Users and their interactions with a System and how the different use cases affect each other in contrast to a usecase which provides more specific and complete information about a particular interaction of a specific user with the system.[4]
Advantages of usecase diagrams in uml are:

- they provide a useful overview of the context and requirements of a system
- they are easy to understand

Disadvantages of use case diagrams are:

- They are not very detailed / don't contain allot of information
- They are Generalized so they might exclude important information like Failure cases

(b) The actor model element in a use case diagram represents a user which interacts with the system, it can be a person organization, or external system.

(c) A use case diagram contains usecases ovals which represent the different usecases for a user, Associations lines between usecases and actors with denote which actors are associated with a use case and System boundaries which define the scope of the system e.g where the system starts and ends.

(d) Use cases can have following types of relations to each other in a usecase-diagram:<<includes>> and <<extends>>. includes indicates that the behavior of a usecase is present in another usecase where as extends indicates that additional behavior of another use case should be added to a usecase possibly conditionally.

Chapter 3

Task 3

Table 3.1: Table1

| Use Case	Webshop
Description	A company wants to use the Database in a webshop to check if they can sell a product to a customer
Actors	Customer company-employee/website
Assumptions	The product data is stored in the database, the data in the database is accurate
Steps	• Webserver recieves purchase request • Webserver sends query to database • IF stock of the requested product is greater than 1 – THEN webserver continues purchasing process • ELSE webserver rejects request
Variation	The webserver could check if the user has already bought x of the product and reject their offer according to a x per person policy
Non-Functional	The database must be able to handle multiple queries at once in order to process multiple orders at once
Issues	

(a)
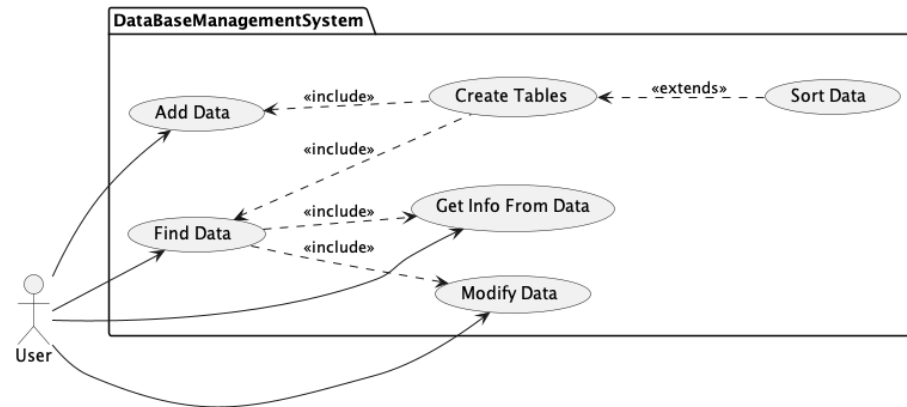
Figure 3.1: UMl-UseCase

(b)

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