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Aufgabe 5-1:

a) **Use Case** handelt sich um einen methodischen Ansatz für die Anforderungsermittlung. Und es ist eine allgemeine Beschreibung des Verhaltens des Systems, die für jede verständlich ist.
Ein Use Case bündelt die Beschreibungen für viele einzelne Fälle (Szenarien), die den Zielen nach eng zusammen gehören.

Use Case is a list of actions or event steps typically defining the interactions between a role and a system to achieve a goal.

Use Case **dient zur** Vereinbarung zwischen den Beteiligten eines Projekts über das Verhalten des Systems.
(Quelle: https://en.wikipedia.org/wiki/Use_case)

b)

- **Produktsicht:**
  1. Use cases should contain formal requirements with context and structure that clearly define the resultant value.
  2. Beschreibe Dinge einfach – mit Geschichten („stories“)
  3. Verstehe das „Big Picture“
  4. Stelle den Nutzen in den Mittelpunkt
  5. Baue das System scheibchenweise („in slices“)
  6. Liefere das System in Inkrementen
  7. A use case describes functionality but it also must describe a result.

- **Prozesssicht:**
  1. Weniger ist mehr, denn zu viele Details führen dazu, dass es nicht gelesen wird.
  2. Sollte man schrittweise Genauigkeit erhöhen, lieber einen Schritt in einem eigenen Use Case darzustellen als einen Fall zu überladen.
  3. Teilprozesse gruppieren.
  4. Make each step show an action - each step in the use case should show some progress towards the eventual goal.
  5. Avoid if statements - write validation steps in the affirmative. Use verbs like validate and verify.

(Quelle: ftp.software.ibm.com › whitepapers › RAW14023-USEN-00,
https://de.wikipedia.org/wiki/Anwendungsfall#Allgemeines, https://casecomplete.com/lessons/writing-use-cases)

c) A use case is an abstraction that describes all possible scenarios involving the described functionality. A scenario is an instance of a use case describing a concrete set of actions. Use cases are used to describe all possible cases; their focus is on completeness.
(Quelle: https://www.quora.com/What-is-the-difference-between-use-cases-and-scenarios)

Aufgabe 5-2:

1. **A use case diagram** at its simplest is a representation of a user's interaction with the system that shows the relationship between the user and the different **use cases** in which the user is involved.
   (Quelle: https://en.wikipedia.org/wiki/Use_case_diagram)

   Vorteile:
   1. “Blue print” - Zeigt das “Big picture” und wie alle Ziele des Systems zusammenhängen.
   2. Bietet den Überblick über das System.

   Nachteile:
   1. Bei größeren Systemen kann leicht überladen werden, was das ganze fast nutzlos macht
   2. Die einzelnen Ziele der Use Cases werden nicht im Diagramm dargestellt und die Situation ist ohne Use Case Beschreibung unvollständig erklärt.
   3. Zeitaufwändig zu generieren.
   4. Eingeschränkte Unterstützung von Software-Tools.

   (Qulle: https://uxapprentice.wordpress.com/2011/11/29/disadvantages-of-use-cases-and-scenarios/).

2. **Actor** specifies a role played by a user or any other system that interacts with the subject. An Actor models a type of role played by an entity that interacts with the subject (e.g., by exchanging signals and data), but which is external to the subject.
   (**Quelle**: https://www.visual-paradigm.com/guide/uml-unified-modeling-language/how-to-identify-actors/)

3.
   - The **boundary**, which defines the system of interest in relation to the world around it.
   - The **relationships** between and among the actors and the use cases.
   - **Goals**: The end result of most use cases. A successful diagram should describe the activities and variants used to reach the goal.

   (Qulle: https://whatis.techtarget.com/definition/use-case-diagram;
   https://www.lucidchart.com/pages/uml-use-case-diagram).

4.
   - **Include:** when a use case is depicted as using the functionality of another use case in a diagram, this relationship between the use cases is named as an include relationship.
   - **Extend:** in an “extend” relationship between two use cases, the child use case adds to the existing functionality and characteristics of the parent use case.
   - **Generalizations:** a generalization relationship is also a parent-child relationship between use cases.

   (Qulle: https://www.e-education.psu.edu/geog468/l8_p4.html)

Aufgabe 5-3:

a)

Requirement: System of criticism and improvement suggestions (Feedback System)
Use case: bug_report
Description: User reports some bug through feedback form. Developer obtains it and if needed stays in contact with the user. Bug should be fixed if possible (does not belong to this use case)
Actor: Users
Developers
Assumptions: All bug reports are understandable and reproducible by developers, all users are ready to help if needed.
Steps:

1. **User** and clicks the section “Bug report”. Describes bug reproducing way, if possible with screenshots
2. REPEAT
   2-1. Developer reads the bug report and tries to understand and reproduce it.
   2-2. Developer communicates with the user if needed.
   2-3. User sends another report.
   UNTIL problem is easily callable and can be fixed
3. Bug goes to “repair” use case
4. After fixing the user can be contacted to evaluate the solution.
5. An introduction for a new feature (if big enough) should be posted (another use case)

Variations: **User** reports some bug or suggestion. Reports from **testers** do not belong to this use case

Non-Functional:

1. **Users should be contacted within 2 days if needed.**
2. **Bug should go to the “repair” use case within 7 days since report.**

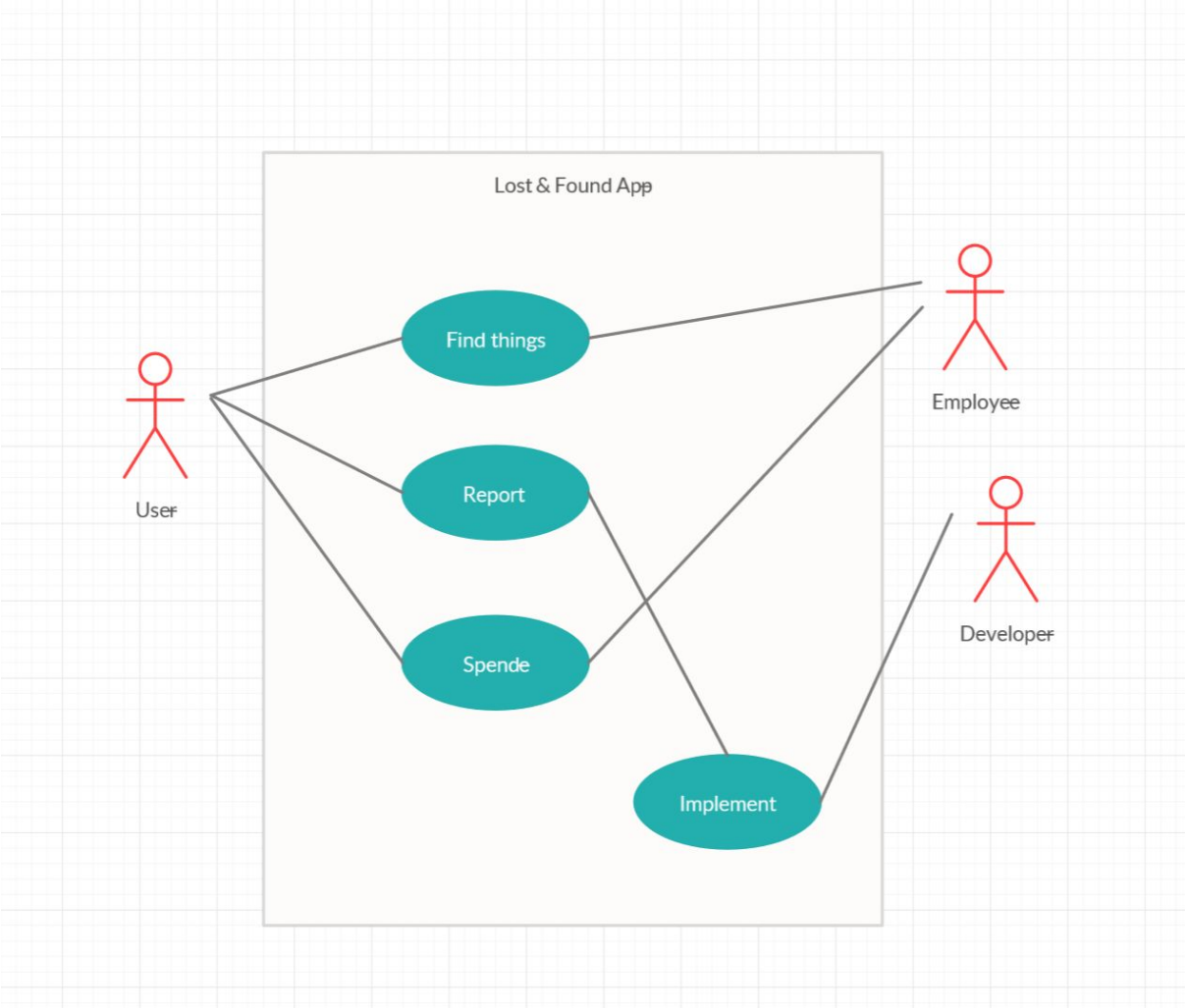
Issues:

1. **Not friendly or not ready/able to help users.**
2. **Fixing of some bugs can possibly change the structure of the app.**
3. **Bugs that can or should not be fixed at the moment.**
4. **Not understanding the problem**

Extension:

Use Case Extension: follow_my_report **extends** bug_report
Description: Allows user to see the status of his report
Steps: #1 IN PARALLEL WITH 2-5: if there is a change of the report, **then** that will be shown to the user when he goes to the appropriate section, where he can always track the status of his report (understanding, fixing, fixed, ...)

b)


Lost & Found App
Find things
Report
Spende
Implement
User
Employee
Developer