Assignment 1

Test Design Technique

The test design technique is the most general approach at generating test cases in a structured manner. You will be tasked to apply this technique multiple times in the subsequent assignments and exam, both on a very high and very low level of abstraction. *Explain the application of the test design technique.*

Deliverables The submission to this exercise must contain all of the following:

1. A list of all steps of the test design technique together with an explanation, how they are performed
2. A brief explanation of how the test design technique helps creating test cases in a structured manner

Boundary Value Analysis and Equivalence Partitioning

Boundary value analysis (BVA) and equivalence partitioning (EP) are two additional tools that help designing relevant test cases. *Explain, how they work, and argue for their usability.*

Then, imagine a method that checks the validity of an age: values below 0 and above 120 shall be identified as *impossible* by the method, values below 18 as *underage* and values from 18 on as *valid*. *Elicit both the boundary values and equivalence partitions for this scenario.*

Deliverables The submission to this exercise must contain all of the following:

1. An explanation of boundary value analysis and an argument for its use.
2. An explanation of equivalence partitioning and an argument for its use.
3. An application of the BVA and EP to the given scenario.

Designing Test Cases

Consider the following scenario: To open the door at the entrance of a company building from the outside, one must either hold a valid company card to a sensor for at least two seconds or have the door automatically unlocked by the porter. The door can always be opened from the inside. *Design relevant test cases for this scenario using the test design technique.*

Deliverables The submission to this exercise must contain all of the following:

1. An identification of the conditions and actions within the scenario
2. All valid combinations of the former
3. The expected outcome for each combination