Week 4 Homework Problems

**Exercise 7.1:**

Graphical user interface, website

Description automatically generated  
  
  
**Exercise 8.2:**

Testing can only detect the presence of errors because it assumes that the system being tested has faults. The objective of testing is to uncover these faults, if any, by executing the system and comparing the actual results with the expected results. If the results match, it means that the system is functioning correctly and no errors are present, but it does not guarantee that the system is completely error-free.

In other words, testing can only prove the presence of errors, not their absence. There might be many errors that are not detected by testing because of the limited scope of testing, the lack of appropriate test cases, or the complexity of the system. Therefore, it is possible that the system still contains undetected errors even after thorough testing, and it is not possible to definitively prove that a system is error-free.

Therefore, testing can only provide confidence in the quality of a system, but it cannot guarantee that the system is error-free. The absence of detected errors should not be interpreted as the absence of all errors.

**Exercise 8.4:**

**Testing Partitions:**

1. Input with only one blank character: To test the handling of a single blank character as input.
2. Input with multiple blank characters: To test the handling of multiple blank characters as input.
3. Input with a mix of blank characters and non-blank characters: To test the handling of a mix of blank characters and non-blank characters as input.
4. Input with no blank characters: To test the handling of input with no blank characters.

**Test Cases:**

1. Input with only one blank character:

Test case 1: Pass a single blank character as input to the catWhiteSpace method and verify that the output is a single blank character.

1. Input with multiple blank characters:

Test case 2: Pass a sequence of multiple blank characters as input to the catWhiteSpace method and verify that the output is a single blank character.

1. Input with a mix of blank characters and non-blank characters:

Test case 3: Pass a mix of blank characters and non-blank characters as input to the catWhiteSpace method and verify that the output has a single blank character separating the non-blank characters.

1. Input with no blank characters:

Test case 4: Pass a string with no blank characters as input to the catWhiteSpace method and verify that the output is the same as the input.