Test Plan for SSN Validation and Dead Ants Kata Project

Objective

The objective of this test plan is to verify the functionality and accuracy of the SSN validation algorithm and the dead ants counting function.

Tools and Environment

- **Programming Language:** Python
- **Testing Framework:** pytest
- **Environment:** Local development environment with Python installed

Test Scenarios

SSN Validation

1. **Positive Scenarios:**
    - **Scenario 1:** Validate a typical valid SSN
        - **Input:** `123-45-6789`
        - **Expected Output:** Valid SSN
    - **Scenario 2:** Validate a valid SSN with edge cases
        - **Input:** `456-78-9012`
        - **Expected Output:** Valid SSN
2. **Negative Scenarios:**
    - **Scenario 3:** Validate an SSN with all zeros
        - **Input:** `000-00-0000`
        - **Expected Output:** Invalid SSN
    - **Scenario 4:** Validate an SSN with incorrect format
        - **Input:** `1234-567-8901`
        - **Expected Output:** Invalid SSN

Dead Ants Kata

1. **Positive Scenarios:**
    - **Scenario 1:** Count dead ants in a trail with clear ant markings
        - **Input:** `...ant...ant..nat.ant.t..ant...ant..ant..ant.anant..t`
        - **Expected Output:** 1 dead ant
    - **Scenario 2:** Count dead ants in multiple trails
        - **Input:** `ant...ant...ant....ant`
        - **Expected Output:** 0 dead ants
2. **Negative Scenarios:**
    - **Scenario 3:** No dead ants in the ant trail
        - **Input:** `ant.ant.ant`
        - **Expected Output:** 0 dead ants

- **Scenario 4:** Invalid ant trail format
    - **Input:** `ant..ant...ant`
    - **Expected Output:** Error or 0 dead ants

Test Execution

1. **Test Preparation:**
    - Ensure the test environment is set up with necessary dependencies installed.
    - Confirm the correct functioning of test scripts (`ssn_validation.py` and `dead_ants_kata.py`).
2. **Execution:**
    - Run the pytest test suite to execute all test cases defined in the test scenarios.
3. **Results:**
    - Record the results of each test case, noting any failures or deviations from expected behavior.

Conclusion

Verify that all test cases pass successfully. Address any failures or discrepancies found during testing and re-run tests as necessary until all scenarios are validated correctly.