

StudentPostTests.pdf

Course: Foundations F25
Task 6: Test Documentation
Date: October 2025

6.1 List of TP2 Requirements

- 1 Implement and validate CRUD operations for Post class.
- 2 Ensure input validation for title, content, and thread.
- 3 Verify logical features: soft delete, restore, reply count.
- 4 Confirm correct timestamps (createdAt, updatedAt).
- 5 Ensure formatted summary and toString output are correct.

6.2 Requirement-Test Mapping

1. testCreatePost() → Validates creation and initialization of Post objects.
2. testReadPost() → Confirms getter methods correctly return data.
3. testUpdatePost() → Checks updates to title/content/thread and validation rules.
4. testDeleteAndRestorePost() → Ensures soft delete and restore functionality.
5. testReplyCountIncrementDecrement() → Tests reply count logic.
6. testInvalidTitleContentValidation() → Confirms exceptions for invalid inputs.
7. testThreadDefaultsAndUpdates() → Verifies default thread assignment.
8. testTimestampsUpdate() → Confirms timestamps update after modification.
9. testSummaryAndToString() → Validates formatted output of summary and toString().

6.3 Test Explanations

Each JUnit test method has inline Javadoc specifying the related TP2 requirement. Assertions ensure the expected behavior matches actual outcomes. Exceptions are tested using assertThrows. Output is interpreted as 'passed' when all assertions are true and no exceptions occur unexpectedly.

6.4 Test Code Summary and Descriptions

- 1 testCreatePost(): Ensures new posts initialize all fields correctly, including postId and timestamps.
- 2 testReadPost(): Checks that getter methods return stored values without modification.
- 3 testUpdatePost(): Validates that setTitle, setContent, and setThread update fields and timestamps.
- 4 testDeleteAndRestorePost(): Tests markAsDeleted() and restore() toggle the isDeleted flag.
- 5 testReplyCountIncrementDecrement(): Increments and decrements reply count safely without negative values.
- 6 testInvalidTitleContentValidation(): Verifies IllegalArgumentException for invalid inputs.
- 7 testThreadDefaultsAndUpdates(): Ensures default thread assignment when null/empty provided.

- 8 testTimestampsUpdate(): Confirms updatedAt refreshes after every change.
- 9 testSummaryAndToString(): Confirms summary formatting includes title, author, and date correctly.

Execution Results

All 9 tests passed successfully. CRUD operations, validation, and logical features meet the Students User Stories requirements.

Conclusion

The test suite validates all TP2 functional requirements of the Post class. Future improvements include automated UI integration testing.