# SFT221 SCRUM Report and Reflections

This report should be completed in the class and submitted at the end of class. Late submissions cannot be accepted without prior approval of the instructor.

**GROUP**: \_\_\_\_\_\_\_\_\_\_\_\_4\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Members Present**:

|  |  |
| --- | --- |
| 1. Irish Banga | 4. Gulpreet Kaur |
| 2. In Tae Chung | 5. |
| 3. Anna Francesca Dela Cruz (Cesca) | 6. |

## Milestone 5 Tasks

In this milestone, you should write, implement, and execute integration tests. Integration tests test how multiple functions work together to complete a task. Depending on what is being tested, you might be able to write unit tests to do the testing and automatically compare the results. In other cases, you might need to manually check the output to check it. This will all be stated in the tests where it discusses how they should be run.

As you update the function-test matrix, you will need to add a very brief description for each integration test so the matrix will clearly show what the tests are testing. Acceptance tests will be tested against actual user requirements and will list all the tests for each requirement.

Acceptance tests are the final tests and are largely aimed at showing the customer that the correct output is produced for different inputs. This will largely require manual testing.

**Deliverables Due at end of Lab:**

* Completed SCRUM report and reflections

**Deliverables Due at 23:59 12 Days after Lab:**

* integration tests written and stored in repository,
* integration tests written (store in repo), executed (results in Jira and in test documents) and debugged.
* acceptance tests written and stored in repository.
* Updated function-integration-requirements-test matrix stored to the repository.

**Rubric**

|  |  |  |
| --- | --- | --- |
| Individual | Group Participation | 75% |
| Teamwork | 10% |
| SCRUM Report and reflections | 15% |
| Group | integration tests (well-designed, written and documented) | 20% |
| acceptance tests (well-designed, written and documented) | 20% |
| Test Execution (performed, results recorded, issues created) | 15% |
| Debugging (Bugs fixed, documented, Jira updated) | 5% |
| Function-test matrix updated | 5% |
| Git Usage (used properly with good structure) | 5% |
| Jira Usage (creates issues, tracks progress) | 5% |
| Meets Deadlines | 5% |
| SCRUM Report and Reflections | 20% |

**SCRUM Report**

**Summary of Tasks Completed or Delayed in the last week:**

Here you can list all of the tasks completed in the last week along with any tasks which could not be completed with a reason why they could not be completed.

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| --- | --- | --- |
| **Member** | **Tasks Completed** | **Tasks Delayed/Blocked** |
| 1 (Irish) | * Resolved bug associated with validate() function.(see [Jira issue](https://intae.atlassian.net/browse/SSN4-45?atlOrigin=eyJpIjoiNTY5NTBhN2E1MjMwNDFlOWI0MjQzZWFhNTVhNjlkYzMiLCJwIjoiaiJ9) for more details) * Developed integrated functions. (4 total) * Developed test cases for integration functions.   (16 total)   * Updated traceability matrix * Filled in SCRUM report details. | N/A |
| 2 (In Tae) | * Completed documentation for integration test: GetDistancesAndSortByLimitingFactor * Completed reflection questions: 1,3 | N/A |
| 3 (Cesca) | * Found a bug in validate() function.   (see [Jira issue](https://intae.atlassian.net/browse/SSN4-45?atlOrigin=eyJpIjoiNTY5NTBhN2E1MjMwNDFlOWI0MjQzZWFhNTVhNjlkYzMiLCJwIjoiaiJ9) for more details)   * Completed documentation for integration tests:   - ValidateAndGetTruckDistances2  - GetTruckByRefereceAndGetSpace   * Filled in SCRUM report details. | N/A |
| 4 (Gulpreet) | * Completed documentation for integration test: MOCK\_RUN\_ENTIRE\_PROGRAM * Completed reflection questions: 2,4 | N/A |

For every task delayed or blocked, describe the reason for the delay or block, how it impacts the project and the proposed solution or workaround**.**

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| --- | --- |
| **Delayed or Blocked Task** | N/A |
| **Reason for delay or block** |  |
| **Impact on Project** |  |
| **Solution or work-around** |  |
|  |  |
| **Delayed or Blocked Task** |  |
| **Reason for delay or block** |  |
| **Impact on Project** |  |
| **Solution or work-around** |  |

**Summary of Meeting:**

A summary of the main points discusses in the meeting and the outcomes of the discussions.

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| --- | --- | --- |
| Topic | Discussion Summary | Outcome |
| Integration Test Requirements | Reviewed what functions could be integrated and how we could test them; Discussed how many test cases we should have for each integration function | Assigned development of integration functions and tests to Irish, and documentation to the rest of the team |
| Code Refactoring | Discussed if the shortestPath() function needs to be modified further to pass complicated test cases (i.e., multiple obstacles in its path) | Discussed the same with our instructor and decided to not move forward with the development.  (May still be taken up in the final milestone) |
| Milestone deliverables | Reviewed the deliverables and tasks for this milestone | Divided roles and responsibilities among the team |
| Acceptance Tests | Discussed the requirements for the acceptance tests | No additional tests will be developed for acceptance testing; all the requirements were satisfied in previous milestones; According to in the instructor, the matrix was sufficient enough |
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**Summary of Decisions Made:**

This will include major architecture and design decisions, testing decisions, prioritization of tasks, dealing with problems encountered and other major outcomes from the meeting.

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| Decision | Rationale |
| Division of tasks | Decided development of integration functions and tests would be Irish’s responsibility, and the rest of the team was responsible for documentation and the SCRUM report |
| Decision on documentation | It was established clearly that the documentation would be done similarly as in the previous milestones, but the integration function(s) documentation would not be done separately.  Instead, it shall be documented with the test cases under the test-setup section.  This was done with a view to avoid duplicating the descriptions of the functions being integrated as well as because the milestone requirements didn’t explicitly state so. |
| Function-Requirements-Traceability Matrix | Decided we did not need to do additional acceptance tests since the instructor stated the matrix was sufficient. Only the integration test cases shall be incorporated into the final version of the document. |
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**Tasks Attempted During Meeting:**

Each member is assumed to participate in the SCRUM meeting and contribute to the completion of the SCRUM report and reflections. Since the SCRUM meeting will not take more than 20-30 minutes, there is lots of time left to undertake some of the actual work tasks. In the table below, each member should list what they did to complete the SCRUM report, the reflections, and 1-4 other tasks they completed during the class period. If a task could not be completed, the student should indicate why this was not possible.

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| --- | --- | --- | --- |
| Member | Task Attempted | Time Spent | Complete? |
| 1 | -Resolved the bug raised before the group meeting.  -Demonstrated the working of an integration function[*run()*] to the group | 45 min | YES |
| 1,2,3,4 | Reviewed the deliverables for milestone 5. Discussed the constraints/scope for integration testing. | 30 min | YES |
| 1, 2, 3, 4 | Reviewed the outcomes (pass/fail) of integration tests | 10min | YES |
| 1,2,3,4 | Discussed the strategy for the upcoming milestone, with the TEST REPORT being the main topic. | 15 min | YES |
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**SCRUM Tasks Selected for Next Week**:

The tasks each member has selected to pursue for this class or the next week.

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| --- | --- |
| Group Member | Task Description |
| 1,2,3,4 | The tester/developers team will need to estimate and calculate the expenditure on the hardware, and software used while working on this project. This shall be included in the final Test Report, a deliverable for the final milestone. |
| 1,2,3,4 | Review deliverables for final milestone |
| 1,2,3,4 | Research requirements and components for testing report |

**Major Outcomes of Meeting:**

This is where you should highlight the major accomplishments of the class.

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| Outcome | Impact on Project |
| Division of tasks | The development of integration code(function and cases) shall be assigned to one member and documentation shall be completed by the rest of the team.  This would help the team to streamline their work on the current milestone and prevent any conflicts with other members' work on the program code. |
| Awareness of issues in code | Having a shared understanding of what issues are present in the code helped us determine the appropriate steps to address them: After asking our instructor for input, we decided a certain issue in our program was minor and therefore, addressing it was not necessary for this milestone. This helped us appropriately prioritize our time to other tasks. |
| New features/updates to existing code (OPTIONAL) | The team shall try to enhance the code further, if time permits, before delivering the final solution. This may include new features, debugging etc., as the entire code is already developed, and all the test cases pass. This will ultimately improve the quality of the software that the group delivers. |

**Things That Went Well in This Meeting:**

Here you can highlight things which worked well. This indicates that the way you worked on these items is working and should be continued.

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| --- | --- |
| Topic/Work Item | Reason for Success |
| Decision on documentation | This helped the team establish a clear format for documenting integration testing. |
| Division of tasks | As the development process for integration was easier, as compared to Whitebox/Blackbox tests, the tasks were fairly divided among all members of the team. |
| Communication of software quality | After discussing the program’s current state, all members understood what issues needed to be addressed. |
| Future Planning | Discussing the final milestone ahead of time helps us prepare for the upcoming deliverables and ensures that we have enough time to complete them. |
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**Things That Did NOT go Well in This Meeting:**

This is where you can list things which did not go well in the class. You should analyze why this happened and suggest how you can improve it next time. This will lead to the goal of *continuous process improvement*.

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| Topic/Work Item | Reason for Problem and How to do Better |
| N/A | **N/A** |
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**Reflections**:

1. At this point, you are using the GIT hook to automate testing. Have you found that any of the tests failed and prevented you from pushing your code to the repository? If so, how did you handle the situation?  
     
   Previously we did run into problems where the tests failed and prevented us from pushing the code into the repository. We fortunately were able to fix the issues with the tests quickly (such as replacing certain asserts with calculations instead of static numbers). Although we did not run into more severe issues due to the GIT hook, if such a problem would occur, we could comment out the test that was preventing the push and create a ticket on JIRA to ensure that the failed test is not overlooked. Furthermore, creating the ticket on JIRA will help ensure that the resolution of the bug is properly being tracked by other group members.
2. Explain why we are automating the testing process and what the advantages of this automation are.

By employing computers to run tests automatically, software testing is automated. This strategy was chosen primarily because it has several advantages over manual testing. First off, automated tests run significantly more quickly, giving instant feedback on the software's quality, and quickening the development cycle. They also increase dependability since they operate more reliably and less frequently make mistakes due to human error. Additionally, automation enables a broad number of test scenarios, providing complete software testing and identifying any problems.

Secondly, automated tests are incredibly economical. Once written, test scripts can be utilized again, saving time and labor during software updates, and negating the demand for a sizable testing staff. Continuous integration, which smoothly incorporates tests into the development process and finds issues early on, is supported by automation as well. It offers thorough and beneficial reports for problem-solving, assisting in quickly identifying and resolving problems. Overall, automating testing promotes higher software quality and improves the effectiveness and productivity of the development process.

1. Did you find the integration and acceptance tests more difficult to write than the black box and white box tests? If so, why were they harder to write? Did you write more white box and black box tests or more integration and acceptance tests?  
     
   The integration tests and acceptance tests were a bit easier to write than the black box and white box tests as most of the format of the tests were already set up within the functions’ unit tests. As most of the edge cases were already covered in the black box, white box, and unit tests, the integration test could focus on ensuring that the output of one function was properly accepted and returned by another function. Due to these reasons, there were more white box and black box tests than the integration and acceptance tests.  
     
   There were no separate tests created for the purpose of acceptance testing, as the requirements of the project were being tracked on the traceability matrix, and as all the requirements were shown to be met on the matrix, no further tests were required to ensure the quality of the project.
2. Explain why it is necessary to write integration and acceptance tests given that all of the code has already passed black box and white box tests.

Even if earlier tests pass, integration and acceptance tests are vital in software testing. Integration tests concentrate on the interactions between various software components. It guarantees that even if individual parts perform admirably on their own, they perform admirably together as a whole system. These tests ensure that data flows between the various components seamlessly and that they operate in harmony by identifying any potential problems that may develop during integration.

Acceptance tests, on the other hand, focus on fulfilling the demands and expectations of users. They determine if the software achieves its goals and provides an enjoyable user experience. Acceptance tests examine the software from a user's perspective, ensuring it behaves as intended, whereas other tests may check technical features. By doing these tests, developers can be sure that the software will function flawlessly in actual scenarios and will satisfy all necessary specifications, resulting in a high-quality and user-friendly final product.