# **Milestone 4 Scrum Report**

All students are expected to attend the scrum meetings and to participate. Failure to do so will result in greatly reduced grades.

**GROUP**: Team4

**Members Present**:

|  |  |
| --- | --- |
| 1. Seulgi Lee | 4. Alejandro Mercado |
| 2. Khassan Suleimanov | 5. |
| 3. Philip Grahamm | 6. |

## Milestone 4 Tasks

* Finish implementing/coding the functions.
* Finish implementing/coding blackbox tests. Store in repo, executed, results in Jira (and on corresponding test documents, and debugged.
* A set of whitebox tests as test documents (in an Excel file) with test data for the functions you created. At least 4 sets of test data are required for each function. You must have test cases for at least 6 functions (including all your custom function). Stored in the repository.
* Whitebox tests implemented (in the C++ testing project), stored in repository, executed, results in Jira and on corresponding test documents, and debugged (at least 1 SET is required).
* Updated requirements traceability matrix stored in the repository.
* Completed hook file (for EACH team member) for test automation stored in the repository.
* Completed scrum report including reflection questions answered.

**Rubric:**

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| --- | --- | --- |
| **Individual** | Group participation (includes GitHub commits and Jira usage) | 80% |
| Teamwork | 20% |
| **Group** | Implemented functions and main (well-designed, and documented) | 10% |
| Finish coding blackbox code (well-designed, written, and documented) | 5% |
| Whitebox test case document (well written, complete, good test data) | 10% |
| Whitebox test code (well designed and documented) | 10% |
| Updated requirements traceability matrix | 10% |
| Test execution (performed, results recorded, issues created) | 10% |
| Debugging (bugs fixed, documented, Jira updated) | 5% |
| Hook files | 10% |
| Git usage (used properly with good structure) | 5% |
| Jira usage (creates issues, tracks progress) | 15% |
| Scrum report & reflections | 10% |
| **Deadline** | 20% deduction for each day you are late |  |

**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** |
| Seulgi Lee | 1. Understood how to add function specifications to a new header file 2. Understood the initial test case documents 3. Reviewed C++ testing project samples 4. Exchanged opinions on the answers to the reflection questions 5. Assigned roles and completed Jira issues and assignments 6. Complete scrum report. 7. Write the Reflection. 8. Made timeline and board about Milestone3 using Jira and assign team members. 9. Write a requirements traceability matrix added to the repository and shows the mapping between the requirements and test cases. 10. Update Jira with the work performed and planned. | None |
| Khassan Suleimanov | 1. Understood how to add function specifications to a new header file 2. Understood the initial test case documents 3. Reviewed C++ testing project samples 4. Exchanged opinions on the answers to the reflection questions 5. Assigned roles and completed Jira issues and assignments 6. Add new set of function specifications to a new header file stored in the repository. 7. Write reflection Q3 (about function prototypes) 8. Write function-description document and stored in a repository. 9. Update Jira with the work performed and planned. | None |
| Philip Grahamm | 1. Understood how to add function specifications to a new header file 2. Understood the initial test case documents 3. Reviewed C++ testing project samples 4. Exchanged opinions on the answers to the reflection questions 5. Assigned roles and completed Jira issues and assignments 6. Write a set of blackbox tests as test documents with test data for the functions you created. 7. Write reflection Q1 (about blackbox test) 8. Update Jira with the work performed and planned. | None |
| Alejandro Mercado | 1. Understood how to add function specifications to a new header file 2. Understood the initial test case documents 3. Reviewed C++ testing project samples 4. Exchanged opinions on the answers to the reflection questions 5. Assigned roles and completed Jira issues and assignments. 6. Create and add a C++ testing project to your solution. 7. Add a set of AT LEAST 4 function specifications added to a new header file. 8. Write blackbox test code (for the functions above) and store in repository (at least 1 is required for this milestone). 9. Update Jira with the work performed and planned. | None |

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** | None |
| **Reason for delay or block** | None |
| **Impact on Project** | None |
| **Solution or work-around** | None |

**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 |
| Function Implementation and Coding Completion | Shared updates on the functions they are currently working on, with a particular emphasis on the custom functions. | Agreed that all functions should be fully implemented by the next meeting. |
| Completion of Blackbox Test Code | Decided to complete the blackbox test code that was developed in Milestone 3. | After designing the test cases, the code will be written, executed, and the results will be documented in Jira. |
| Whitebox Testing Documents and Code | Discussed how to write whitebox test cases. | Decided to create documents for each function including at least four sets of test data and to store these documents in the repository. Additionally, whitebox test codes will be implemented, with results recorded in Jira. |
| Update to Requirements Traceability Matrix | Reviewed the existing project requirements and discussed how to effectively update them. | The requirements traceability matrix will be kept up-to-date and stored in the repository. |
| Hook Files for Test Automation | Discussed how each team member would create their hook file for test automation. | Each team member will complete their individual hook file and upload it to the repository. |
| Jira Project Update | Discussed updating the Jira project to show activities and progress. | Agreed to share progress transparently among team members via Jira and to perform regular updates. |
| Completed Scrum Report | Discussed writing a completed scrum report, including reflection questions. | Decided to use the scrum report to facilitate team reflection, gather feedback, and continuously improve project processes. |

**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 |
| Completion of All Function Implementations | To adhere to the project timeline and focus on upcoming milestones, it was decided to complete the implementation of all functions by the next meeting. |
| Completion of Blackbox Test Code | To ensure the accuracy of each function and address any issues promptly, completing the blackbox test code started in Milestone 3 was deemed necessary. |
| Creation of Whitebox Testing Documents and Code | To ensure thorough testing and validate the internal logic of the code, it was decided to create whitebox testing documents and code, including at least four sets of test data for each function. |
| Update to Requirements Traceability Matrix | To maintain a clear linkage between project requirements and tests and to track the fulfillment of all requirements, continuous updating of the requirements traceability matrix was decided. |
| Completion of Hook Files for Test Automation | To increase the efficiency of the testing process and minimize errors in repetitive tasks, each team member was tasked with developing their own hook file for test automation and uploading it to the repository. |
| Update to Jira Project | To keep all team members transparently informed about the project's progress and ensure everyone is up-to-date, active use and regular updating of Jira were agreed upon. |
| Completion of Scrum Report | To facilitate team reflection, gather feedback, and continuously improve project processes, it was decided to document this information through the scrum report. |

**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.

|  |  |  |  |
| --- | --- | --- | --- |
| Member | Task Attempted | Time Spent | Complete? |
| Seulgi Lee,  Khassan Suleimanov,  Philip Grahamm,  Alejandro Mercado | Drafting the scrum report. | 30min | Yes |
| MS4 setup of Jira issues. | 10min | Yes |
| Exchanged opinions on the answers to the reflection questions. | 10min | Yes |
| Assigned roles and completed Jira issues and assignments. | 10min | Yes |
| Khassan Suleimanov | Completion of Hook Files for Test Automation. | 30min | Yes |
| Alejandro Mercado | Completion of Hook Files for Test Automation. | 30min | Yes |

**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 |
| Seulgi Lee | Complete scrum report. |
| Write the Reflection Q2. (about Agile) |
| Made timeline and board about Milestone3 using Jira and assign team members. |
| Update to Requirements Traceability Matrix. |
| Completion of Hook Files for Test Automation. |
| Update Jira with the work performed and planned. |
| Khassan Suleimanov | Write test-description document and stored in a repository. |
| Write the Reflection Q1. (about Whitebox test) |
| Update Jira with the work performed and planned. |
| Philip Grahamm | Write test-description document and stored in a repository. |
| Write the Reflection Q3. (about hook file) |
| Update Jira with the work performed and planned. |
| Alejandro Mercado | Finish implementing/coding the functions. |
| Finish implementing/coding tests. Store in repo, executed, results in Jira (and on corresponding test documents, and debugged. |
| Update Jira with the work performed and planned. |

**Major Outcomes of Meeting:**

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

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| --- | --- |
| Outcome | Impact on Project |
| Agreement to complete all function implementations by ASAP. | Ensures that the project remains on schedule, allowing more time for thorough testing and debugging, thus enhancing the overall quality and reliability of the software. |
| Decision to complete the blackbox test code initiated in Milestone 3. | Facilitates early detection of functional discrepancies and bugs which can be addressed promptly, increasing the software’s robustness. |
| Plan to create detailed whitebox testing documents and implement corresponding test code for each function. | Promotes a deeper understanding of the internal operations of the code, ensuring that the functions perform as expected under various scenarios and improving code coverage. |
| Continuous updating of the requirements traceability matrix was agreed upon. | Maintains a clear linkage between requirements and implemented functionalities, which is crucial for managing project efficiency and ensuring quality assurance. |
| Jira Project Update | Agree to share progress transparently among team members via Jira and to perform regular updates. |
| Completed Scrum Report | Decide to use the scrum report to facilitate team reflection, gather feedback, and continuously improve project processes. |

**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 |
| Held scrum meeting after class | Held a Scrum meeting immediately after class. It was time-efficient, allowed everyone to meet in person, and we could ask the professor questions directly if needed. |
| Discussion on Reflection | We discussed the overall reflection and decided that each person responsible for a particular task would write their part. This approach ensures that the reflection is more accurate and effective. |
| Problem Analysis | By analyzing the problem together, we shared what we know and what we don't know, significantly improving our overall understanding of the project. |
| Task Sharing via Jira | The team lead shared tasks on Jira, increasing clarity about the tasks and helping team members understand their roles better. |
| Prioritizing and Handling Tasks | By prioritizing and handling tasks in order, we ensured that critical tasks were completed on time, enhancing the overall efficiency of the team. |

**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*.

|  |  |
| --- | --- |
| Topic/Work Item | Reason for Problem and How to do Better |
| Task Allocation and Deadline Management | * **Reason for Problem:** Previously, tasks were primarily assigned based on each team member’s strengths without sufficient consideration for the priorities of tasks and impending deadlines. * **How to do Better:** In future meetings, we should enhance our planning by integrating a priority-based task assignment strategy. This involves reassessing the deadlines and importance of each task during planning sessions. If a task is at risk of not meeting its deadline, it should be reassigned promptly to ensure timely completion. This adjustment will help maintain project momentum and prevent bottlenecks. |

**Reflections**:

Answer the following questions using your own words. Make sure that each answer comprises a minimum of 100 words.

1. **Why did we wait until the fourth milestone to write the whitebox tests?**

We waited until the fourth milestone to write whitebox tests for several reasons. Early milestones focused on building and stabilizing the core parts of the project. Writing detailed tests too early might be wasted effort if the code changes a lot. That is the main point , why we start working on whitebox testing now. Writing whitebox tests is time-consuming, in my view by the fourth milestone, the code was stable enough to make this effort worthwhile. In summary, we waited to ensure that the code was stable and mature enough for detailed testing, making the process more efficient and effective.

1. **How does the Agile methodology ensure that all team members are consistently engaged throughout the software development process, avoiding downtime due to dependencies on others? Provide an example to illustrate your point.**  
     
   Agile methodology is an approach to software development that enables fast and flexible responses. The methodology emphasizes continuous improvement and rapid feedback through short development cycles. Agile aims to adapt quickly to change and develop efficiently, centered on user needs and the quality of the software.

Agile methodologies minimize dependency issues through transparent communication and regular collaboration between team members. In sub-approaches of agile, such as Scrum, teams have short daily meetings to share their progress and quickly identify and resolve potential delays in the project's progress by asking for or offering each other the help they need.

In contrast, the waterfall methodology is a plan-driven, sequential approach, where each development phase must be completely finished before moving on to the next. Because of this, delays in any phase can impact the overall project schedule. Agile, on the other hand, takes an iterative approach where deliverables are reviewed and adjusted at the end of each sprint, providing flexibility and reducing the impact of problems in one phase on the overall project.

In fact, our team would have encountered issues with dependencies in our current milestone if we hadn't applied the agile methodology. For example, milestone 4 involves writing white-box test cases, which can only be done once all feature development is complete. We identified this in advance in our scrum meetings and agreed to expedite the feature development as a priority, but without these scrum meetings, we wouldn't have been able to keep team members engaged and aware of the project and quickly fix any issues that arise.

In this way, we are addressing the various issues that may arise during each sprint in real time, which contributes greatly to keeping the overall progress of the project smooth.

1. **What is a shell script and how are we going to utilize a hook script in this project?**  
     
   Shell scripts are files that automatically execute commands on your computer. They're very useful, especially for automating repetitive tasks.

For this milestone, we're going to use hook scripts, which are basically scripts that allow you to do things automatically at certain stages of development. For example, when we push our code to Github, we want to automatically run tests to make sure that everything works and if it does, we can push the code.

We've set up hook scripts for each of our members to do these things when we push code to Github, so that we can keep the quality of our code high, and if there are any issues, we can recognize them when we push and fix them, which speeds things up overall. I learned a very useful script.