Test Plan Outline

1. BACKGROUND

Student Assistant Hub (SA Hub) is a web-based system developed by DIVAlopers, a team of 3rd Year BS Computer Science students from Asia Pacific College. The system aims to automate and improve the Student Assistant Program's task assignment and record-keeping processes. The current manual system faces challenges with data consistency, accuracy, and efficiency in managing 161 Student Assistants across different offices.

2. INTRODUCTION

In the SA Hub system, task assignments are designed to automate the entire process of matching Student Assistants (SAs) to tasks that align with their course program, available schedules, and required work hours. The system will analyze each SA's academic timetable, voluntary availability, and scholarship requirements to ensure they are paired with tasks that optimize both their academic performance and service hours.

Currently, the process is manual, relying on MS Teams for task communication and MS Excel for record-keeping, which can be time-consuming and prone to errors. SA Hub will transition this setup into an integrated, web-based solution, minimizing administrative overhead and enhancing efficiency. This shift will

enable faster task matching, more transparent record-keeping, and seamless updates, benefiting both SA managers and the students involved.

3. ASSUMPTIONS

- All users have access to web browsers and internet connectivity
- Integration with APC's existing systems is possible for class schedule data
- Users have basic computer literacy skills
- The system will be hosted on Hostinger
- All stakeholders (SAs, SA Head, Offices) will have access to the system during testing
- Test data will be available from current SA program records

4. TEST ITEMS

List each of the items (programs) to be tested.

- **Automated Task Assignment:** Automated system to assign tasks to Student Assistants based on academic program and availability.
- **Real-time Task Tracking:** Tracks task progress and deadlines in real-time for Student Assistants and managers.
- **Profile and Attendance Management:** Allows Student Assistants to update their profiles, log work hours, and view their task history.
- **Criteria-based and Voluntary Task Requests:** Enables offices to submit task requests with specific criteria or post voluntary tasks.
- **Scholarship Status Management:** Manages statuses, including tracking scholarship status, probation details, and cancellations.
- **SA Reports:** Adds scholarship status tracking in reports.

- **Scholarship Status:** Allows SA Managers to input scholarship information, including probation and cancellation reasons.
- **Cancellation of Scholarship Page:** Displays a list of SAs with scholarship cancellation reasons and action options.
- **Guidance Dashboard for Scholarship Management:** Monitors SA scholarship status by tracking scholarships, probations, and cancellations.
- **Report Generation:** Creates reports on task completion, rendered hours, and scholarship status.
- **Feedback**: Provides a way for Offices and managers to give feedback on completed tasks and overall system performance.

5. FEATURES TO BE TESTED

List each of the features (functions or requirements) which will be tested or demonstrated by the test.

- **Automated Task Assignment:** Ensure tasks are assigned accurately based on academic program and availability.
- **Real-time Task Tracking:** Verify that task progress and deadlines are updated accurately in real-time.
- **Profile and Attendance Management:** Test the functionality for updating profiles, logging hours, and viewing task history.
- **Criteria-based and Voluntary Task Requests:** Confirm that offices can successfully submit requests with specific criteria and post voluntary tasks.
- **Scholarship Status Management:** Test tracking and management of scholarship statuses, including probation and cancellation functions.

- **SA Reports**: Verify that reports display the scholarship status of SAs accurately.
- **Scholarship Status:** Test the functionality of entering scholarship information, including reasons for probation or cancellation.
- **Cancellation of Scholarship:** Confirm that the page lists SAs with canceled scholarships, displaying reasons and options for action.
- **Guidance Dashboard for Scholarship Management:** Ensure that the dashboard accurately tracks scholarships, probations, and cancellations.
- **Report Generation**: Verify the accuracy of reports for task completion, rendered hours, and scholarship updates.
- **Feedback:** Confirm that feedback can be submitted for completed tasks and that the system records and displays feedback correctly.

6. FEATURES NOT TO BE TESTED

Explicitly lists each feature, function, or requirement which won't be tested and why not.

- **Non-functional UI Aspects:** Minor design elements, like fonts and colors, are excluded unless they impact usability or functionality**.**
- **Extended Data Backup and Recovery:** Testing for long-term data backup and recovery will not be included in this scope.

7. APPROACH

Testing Types

- Unit Testing – Individual modules, such as task assignment and profile management, will be tested to verify that they function correctly individually.
- System Testing – The entire SA Hub web-based system will be tested as a whole to evaluate end-to-end functionality and confirm that tasks and scholarship management workflows are accurate and efficient.

Test Phases

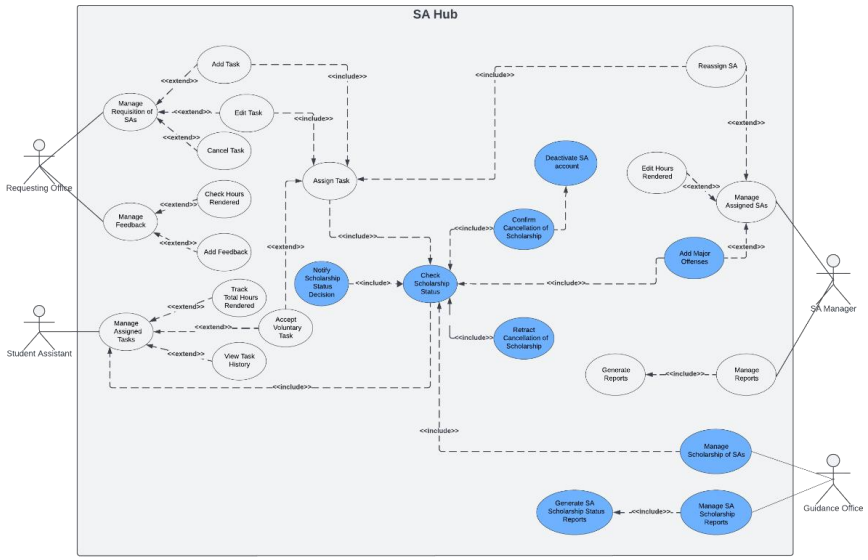
- Preparation Phase – Prepare the test environment on Hostinger, configure necessary test accounts for each user role, and load test data sourced from current Student Assistant program records.
- Execution Phase – Conduct manual tests for each feature based on the detailed test cases. Testing will cover all critical paths, including automated task assignment, scholarship management, feedback collection, and reports.

- Defect Management Phase – Track any issues discovered during testing, prioritize them by impact, and assign them for resolution. Re-test any areas impacted by defect fixes to ensure all functionalities remain stable.

Test Execution Methods

- Manual Testing – All features (user interactions like task assignment, update scholarship status, etc.) will be manually tested according to the test cases listed.

The following diagrams illustrate the SA Hub's use cases and context flow, providing a visual reference for the testing approach.



8. ITEM PASS/FAIL CRITERIA

Pass Criteria

- All test cases of each feature must achieve expected outcomes without errors or failures.
- Core functional requirements, as outlined in the Test Items and Features to Be Tested, must be met.
- The user interface must display correctly, with no critical usability issues affecting functionality.
- Task assignment and record management must be accurate according to SAs' schedules, course or program, task and scholarship statuses.
- Data accuracy for hours calculation must be 100%.

Fail Criteria

- Any test case that results in unexpected outcomes or fails to meet required specifications.
- Instances where task assignment, task progress, or scholarship management do not align with functional requirements, leading to incorrect or incomplete records.
- User interface errors that disrupt user navigation, task assignment and viewing, records, and such.
- Failure to accurately track, log, or record SA hours or scholarship statuses, which results in incorrect reporting.

Itemized list of expected output and tolerances:

Task Assignment	Record Management	User Interface
• Correct matching of SAs with tasks based on course program • Accurate schedule conflict detection • Proper notification delivery	• Accurate hours calculation and tracking • Correct data storage and retrieval • Proper report generation	• All features accessible per user role • Correct display of information • Proper error handling

9. SUSPENSION/RESUMPTION CRITERIA

Testing will be suspended if any of the following conditions occur:

- Any critical system failures arise that prevent access to the SA Hub, such as server downtime, database inaccessibility, or significant UI malfunctions that halt core functionality.
- Data integrity issues or when test data becomes corrupted, resulting in inaccurate task assignments, record errors, hours miscalculations, or such.
- Performance degradation when the system fails to meet the minimum performance benchmarks (page load times exceeding acceptable limits, unresponsive features, etc.) that critically impact usability and workflow efficiency.
- Issues with the testing environment or integration points (database connectivity, APC systems integration, etc.) that disrupt the test process.

Resumption Criteria

Testing will only resume if:

- All critical and high-severity issues causing the suspension to have been resolved, verified, and approved by the testing team.
- Any corrupted data has been restored, and data integrity has been validated to ensure accurate test results.
- The system performance is verified to meet or exceed the required benchmarks, confirming stable operation across all test cases.

- The testing environment and integration points are fully functional which allows uninterrupted test execution.

10. TEST DELIVERABLES

In addition to the software itself, the following test deliverables will be provided:

Test Report: A comprehensive document summarizing the results of the testing phase. It will include:

- Test case actual results (passed/failed)
- Recommendations for bug fixes or enhancements

Test Cases Documentation:

- List of all test cases executed, with scenarios, preconditions, steps, expected results, and actual outcomes.

Requirements Traceability Matrix (RTM):

- Tracks each requirement's coverage through associated test cases, ensuring that all specified functionalities are validated.

11. TESTING TASKS

Functional Tasks:

- **Equipment Setup**: Prepare the necessary hardware and software environments, including:

    - Installation of the system under test (SA Hub)
    - Setting up databases and web servers
- **Test Case Execution**:
    - Running functional tests for all use cases (e.g., task assignment, scholarship management, feedback)
    - Execution of performance tests (e.g., task assignment response times, system load tests)
    - Execution of security tests (e.g., role-based access control, encryption verification)
- **Bug Reporting and Tracking**:
    - Re-test after fixes have been applied

Administrative Tasks:

- **Test Plan Management**: Track progress on testing activities, including scheduling and resource allocation.
- **Documentation**: Ensure all testing results are properly documented, including test reports and bug logs.
- **Status Reporting**: Provide regular updates on the testing progress to the project team and stakeholders.

12. ENVIRONMENTAL NEEDS

Security Clearance: Ensure all testers have the necessary permissions to access secure data (e.g., scholarship records, student information).

Office Space & Equipment: Ensure the team has access to the following:

- Workstations/laptops with necessary software installed like browser (Google Chrome, Edge, Mozilla Firefox, etc.)
- Reliable network connections for accessing cloud services or external systems
- Access to a test server where the system under test (SA Hub) is deployed

Hardware/Software Requirements:

- **Hardware**: Servers (for hosting the SA Hub), workstations (for testers)
- **Software**: Browser like Google Chrome, Microsoft Edge, Mozilla Firefox, etc..

13. RESPONSIBILITIES

Testing Team (QA):

- Execute the test plan, including functional, performance, and security testing
- Prepare and deliver the test report

Developers:

- Provide support during the testing phase, especially in debugging and resolving defects
- Collaborate with QA on re-testing after bug fixes

Test Manager:

- Oversee the testing process to ensure all tasks in Section 11 are completed
- Ensure timely delivery of test results and reports to stakeholders

User/Client:

- Review test reports and provide feedback on critical issues
- Validate that the system meets all functional and performance requirements outlined in the product backlog and SRS

14. STAFFING & TRAINING

The Staffing and Training section of a test plan outlines the human resources required to execute the testing activities and the necessary training to ensure their success. Here's a breakdown of roles and responsibilities to include for staffing:

- Test Manager: Oversees the entire testing process, including planning, execution, and reporting.
- Test Lead: Manages a specific test team or test phase.
- Test Analyst: Designs and develops test cases, test scripts, and test data.
- Developer: May be involved in unit testing and integration testing.
- Business Analyst: May be involved in defining test scenarios and acceptance criteria.

Conduct training sessions to familiarize the team with the structure and usage of the test case Excel template. This will cover topics such as Test case ID, Test Case Title, Preconditions, Test Steps, Expected Results, Actual Results, Status, and Comments.

Organize regular Scrum meetings (daily stand-ups, sprint planning, sprint review, and retrospectives) to foster collaboration and continuous improvement.

During these meetings, discuss:

- Progress made on test cases and test execution.
- Any impediments or blockers encountered.
- Refinement of test cases based on feedback and emerging requirements.
- Lessons learned and opportunities for improvement.

15. SCHEDULE

The schedule is designed to ensure efficient utilization of resources and timely delivery of the testing deliverables. It includes key milestones, dependencies, and risk mitigation strategies. The overall timeline is subject to change based on evolving project requirements and unforeseen circumstances.

Phase 1: Test Planning and Preparation

Start Date: October 7, 2024

End Date: October 15, 2024

Activities:

- Review functional and technical specifications
- Develop test strategy and test plan
- Design test cases and test scenarios
- Prepare test data
- Set up test environment

Phase 2: Test Execution

Start Date: October 16, 2024

End Date: October 23, 2024

Activities:

- Execute test cases
- Log defects and track issues
- Retest fixed defects
- Perform regression testing

Phase 3: Test Closure

Start Date: October 23, 2024

End Date: October 29, 2024

Activities:

- Evaluate test results
- Generate test reports
- Finalize test deliverables
- Conduct a test closure meeting

16. RESOURCES

In this section, we outline all the necessary resources required to execute the testing process effectively. This includes the personnel involved in testing, the tools and software needed, and any hardware or infrastructure requirements. Time and budget considerations are also accounted for, ensuring that the project has sufficient capacity to meet testing demands. Proper resource allocation is critical to ensure that all testing activities are completed within the project's scope and timeline.

- **Personnel**: List the people involved in the testing process, including:
    - Project Manager, Development Lead
    - Scrum Master
    - Product Owner
    - QA Lead
    - Business Analyst
- **Tools and Software**:
    - Sharepoint for project tracking
    - MS Office: Excel, Word, and Teams
    - Laravel
    - Github
    - Hostinger
- **Hardware Requirements**:
    - At least 4GB of RAM, but 8GB or more is recommended for smoother performance, especially when running multiple applications simultaneously.
    - A modern processor with at least 4 cores and a clock speed of 2.0 GHz or higher

- A solid-state drive (SSD) with at least 256GB of storage for faster boot times and application loading

17. RISKS & CONTINGENCIES

This section identifies potential risks that may impact the testing process and provides contingency plans to address them. Recognizing risks in advance allows the project team to prepare for and mitigate issues that could delay testing, increase costs, or affect the quality of the final product. By planning for these uncertainties, the team can respond quickly and effectively to any obstacles that arise during testing.

- **Risk Identification**: List possible issues that may arise during testing. Some examples:
  - **Resource Constraints**: Not enough personnel or hardware.
  - **Delays**: Due to dependencies like delayed software builds, code freeze, or unavailability of key personnel.
  - **Technical Challenges**: Bugs in the test environment or tools not functioning as expected.
  - **External Factors**: Environmental issues, third-party service outages, or changes in client requirements.
  - **Impact Assessment**: Mention how each risk could affect the timeline, budget, or quality of the testing process.
- **Contingency Plans**: Define how you will handle each risk if it arises. This might include:
  - Backup resources or personnel.
  - Adjusted timelines.

- Escalation procedures if issues become unmanageable.

18. APPROVALS

This section details the key stakeholders responsible for reviewing and approving the test plan. Obtaining formal approval ensures that all involved parties agree on the testing scope, strategy, and timeline. The approval process formalizes the commitment to the testing process and ensures alignment among project leads, managers, and team members.

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