**Test Objectives:**

* **Functionality:** Verify that the program performs as required, including user authentication, the voting procedure, and result computation.
  + To confirm that every student is limited to one vote.
* **Usability:** Assess the application's usability in terms of navigation, user interface, and feedback from users.
* **Security:** Confirm that the application has safeguards in place to stop illegal access, data breaches, and vote manipulation.
  + To guarantee that the campus nominations are limited to students who are actively enrolled.
* **Performance:** Evaluate the application's scalability and response times under both typical and heavy load conditions.
* **Compatibility:** Verify that the program works with various operating systems, browsers, and devices.
* **Reliability:** Examine the stability, fault tolerance, and error handling of the application to confirm its dependability.
  + To confirm that the secret ballot concept is upheld.
* **Accessibility:** Check that the program complies with accessibility standards and is usable by people with impairments.

**Test Strategies:**

* Unit Testing: Test individual application module (functions, methods, classes) to ensure they work correctly in isolation.
* Integration Testing: Verify that integrated components work together as expected, focusing on interfaces and interactions.
* System testing: Verify that the entire system satisfies all functional and non-functional criteria by testing it thoroughly.
* Acceptance Testing: Validate the application against user requirements and ensure it is ready for deployment.
* Security Testing: We will test the application's security and ensure that it protects the privacy of the students. This includes testing for vulnerabilities, input validation, and access controls.
* Usability Testing: Have users test the application to evaluate its ease of use and user satisfaction.
* Performance Testing: Test the application's performance under various load conditions to identify and address bottlenecks.
* Regression Testing: Re-test previously tested features to ensure they still work after changes or updates.

**Entry Criteria:**

These are the requirements that must be fulfilled before actual application testing can begin, such as finished development and the availability of test environments, in order for testing to start.

* The test environment should be configured and prepared for use.
* The application should be finished and prepared for testing.
* It is necessary to examine and approve the test cases and test plan.
* There shouldn't be any serious flaws in the program that might affect testing.

**Exit Criteria:**

Requirements that must be fulfilled, including passing every test case and hitting performance goals, in order to finish testing and go on to the next stage.

* Every test case needs to have been run through, executed and passed.
* Every problem that is rated as high or medium priority has to be repaired and retested.
* The application must fulfill all criteria, including functional and non-functional.
* The application has to be secure and safeguard students' privacy.
* The application need to be simple to use and easy on the eyes, i.e UI and UX (User Interface and User Experience).
* The application should be able to accommodate multiple logins for users and votes on the application.

**Test Cases and Procedures:**

1. Requirement; verify that only registered students can log in.

* Test Procedure:
* Register a new student.
* Attempt to log in with the new student's credentials.
* Verify that the login is successful.
* Log out.
* Attempt to log in with a non-registered student's credentials.
* Verify that the login is unsuccessful.

**Expected Result:** Only registered students can log in.

1. Requirement: Verify that each student can only cast one vote.

* Test Procedure:
* Log in as a registered student.
* Cast a vote.
* Log out.
* Log in again as the same student.
* Attempt to cast another vote.
* Verify that a message is displayed indicating that the student has already voted.

**Expected Result:** Each student can only cast one vote.