**Testing Framework**

System testing involves a variety of methods for confirming the system function and performance. Different types of tests are performed to confirm various aspects of the system. Below are descriptions of several different test types. As part of project planning the Technical Lead will work with the team to identify which test types are appropriate for the project.

**Test Preparation** is an important part of any system implementation. Typical activities for Test Preparation include:

* Define the types of tests to be performed and the participants
* Identify and setup the test environment
* Identify test case scenarios and profiles
* Develop test case documents (if applicable)
* Define method of capturing and tracking test results and resolution methods
* Coordinate test logistics (e.g. test dates, location, participants etc.)

**Test Type Description**

| **Test Type** | **Definition** | **What it is** | **What it is NOT** | **Typical Participants** |
| --- | --- | --- | --- | --- |
| Usability Test | A test of the system user interface design and navigability.  | * Confirm Design, layout and appearance of screens
* Identify user challenges and methods of addressing (change to design or handle via training and performance support)
* Accessibility testing
 | * Exhaustive test of all business conditions
* A test method used for standard “out-of-the-box” software.
 | * End Users
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| Unit Test | A test of **single** events including transactions and notifications to ensure that each business event functions as designed. | * Test of INDIVIDUAL business events
* Test of specific system transaction
* Test of specific business procedure
* Test of end user role and profile as related to a specific business event
 | * Test of integrated functionality
* Test of interfaces
 | * Technical developer(s)
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| Integration Test | A test of a **series** of events and transactions to ensure that all processes , transactions, interfaces, notifications function as designed. | * Test of all conditions that support high risk, high volume or complex business events
* Test of critical interfaces and conversions
* Test of end-user roles and security profiles
* Test of architecture (including business activities, interfaces , conversions and environment)
* Verification of Scripts – individual and bundled for Usability Test
* Verification of Quick Reference Card and documentation materials
 | Exhaustive test of all business conditionsTest of high volume transactions | Core Project team in early cycles with additional team members added in  |
| User (Acceptance) Test | A test of a **series** of events and transactions to ensure that all processes , transactions, interfaces, notifications function as designed. | * An extension of integration testing with a group of users who have had less exposure to the system than the project core team
* May serve as a step or method of sign-off that the system is ready to go-live
 |  | End Users |
| Regression Test | A re-test of portions of unit and integration testing AFTER issues have been identified and solutions (e.g. bug fixes) have been applied to the system. | * Re-Testing
 |  | Core Project Team |
| Vulnerability Test | A Test of system ability to avert unwanted attack. Vulnerability can be checked at both a server and application level. | * A server scanning service that can test a server's operating software including its operating system, database system, Web server software and other middleware for known system vulnerabilities and ensure that each piece of operating software has the latest security updates installed, and
* A Web application scanning service that can test Web application for weaknesses and flaws in its design and programming.
 |  | * OIT Security and Data Protection Group
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| Stress Test | A Test to validate that system performance meets the business requirements. | * Test of peak load, critical performance scenarios
* Test of PERIODIC high-volume transactions
* Test transactions that are time sensitive and require high performance
* Tests a subset of business events which make up the bulk of the potential system utilization
* Tests nightly, monthly, quarterly and yearly batch processes
 | * Performance of existing systems
* Evaluation of business process design, look and feel
* All on-line transaction and background jobs (only those items that are part of the peak load scenarios and are felt to be critical performance items)
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Ref.: Modified from Princeton University T