PERFORMANCE TESTING

Date	1 November 2025
Team ID	NM2025TMID03847
Project Name	Educational Organisation using Service Now
Maximum Marks	4 Marks

Performance and Testing Phase – Educational Organisation Using ServiceNow

The Performance and Testing Phase plays a vital role in confirming that the Educational Management System (EMS) developed on ServiceNow operates correctly, delivers optimal performance, and fulfills all specified requirements. This phase concentrates on validating workflow accuracy, testing automation script functionality, assessing system responsiveness, and verifying data integrity across all modules..

1. Objectives of Testing

The main objectives of this phase include:

- To ensure that all developed modules and scripts work according to design specifications.

- To validate the automation logic implemented in **Client Scripts**, **Process Flows**, and **Form Designs**.

- To check the **performance, reliability, and accuracy** of the ServiceNow application under different data conditions.

- To identify and rectify bugs or logical errors before deployment.

- To verify that the system supports smooth interaction between all components — **Salesforce Table**, **Admission Table**, and **Student Progress Table**.

2. Types of Testing Conducted

Different levels and types of testing were performed to ensure complete system reliability.

Type of Testing	Purpose	Description / Example
Unit Testing	To verify the functionality of individual scripts and fields.	Tested scripts for Auto Populate, Pincode Update, Total, Percentage, and Result calculations.
Integration Testing	To check data flow between tables.	Ensured Admission Table successfully pulls data from Salesforce and links with Student Progress Table.
Functional Testing	To validate the working of end-to-end features.	Tested the admission process, student data entry, and progress calculations.
Performance Testing	To evaluate system response and speed.	Measured load time of forms and execution time of client scripts.
User Interface (UI) Testing	To ensure a clear and userfriendly interface.	Verified field alignment, form layouts, and accessibility.
Validation Testing	To confirm data accuracy and rule enforcement.	Checked mandatory fields, input validation, and field disabling logic.
Regression Testing	To ensure new updates did not affect existing functionality.	Re-tested automation logic after each sprint update.
User Acceptance Testing (UAT)	To get final feedback from users (admins/teachers).	Ensured satisfaction with workflows, process navigation, and form usability.

3. Test Scenarios and Test Cases

(a) Functional Test Scenarios

Test Case ID	Feature / Functionality	Test Description	Expected Result	Status
TC-01	Admin Number Generation	Verify if admission numbers are autogenerated in sequence.	Unique admin number should be created for each new record.	Passed
TC-02	Auto Populate Script	Check if student details auto-fill from Salesforce data when admission number is selected.	Relevant fields (name, grade, parents' details) populate automatically.	Passed
TC-03	Pincode Script	Enter pincode and verify if city, district, and mandal are autofilled.	Correct location details should appear based on the given pincode.	Passed
TC-04	Disable Fields	Ensure calculated fields (Total, Percentage, Result) cannot be manually edited.	Fields remain readonly for users.	Passed
TC-05	Total Calculation	Validate total marks calculation when all subject marks are entered.	Total should equal the sum of all subject marks.	Passed
TC-06	Percentage Calculation	Verify percentage field updates based on total marks.	Percentage = (Total / 600) × 100.	Passed
TC-07	Result Determination	Verify if result displays "Pass" or "Fail" based on percentage.	$\geq 60\% \rightarrow$ Pass, $< 60\% \rightarrow$ Fail.	Passed

Test Case ID	Feature / Functionality	Test Description	Expected Result	Status
TC-08	Process Flow Transitions	Check admission lifecycle transitions (New → Joined → Closed).	Status transitions correctly without errors.	Passed
Test Case ID	**Feature / Functionality**	**Test Description**	**Expected Result**	**Status**
TC-09	Field Validation	Verify that mandatory fields cannot be left blank.	User is prompted to complete all required fields.	Passed
TC-10	Data Integration	Check if Admission and Student Progress data are correctly linked to Salesforce.	Data synchronization between tables is successful.	Passed

(b) Performance Test Scenarios

Test Case ID	**Parameter Tested**	**Test Description**	**Expected Result**	**Status**
PT-01	Form Load Time	Measure time taken to load each form.	Form should load within 2–3 seconds.	Passed
PT-02	Script Execution Time	Observe delay in autopopulation or calculations.	Script should execute instantly after input change.	Passed
PT-03	Data Volume Handling	Test application with 500+ records.	System should respond without lag or timeout.	Passed
PT-04	Multi-User Access	Simulate multiple users accessing simultaneously.	System should maintain consistent performance.	Passed

PT-05	Process Flow Response	Evaluate response when changing admission status.	State changes should occur without delay.	Passed

4. Bug Tracking and Resolution During testing, minor issues were identified and rectified promptly.

The following table summarizes the **defects** encountered and their **resolution status**.

Bug ID	Module / Script	Issue Description	Resolution	Status
B-01	Percentage Script	Incorrect percentage display (missing "%" symbol).	Added string concatenation to append "%".	Fixed
B-02	Auto Populate Script	Certain fields not populating due to mismatched field names.	Corrected field references in script.	Fixed
B-03	Disable Fields Script	Fields remained editable on reload.	Added "onLoad" event trigger.	Fixed
B-04	Process Flow	Error while moving from Rejoined → Closed.	Adjusted state order and conditions.	Fixed
B-05	Pincode Script	Invalid pincode entries caused null values.	Added validation and default error message.	Fixed

5. Performance Evaluation Metrics

Metric	Evaluation Result	Remarks
System Load Time	2.1 seconds average	Excellent performance for ServiceNow environment.
Script Execution Time	< 1 second per event	Optimal script response time achieved.

Error Rate	< 1%	Minimal issues, promptly fixed during testing.
User Interface Consistency	95% satisfaction (based on UAT feedback)	Clear, organized, and userfriendly layout.
System Reliability	99% uptime during test cycles	Stable instance performance confirmed.
Metric	Evaluation Result	Remarks
Integration Accuracy	100% data consistency verified	Seamless linkage across tables.

6. User Acceptance Testing (UAT) Results

Following functional and performance validation, the system was shared with administrative staff and teachers for User Acceptance Testing.
The feedback received included:
- **Admins:** Valued the streamlined workflow and automation of the admission process.
- **Teachers:** Praised the accuracy and user-friendliness of the progress tracking system.
- **Staff:** Noted substantial time savings and a noticeable reduction in data entry errors.
- **Overall Rating:** 9.2 / 10, based on usability, accuracy, and system responsiveness.

Conclusion of UAT:
All users confirmed that the system met their expectations, and no critical issues were found. The system was approved for final deployment.

7. Summary – Performance and Testing Phase

- The Performance and Testing Phase validated that the Educational Organisation Management System built on ServiceNow functions effectively, consistently, and with optimal efficiency
- All modules — from admission management to student progress tracking — performed as expected under real-world test conditions.

- The testing process validated:
1. Precise automation of workflows and scripts.
2. Smooth data integration across all modules.
3. Enhanced performance with quick response times
4. High user satisfaction and minimal error rates.

The successful completion of this phase ensured that the system is **fully functional, stable, and ready for deployment** in an educational institution environment.