

Performance and Testing

Educational Organisation Management using ServiceNow

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Team ID	NM2025TMID06510
Project Name	Educational Organisation Management using ServiceNow

Performance and Testing

Ensuring the **reliability, efficiency, and usability** of the ServiceNow-based Educational Organisation Management System is critical before deployment. This section focuses on the strategies and methodologies to measure **system performance, validate functionality, and ensure user satisfaction**.

Data Applying

servicenow

AllFavoritesHistoryWorkspacesAdmin

Salesforce - Create SAL0001039

Search

SalesforceNew record

Admin NumberSAL0001039

Admin Date2025-09-11

GradeB

Student NameElon

Fathers NameSam

Mother NameLia

Father Cell1234

Mother Cell4321

Submit

servicenow

AllFavoritesHistoryWorkspacesAdmin

Admission - Create SAL0001040

Search

AdmissionNew record

Submit

NewIn progressJoinedRejectedRejoinedClosedCancelled

Admission NumberSAL0001039

Purpose of joinTeacher

Student NameElon

Fathers NameSam

Mother NameLia

Commentsnew admission

Admin Date2025-09-11

GradeB

Fee\$33,330.00

Father Cell1234

Mother Cell4321

Admin StatusJoined

School DetailsAddress

School areaNear Market

SchoolNaresh It

Submit

servicenow

AllFavoritesHistoryWorkspacesAdmin

Students Progress - Create SAL0001041

Search

New SectionNew record

Submit

Admission NumberSAL0001039

Admin NumberSAL0001041

Admin Date2025-09-11

Student NameElon

GradeB

Fathers NameSam

Mother NameLia

Father Cell1234

Mother Cell4321

student progress

Science89

Hindi90

Telugu88

Social94

Maths88

English78

Total527

ResultPass

Percentage87.83333333333333%

Submit

1. Performance Testing

Purpose:

Performance testing evaluates how the system behaves under various load conditions, ensuring it can handle real-time operations without degradation.

Key Objectives:

- Verify the system's responsiveness under normal and peak usage.
- Ensure quick access to student records, dashboards, and reports.
- Identify and eliminate performance bottlenecks in workflows and database queries.

Performance Testing Metrics:

1. **Response Time:**

- Average time to retrieve student records, process admissions, or generate reports.
- Target: ≤ 2 seconds for most operations.

2. **Throughput:**

- Number of transactions the system can handle per minute (e.g., admissions, grade uploads).
- Ensures scalability during peak periods like enrollment or exam results.

3. **Load Capacity:**

- Maximum number of concurrent users (students, teachers, admins) the system can support without failure.

4. **Resource Utilization:**

- CPU, memory, and network usage under load conditions to ensure efficient system operation.

Testing Tools:

- ServiceNow Performance Analytics (for platform-specific metrics)
- JMeter or LoadRunner (for simulating concurrent users and stress testing)

Table Data

servicenow

Table - Salesforce

Search

Table - Salesforce

A table is a collection of records in the database. Each record corresponds to a row in a table, and each field on a record corresponds to a column on that table. Applications use tables and records to manage data and processes. [Start Info](#)

Label:

Application:

Name:

Remote Table:

Columns

Controls

Application Access

Table Columns

Column label

Search

1 to 15 of 15

New

Dictionary Entries

Column label	Type	Reference	Max length	Default value	Display
Admin Date	Date	(empty)	40		false
Admin Number	String	(empty)	40	<code>javascript:current.getTableName();</code>	true
Class	System Class Name	(empty)	80	<code>javascript:current.getTableName();</code>	false
Created	Date/Time	(empty)	40		false
Created by	String	(empty)	40		false
Father Cell	String	(empty)	40		false
Fathers Name	String	(empty)	80		false
Grade	Choice	(empty)	40		false
Mother Cell	String	(empty)	40		false
Mother Name	String	(empty)	80		false
Student Name	String	(empty)	80		false
Sys ID	Sys ID (GUID)	(empty)	32		false
Updated	Date/Time	(empty)	41		false
Updated by	String	(empty)	41		false
Update	Integer	(empty)	41		false
Insert a new row...					

Delete Update Delete All Records

Related Links

Form Builder

Design Form

Lookup Entry

Lookup List

Show Form

Show List

Show Schema Map

Add to Service Catalog

Run Query Log

Export CSV File

servicenow

Table - Admission

Search

Table - Admission

A table is a collection of records in the database. Each record corresponds to a row in a table, and each field on a record corresponds to a column on that table. Applications use tables and records to manage data and processes. [Start Info](#)

Label:

Application:

Name:

Remote Table:

Extends table:

Columns

Controls

Application Access

Table Columns

Column label

Search

1 to 20 of 30

New

Dictionary Entries

Column label	Type	Reference	Max length	Default value	Display
Admin Date	Date	(empty)	40		false
Admin Number	String	(empty)	40	<code>javascript:current.getTableName();</code>	true
Admin Status	Choice	(empty)	40		false
Admission Number	Reference	Salesforce	32		false
Area	String	(empty)	40		false
City	String	(empty)	40		false
Class	System Class Name	(empty)	80	<code>javascript:current.getTableName();</code>	false
Comments	String (Full UTF-8)	(empty)	255		false
Created	Date/Time	(empty)	40		false
Created by	String	(empty)	40		false
District	String	(empty)	40		false
Father Cell	String	(empty)	40		false
Fathers Name	String	(empty)	80		false
Fee	Price	(empty)	20		false
Grade	Choice	(empty)	40		false
House No	String	(empty)	40		false
Mandal	String	(empty)	40		false
Mother Cell	String	(empty)	40		false
Mother Name	String	(empty)	80		false
Records	Choice	(empty)	40		false
Insert a new row...					

Delete Update Delete All Records

Related Links

Form Builder

servicenow

Table - Students Progress

Search

Table - Students Progress

A table is a collection of records in the database. Each record corresponds to a row in a table, and each field on a record corresponds to a column on that table. Applications use tables and records to manage data and processes. [Start Info](#)

Label:

Application:

Name:

Remote Table:

Extends table:

Columns

Controls

Application Access

Table Columns

Column label

Search

1 to 20 of 26

New

Dictionary Entries

Column label	Type	Reference	Max length	Default value	Display
Admin Date	Date	(empty)	40		false
Admin Number	String	(empty)	40	<code>javascript:current.getTableName();</code>	true
Admission Number	Reference	Salesforce	32		false
Class	System Class Name	(empty)	80	<code>javascript:current.getTableName();</code>	false
Created	Date/Time	(empty)	40		false
Created by	String	(empty)	40		false
English	String	(empty)	100		false
Father Cell	String	(empty)	40		false
Fathers Name	String	(empty)	80		false
Grade	Choice	(empty)	40		false
Hindi	String	(empty)	100		false
Maths	String	(empty)	100		false
Mother Cell	String	(empty)	40		false
Mother Name	String	(empty)	80		false
Percentage	String	(empty)	100		false
Result	String	(empty)	100		false
Science	String	(empty)	100		false
Social	String	(empty)	100		false
Student Name	String	(empty)	80		false
Sys ID	Sys ID (GUID)	(empty)	32		false
Insert a new row...					

Delete Update Delete All Records

2. Functional Testing

Purpose:

Functional testing validates that the system meets its specifications and works as expected for end users.

Key Functional Areas to Test:

1. Student Admissions and Enrollment:

- Form submission, validation, approval workflows, and automated notifications.

2. Database Operations:

- Creation, update, deletion, and retrieval of student and faculty records.

3. Academic Tracking:

- Attendance, grade entry, performance analytics, and report generation.

4. Workflow Automation:

- Approvals, notifications, escalations, and task assignments.

5. Security and Access Control:

- Role-based access for students, teachers, and administrators.
- Proper authentication, authorization, and data confidentiality.

Testing Approach:

- **Unit Testing:** Verify individual scripts, forms, and workflows.
- **Integration Testing:** Ensure seamless interaction between modules (admissions, performance, reporting).
- **User Acceptance Testing (UAT):** Real users (students, teachers, admins) validate usability, workflows, and system output.

3. Usability Testing

Purpose:

To ensure that the system is user-friendly and intuitive for all stakeholders.

Focus Areas:

- Easy navigation between modules.

- Clarity of dashboards, forms, and reports.
- Minimization of steps required for critical tasks (admission, grade submission, report generation).
- Accessibility on multiple devices (desktop, tablet, mobile).

Methods:

- Conducting surveys and feedback sessions with target users.
 - Observing users performing typical tasks and identifying pain points.
-

4. Regression Testing

Purpose:

To ensure that updates, bug fixes, or new features do not break existing functionality.

Approach:

- Maintain automated test scripts for core workflows.
 - Periodically run regression tests after each system update or customization.
-

5. Performance Optimization Strategies

- **Database Indexing:** Improve speed of queries for large student datasets.
 - **Caching Frequently Used Data:** Reduce server load for recurring requests (e.g., dashboard metrics).
 - **Workflow Optimization:** Streamline approval flows to reduce processing time.
 - **Load Balancing:** Ensure the system can scale horizontally during peak usage.
-

6. Reporting and Monitoring

- **Real-Time Dashboards:** Track system health, response times, and user activity.
- **Alerts for Failures or Delays:** Automated notifications for slow workflows or failed processes.
- **Periodic Performance Reviews:** Scheduled evaluation of system logs and analytics to identify and resolve bottlenecks.

Client Scripts

servicenow

All Favorites History Workspaces Admin

Client Script - Disable Fields

Search

Update Delete

Client Script - Disable Fields

New client scripts are run in strict mode, with direct DOM access disabled. Access to jQuery, prototype and the window object are likewise disabled. To disable this on a per-script basis, configure this form and add the "isolate script" field. To disable this feature for all new globally-scoped client scripts set the system property "globe.script.block.client.global" to false.

Name

Disable Fields

Application

Global

Table

Students Progress [u_students_progress]

Active

☒

UI Type

All

Inherited

☐

Type

onLoad

Global

☒

Description

Messages

Script

```
1 function onLoad() {
2
3 //Type appropriate comment here, and begin script below
4
5 g_form.setDisabled("u_total",true);
6
7 g_form.setDisabled("u_percentage",true);
8
9 g_form.setDisabled("u_result",true);
10
11 }
```

Isolate script

☒

Update

Delete

Related Links

Run Point Scan

Update Versions

Recorded at Search

Actions on selected rows...

New

Name	Recorded at	State	Source	Reverted from
sys_script_client_6d916293833c36106ebc7790ead3ae	2025-10-30 07:45:43	Current	Update Set: Default	(empty)
sys_script_client_6d916293833c36106ebc7790ead3ae	2025-10-30 06:56:02	Previous	Update Set: Default	(empty)

1 to 2 of 2

servicenow

All Favorites History Workspaces Admin

Client Script - Pincode Update

Search

Update Delete

Client Script - Pincode Update

New client scripts are run in strict mode, with direct DOM access disabled. Access to jQuery, prototype and the window object are likewise disabled. To disable this on a per-script basis, configure this form and add the "isolate script" field. To disable this feature for all new globally-scoped client scripts set the system property "globe.script.block.client.global" to false.

Name

Pincode Update

Application

Global

Table

Admission [u_admission]

Active

☒

UI Type

Desktop

Inherited

☐

Type

onChange

Global

☒

Field name

Pincode

Description

Messages

Script

```
1 function onChange(control, oldValue, newValue, isLoading, isTemplate) {
2
3 if (isLoading || newValue === '') {
4 return;
5 }
6
7
8
9 var a = g_form.getValue("u_pincode");
10
11 if(a == "569355a")
12 {
13 {
14 g_form.setValue("u_mendel", "kadthal");
15
16 g_form.setValue("u_city", "kadthal");
17
18 g_form.setValue("u_district", "kangasreddy");
19
20
21
22
23 }
```

Isolate script

☒

Update

Delete

Related Links

Run Point Scan

Update Versions

Recorded at Search

Actions on selected rows...

New

Name	Recorded at	State	Source	Reverted from
------	-------------	-------	--------	---------------

servicenow

All Favorites History Workspaces Admin

Client Script - Auto populate

Search

Update Delete

Client Script - Auto populate

New client scripts are run in strict mode, with direct DOM access disabled. Access to jQuery, prototype and the window object are likewise disabled. To disable this on a per-script basis, configure this form and add the "isolate script" field. To disable this feature for all new globally-scoped client scripts set the system property "globe.script.block.client.global" to false.

Name

Auto populate

Application

Global

Table

Admission [u_admission]

Active

☒

UI Type

Mobile / Service Portal

Inherited

☐

Type

onChange

Global

☒

Field name

Admission Number

Description

Messages

Script

```
1 function onChange(control, oldValue, newValue, isLoading, isTemplate) {
2
3 if (isLoading || newValue === '') {
4 return;
5 }
6
7
8
9
10 //Type appropriate comment here, and begin script below
11
12 var a = g_form.getReference("u_admission_number");
13
14 g_form.setValue("u_admission_data",a.u_admission_data);
15
16 g_form.setValue("u_grade",a.u_grade);
17
18 g_form.setValue("u_student_name",a.u_student_name);
19
20 g_form.setValue("u_father_name",a.u_father_name);
21
22 g_form.setValue("u_mother_name",a.u_mother_name);
23 }
```

Isolate script

☒

Update

Delete

Related Links

Run Point Scan

Update Versions

Recorded at Search

Actions on selected rows...

New

Name	Recorded at	State	Source	Reverted from
------	-------------	-------	--------	---------------

servicenow

All Favorites History Workspaces Admin

Client Script - Percentage

Search

Update Delete

New client-scripts are run in strict mode, with direct DOM access disabled. Access to jQuery, prototype and the window object are likewise disabled. To disable this on a per-script basis, configure this form and add the "Isolate script" field. To disable this feature for all new globally-scoped client-side scripts set the system property "glide.script.block.client.globals" to false.

NamePercentage

TableStudents Progress [u_students_progress]

UI TypeAll

TypeonChange

Field nameTotal

ApplicationGlobal

Active☒

Inherited☐

Global☒

Description

Messages

Script

```
1 function onChange(control, oldValue, newValue, isLoading, isTemplate) {
2
3   if (isLoading || newValue === '') {
4     return;
5   }
6
7
8
9   //Type appropriate comment here, and begin script below
10
11   var Total = g_form.getValue('u_total');
12   var Percentage = (Total/100)*100;
13   g_form.setValue('u_percentage',Percentage+'%');
14 }
15
16
17
18
19
20
```

Isolate script☒

Update Delete

Related Links

Run Point Scan

Update Versions

Recorded at Search

Actions on selected rows New

servicenow

All Favorites History Workspaces Admin

Client Script - Result

Search

Update Delete

New client-scripts are run in strict mode, with direct DOM access disabled. Access to jQuery, prototype and the window object are likewise disabled. To disable this on a per-script basis, configure this form and add the "Isolate script" field. To disable this feature for all new globally-scoped client-side scripts set the system property "glide.script.block.client.globals" to false.

NameResult

TableStudents Progress [u_students_progress]

UI TypeAll

TypeonChange

Field namePercentage

ApplicationGlobal

Active☒

Inherited☐

Global☒

Description

Messages

Script

```
1 function onChange(control, oldValue, newValue, isLoading, isTemplate) {
2
3   if (isLoading || newValue === '') {
4     return;
5   }
6
7
8
9   //Type appropriate comment here, and begin script below
10
11   if(newValue) {
12     var a = parseInt(g_form.getValue('u_percentage')); // Convert the value to an integer for comparison
13     if(a >= 0 && a <= 99){
14       g_form.setValue('u_result','Fail');
15     } else if(a >= 100 && a <= 100) {
16       g_form.setValue('u_result','Pass');
17     } else {
18     }
19   }
20 }
21
22
23
24
25
26
```

Isolate script☒

Update Delete

Related Links

Run Point Scan

Update Versions

Recorded at Search

Actions on selected rows New

servicenow

All Favorites History Workspaces Admin

Client Script - Total Update

Search

Update Delete

New client-scripts are run in strict mode, with direct DOM access disabled. Access to jQuery, prototype and the window object are likewise disabled. To disable this on a per-script basis, configure this form and add the "Isolate script" field. To disable this feature for all new globally-scoped client-side scripts set the system property "glide.script.block.client.globals" to false.

NameTotal Update

TableStudents Progress [u_students_progress]

UI TypeAll

TypeonChange

Field nameSocial

ApplicationGlobal

Active☒

Inherited☐

Global☒

Description

Messages

Script

```
1 function onChange(control, oldValue, newValue, isLoading, isTemplate) {
2
3   if (isLoading || newValue === '') {
4     return;
5   }
6
7
8
9   //Type appropriate comment here, and begin script below
10
11   if (newValue){
12     var a = parseInt(g_form.getValue('u_telugu'));
13     var b = parseInt(g_form.getValue('u_hindi'));
14     var c = parseInt(g_form.getValue('u_english'));
15     var d = parseInt(g_form.getValue('u_marathi'));
16     var e = parseInt(g_form.getValue('u_science'));
17   }
18 }
19
20
21
22
23
24
```

Isolate script☒

Update Delete

Related Links

Run Point Scan

Update Versions

Recorded at Search

Actions on selected rows New

7. Conclusion

Comprehensive **performance and testing** ensures the ServiceNow-based Education Management System is **robust, scalable, and user-friendly**. By combining functional, performance, usability, and regression testing, the system can reliably support students, teachers, and administrators, delivering accurate real-time insights while maintaining operational efficiency.