

Phase 10: Quality Assurance Testing & Demo

Quality Assurance (QA) Testing ensures that all implemented features in the Smart Parking Salesforce application function as expected. The testing phase validates triggers, flows, validation rules, record updates, and automated processes using structured test cases.

Test Case 1: Reservation Creation reduces Parking Lot Availability

Use Case / Scenario:

Whenever a Reservation is created for a Parking Lot, the available spots in that lot must decrease automatically by one. This functionality is handled by an Apex Trigger.

Test Steps (with input):

1. Navigate to **Parking Lot** tab and click **New**.
2. Enter the following details:
 - Lot Name: *Central Plaza Lot*
 - City: *Amravati*
 - Available Spots: *10*
3. Save the Parking Lot record.
4. Navigate to **Reservation** tab and create a new Reservation with this Parking Lot selected.

Expected Result:

- The Reservation should be created successfully.
- The **Available Spots** on the Parking Lot should decrease from 10 to 9.

Actual Result (with Screenshot):

The screenshot shows the 'Parking Lot' details for 'Central Plaza Lot' (LOT-0009). The page is divided into a 'Details' section on the left and an 'Activity' section on the right. The 'Details' section lists various attributes of the parking lot, including its ID, name, location, and capacity. The 'Activity' section shows a list of activities, currently empty, with filters for 'All time', 'All activities', and 'All types'.

Related	Details
Lot ID	LOT-0009
Lot Name	Central Plaza Lot
City	Amravati
State	Maharashtra
Pin Code	444804
Total Slots	10
Available Spots	10
Price Per Hour	₹20.00
Status	Active
Notes	
Manager__c	

Owner: Utkarsh Deshmukh

Activity filters: All time, All activities, All types. Refresh, Expand All, View All.

Upcoming & Overdue: No activities to show. Get started by sending an email, scheduling a task, and more.

No past activity. Past meetings and tasks marked as done show up here.

A parking Lot LOT-0009 is created with 10 spots

The screenshot shows the 'Reservation' details for 'RES-0021'. The page is divided into a 'Details' section on the left and an 'Activity' section on the right. The 'Details' section lists various attributes of the reservation, including its number, contact, parking lot, date, time, and amount. The 'Activity' section shows a list of activities, currently empty, with filters for 'All time', 'All activities', and 'All types'.

Reservation	Details
Reservation Number	RES-0021
Contact	Ayush Dongardive
Parking Lot	LOT-0009
Reservation Date	10/1/2025
Start Time	10/1/2025, 7:00 PM
End Time	10/1/2025, 8:00 PM
Duration (Hours)	1.00
Total Amount	₹20.00
Status	Reserved
Payment Status	

Owner: Utkarsh Deshmukh

Activity filters: All time, All activities, All types. Refresh, Expand All, View All.

Upcoming & Overdue: No activities to show. Get started by sending an email, scheduling a task, and more.

No past activity. Past meetings and tasks marked as done show up here.

Created By: Utkarsh Deshmukh, 10/1/2025, 6:25 AM

Last Modified By: Utkarsh Deshmukh, 10/1/2025, 6:25 AM

A reservation is created corresponding to the parking lot

ParkVista Home Reservations Bookings **Parking Lots** Contacts Parking_Spots Dashboards Reports vehicles Leads

Parking Lot Central Plaza Lot New Contact Edit New Opportunity

Related Details

Lot ID	LOT-0009	Owner	Utkarsh Deshmukh
Lot Name	Central Plaza Lot		
City	Amravati		
State	Maharashtra		
Pin Code	444804		
Total Slots	10		
Available Spots	9		
Price Per Hour	₹20.00		
Status	Active		
Notes			
Manager__c			

Activity

Filters: All time · All activities · All types

Refresh · Expand All · View All

Upcoming & Overdue

No activities to show.

Get started by sending an email, scheduling a task, and more.

No past activity. Past meetings and tasks marked as done show up here.

The available spots in the LOT-0009 is reduced by 1

Test Case 2: Validation Rule – Start Date cannot be after End Date

Use Case / Scenario:

The system should not allow users to create a Reservation where the Start Date is later than the End Date. A validation rule enforces this logic.

Test Steps (with input):

1. Navigate to **Reservation** tab and click **New**.
2. Enter the following details:
 - Start Date: *02/10/2025*
 - End Date: *01/10/2025*
 - Parking Lot: *Central Plaza Lot*

3. Click **Save**.

Expected Result:

- The Reservation should not be saved.
- An error message should be displayed: *“End Date must be greater than Start Date.”*

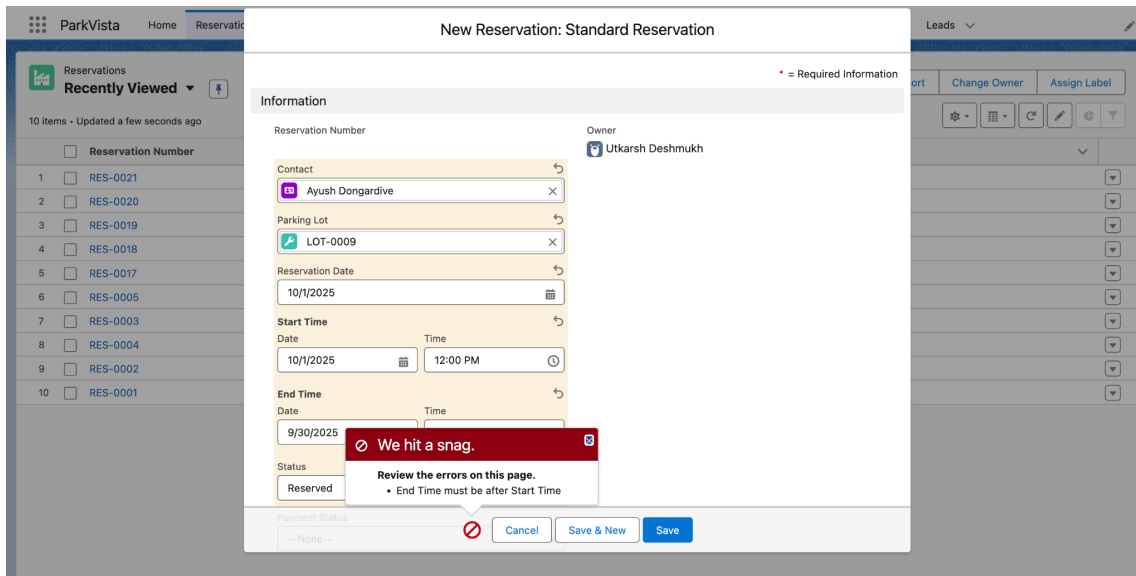
Actual Result (with Screenshot):

The screenshot shows the 'New Reservation: Standard Reservation' form in the ParkVista application. The form is titled 'New Reservation: Standard Reservation' and includes a legend indicating that a red asterisk (*) denotes required information. The form fields are as follows:

- Reservation Number:** (Empty)
- Contact:** Ayush Dongardive
- Parking Lot:** LOT-0009
- Reservation Date:** 10/1/2025
- Start Time:** Date: 10/1/2025, Time: 12:00 PM
- End Time:** Date: 9/30/2025, Time: 12:00 PM
- Status:** Reserved
- Payment Status:** --None--

The form is set against a background of a sidebar with a 'Reservations' list and a 'Leads' section. The 'Reservations' list shows 10 items, and the 'Leads' section shows a list of leads with various action buttons.

Screenshot of Reservation form with incorrect dates.



Screenshot of validation error message.

Test Case 3: Reservation Confirmation Email

Use Case / Scenario:

Once a Reservation is confirmed, the system should send an automated confirmation email to the Contact's registered email address. This is handled using an Apex Queueable class.

Test Steps (with input):

1. Navigate to **Reservation** tab and create a new Reservation for a Contact that has a valid email.
2. Save the Reservation.

Expected Result:

- The Contact should receive an email with the subject line: *“Reservation Confirmed”*.

Actual Result (with Screenshot):

The screenshot shows the ParkVista interface with the 'Reservations' tab selected. The reservation details for RES-0022 are displayed. The reservation was created by Utkarsh Deshmukh on 10/1/2025 at 7:15 AM. The reservation is for a contact named Ayush Dongardive, parking lot LOT-0009, on 10/1/2025, from 12:00 PM to 1:15 PM, with a total amount of ₹25.00. The status is 'Reserved' and the payment status is 'Paid'. The reservation was last modified by Utkarsh Deshmukh on 10/1/2025 at 7:15 AM.

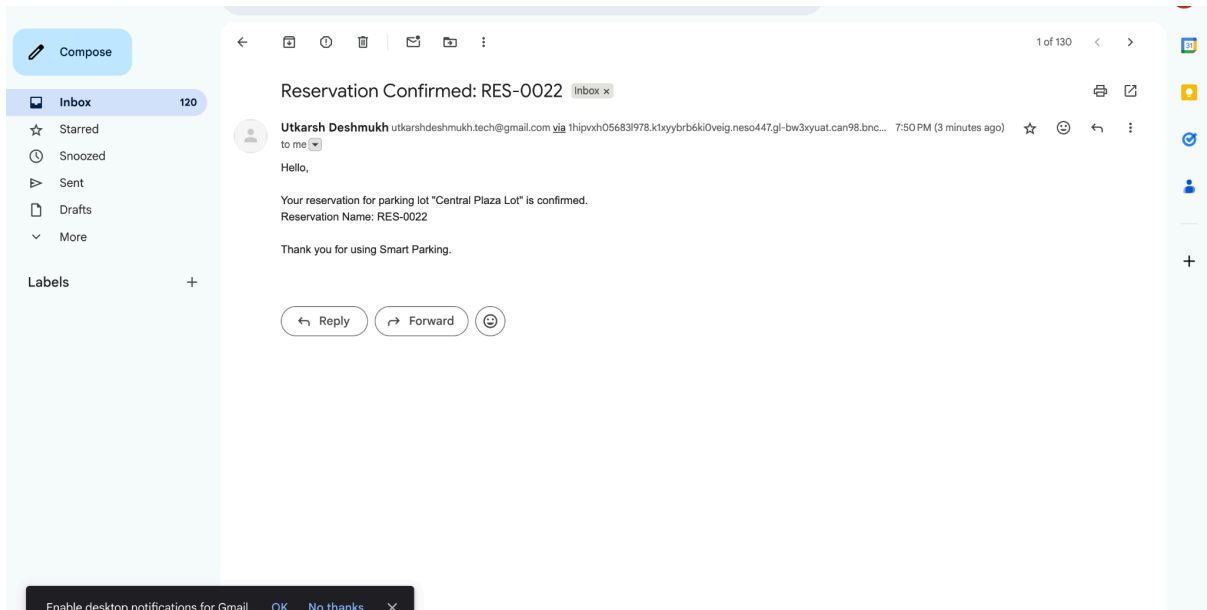
Field	Value
Reservation Number	RES-0022
Contact	Ayush Dongardive
Parking Lot	LOT-0009
Reservation Date	10/1/2025
Start Time	10/1/2025, 12:00 PM
End Time	10/1/2025, 1:15 PM
Duration (Hours)	1.25
Total Amount	₹25.00
Status	Reserved
Payment Status	Paid
Created By	Utkarsh Deshmukh, 10/1/2025, 7:15 AM
Last Modified By	Utkarsh Deshmukh, 10/1/2025, 7:15 AM

The reservation is created by contact whose mail id is there in contact page screenshot

The screenshot shows the ParkVista interface with the 'Contacts' tab selected. A list of 7 contacts is displayed, including their names, account names, phone numbers, and email addresses. The contact 'Ayush Dongardive' (Contact no 2) is highlighted, with email address arcadeuser1232@gmail.com.

	Name	Account Name	Phone	Email	Con...
1	Rahul Deshmukh	Customer Account		deshmukhutkarsh1232@gmail.com	utk
2	Ayush Dongardive	Customer Account		arcadeuser1232@gmail.com	utk
3	RAM D	Customer Account	(862) 398-6015	utkarshdeshmukh.tech@gmail.com	utk
4	Test bantu	test bantu			utk
5	Test User		(785) 241-6200		utk
6	Yogesh zawar	Yogesh			utk
7	Gayatri Sharma	Gayatri Account			utk

Contact no 2 with mail id arcadeuser1232@gmail.com created a reservation



The Automated Mail was sent to User

Test Case 4: Flow on Booking Object validates Availability

Use Case / Scenario:

When a Booking is created, the system must check if the selected Parking Lot has available spots. If no spots are available, the Booking should not be created. This is implemented via a Record-Triggered Flow.

Test Steps (with input):

1. Navigate to **Parking Lot** tab and set **Available Spots = 0** for *Central Plaza Lot*.
2. Navigate to **Booking** tab and attempt to create a Booking for that lot.

Expected Result:

- The system should block the booking creation.

- An error message should appear: *“No spots available in the selected lot.”*

Actual Result (with Screenshot):

Parking Lot Details:

Field	Value
Lot ID	LOT-0009
Lot Name	Central Plaza Lot
City	Amravati
State	Maharashtra
Pin Code	444804
Total Slots	10
Available Spots	0
Price Per Hour	₹20.00
Status	Active

Activity: No activities to show. Get started by sending an email, scheduling a task, and more.

Screenshot of Parking Lot showing 0 spots available.

New Booking: Online Booking

Information

Booking Name: [Empty] Owner: Utkarsh Deshmukh

*Email: deshmkhutkarsh1232@gmail.com

Contact: Rahul Deshmukh

Parking Lot: LOT-0009

Start Time: Date 10/1/2025 Time 12:30 PM

End time: Date 10/1/2025 Time [Empty]

Status: Requested

Error Message: We hit a snag. Review the errors on this page. • “No spots available in the selected lot.”

Buttons: Cancel, Save & New, Save

Screenshot of failed booking attempt with error message.

Demo Video Link-

 PARKVISTASALESFORCECRM.mov

Project Conclusion

The Smart Parking Allotment System successfully automates parking space management, reservations, and customer interactions. The platform allows administrators to manage multiple parking lots, track available spots, and oversee reservations efficiently. Customers can explore parking lots, book available spots, and receive automated confirmations via email.

Key features implemented include **custom objects** (Parking Lot, Reservation), **triggers and Apex classes** for automated spot allocation, **validation rules** to ensure booking accuracy, and **record-triggered flows** to automate lead conversion and availability checks. The system also integrates **role hierarchy** and **profiles** to manage access for Super Admin, Regional Managers, and Lot Managers, ensuring secure operations.

Through **quality assurance testing**, all functionalities were validated with detailed test cases, ensuring the system performs reliably under real-world scenarios. This project demonstrates the application of Salesforce declarative and programmatic tools to build a **scalable, user-friendly, and automated parking management solution** that enhances operational efficiency and customer experience.