



Phase 5 Apex Programming

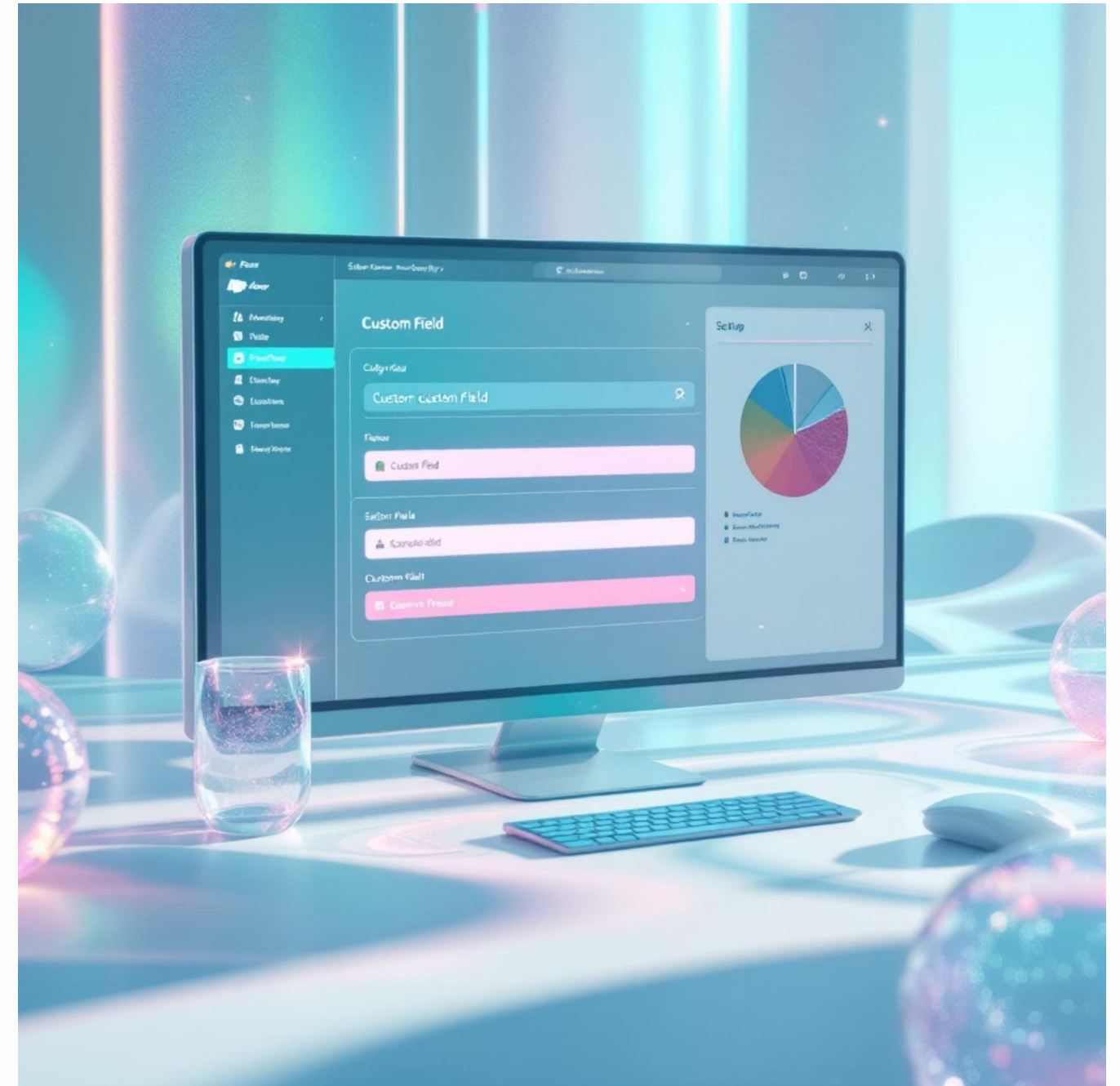
Comprehensive documentation of the Apex Programming phase for the Salon Management System project, detailing all development tasks, deployment processes, and testing procedures completed successfully.

Data Model Enhancement

New Formula Field Creation

A critical **End Time** formula field was implemented on the Appointment object to calculate appointment durations automatically.

- Navigation path: Setup > Object Manager > Appointment > Fields & Relationships
- Return type: Date/Time value
- Calculation: Adds Duration_Minutes__c to Appointment_Date_Time__c





Search Setup



Setup

Home

Object Manager

SETUP > OBJECT MANAGER

Appointment

Details

Fields & Relationships

Page Layouts

Lightning Record Pages

Buttons, Links, and Actions

Compact Layouts

Field Sets

Object Limits

Record Types

Related Lookup Filters

Search Layouts

List View Button Layout

Restriction Rules

Scoping Rules

Object Access

Triggers

Flow Triggers

Appointment Custom Field

End Time

[Back to Appointment](#)

[Help for this Page](#)

Custom Field Definition Detail

Edit

Set Field-Level Security

View Field Accessibility

Where is this used?

Field Information

Field Label	End Time	Object Name	Appointment
Field Name	End_Time		
API Name	End_Time__c		
Description			
Help Text			
Data Owner			
Field Usage			
Data Sensitivity Level			
Compliance Categorization			
Created By	Ayush Kumar Dewan, 20/09/2025, 8:28 am		Modified By Ayush Kumar Dewan, 20/09/2025, 8:28 am

Formula Options

Data Type	Formula
	Appointment_Date_Time__c + (Service__r.Duration_Minutes__c / 1440)

Apex Development Architecture

Handler Class

AppointmentTriggerHandler.cls

Contains core business logic with checkForOverlaps method using SOQL queries and time slot comparison algorithms

Trigger Implementation

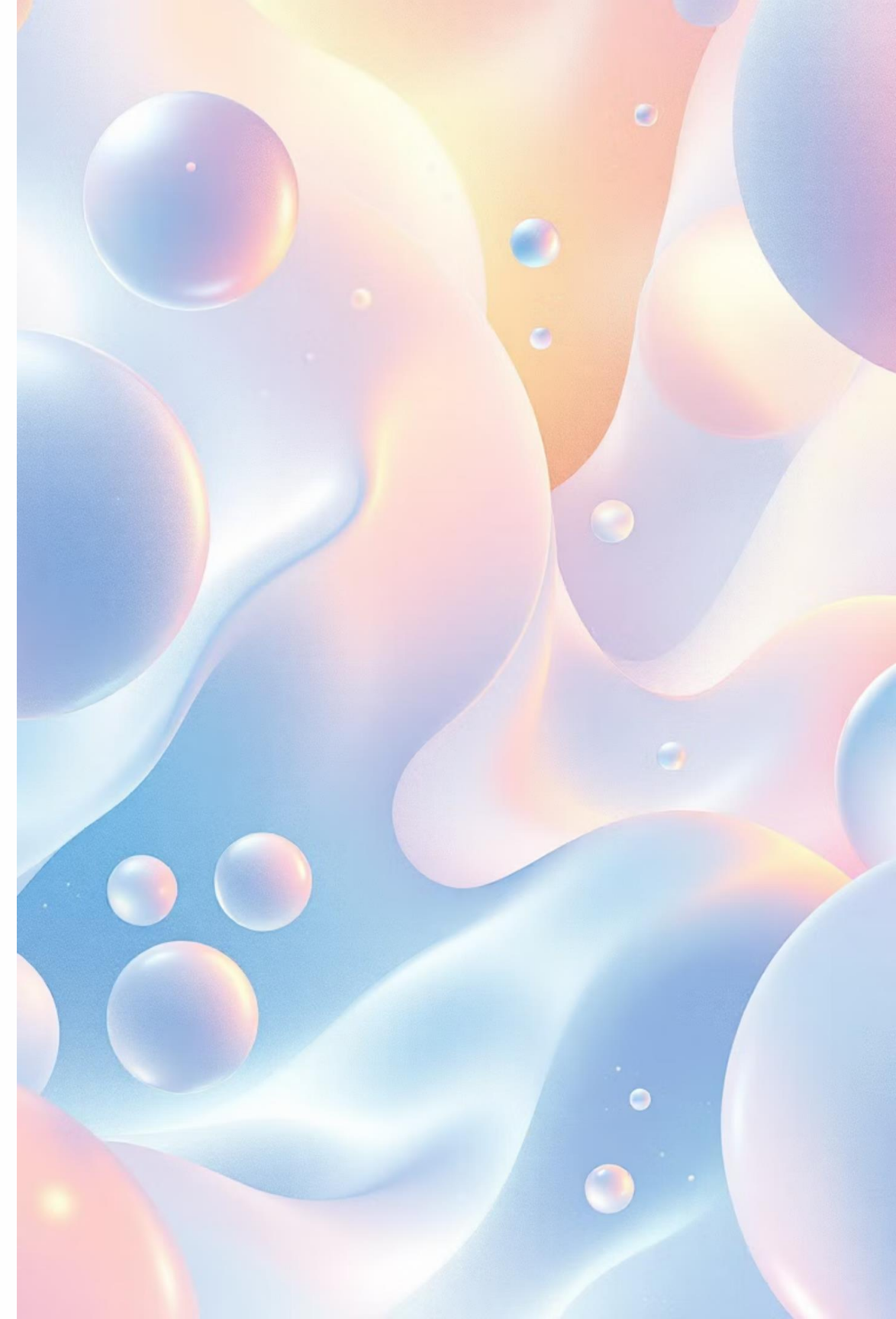
AppointmentTrigger.trigger

Fires on before insert events, calling handler methods to prevent overlapping appointments

Test Coverage

AppointmentTriggerTest.cls

Comprehensive test scenarios with try/catch blocks validating error handling and business rules



504

EXPLORER

SOURCE CONTROL: REPOS...
SOURCE CONTROL: CHAN...
SALON-MANAGEMENT-SY...
husky
.sf
.sfdx
.vscode
config
force-app\...
applications
approvalPr...
aura
classes
Appointment... U
Appointment... U
Appointment... U
Appointment... U
ContactSe... U
OUTLINE
TIMELINE
S... Auto
docs: Fi... main
Update README.md...
Initial commit Ayush ...
RUNNING TASKS

Salon-Management-System

AppointmentTriggerHandler.cls U
AppointmentTrigger.trigger
AppointmentTriggerHandler.cls-meta.xml U
AppointmentTrigg

force-app > main > default > classes > AppointmentTriggerHandler.cls > AppointmentTriggerHandler > checkForOverlaps(List<Appointment__c>) : void

```
1
2 public with sharing class AppointmentTriggerHandler {
3
4     /**
5      * @param newAppointments The list of new appointments the user is trying to create.
6      */
7
8     public static void checkForOverlaps(List<Appointment__c> newAppointments) {}
9
10
11     Set<Id> stylistIds = new Set<Id>();
12     for (Appointment__c newAppt : newAppointments) {
13
14         if (newAppt.Stylist__c != null) {
15             stylistIds.add(newAppt.Stylist__c);
16         }
17     }
18
19     if (stylistIds.isEmpty()) {
20         return;
21     }
22
23     Map<Id, List<Appointment__c>> existingAppointmentsByStylist = new Map<Id, List<Appointment__c>>();
24     for(Id stylistId : stylistIds){
25         existingAppointmentsByStylist.put(stylistId, new List<Appointment__c>());
26     }
27
28
29
30
31     for (Appointment__c existingAppt : [
32         SELECT Id, Stylist__c, Appointment_Date_Time__c, End_Time__c
```

Activate Windows
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504

EXPLORER

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rch.html

JS clientSearch.js<=>clientSearch.js-meta.xml<=>AppointmentTrigger.trigger-meta.xmlAppointmentTriggerTest.cls U x<=>AppointmentTriggerTest > testOverlapPrevention() : void

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@isTest

Run All Tests | Debug All Tests

private class AppointmentTriggerTest {

@isTest

Run Test | Debug Test

static void testOverlapPrevention() {

Contact testClient = new Contact(LastName = 'Test Client');

insert testClient;

Profile p = [SELECT Id FROM Profile WHERE Name = 'Standard User' LIMIT 1];

User testStylist = new User(

Alias = 'stylist',

Email = 'stylist@testorg.com',

EmailEncodingKey = 'UTF-8',

LastName = 'Stylist',

LanguageLocaleKey = 'en_US',

LocaleSidKey = 'en_US',

ProfileId = p.Id,

TimeZoneSidKey = 'America/Los_Angeles',

UserName = 'stylist.test@testorg.com' + System.currentTimeMillis()

);

insert testStylist;

Service__c testService = new Service__c(

Service_Name__c = 'Men\'s Haircut',

Price__c = 500,

Duration_Minutes__c = 60

);

insert testService;

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Apex

Prettier

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504

EXPLORER

SOURCE CONTROL: REPOS...
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SALO...
husky
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Appointment... U
Appointment... U
ContactSe... U
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Initial commit Ayush ...
RUNNING TASKS

clientSearch.js-meta.xml

AppointmentTrigger.trigger-meta.xml

AppointmentTriggerTest.cls U

ContactSearchController.cls U X

force-app > main > default > classes > ContactSearchController.cls > ContactSearchController > findContacts(String) : List<Contact>

```
1 public with sharing class ContactSearchController {  
2     @AuraEnabled(cacheable=true)  
3     public static List<Contact> findContacts(String searchKey) {  
4         if (String.isBlank(searchKey)) {  
5             return new List<Contact>();  
6         }  
7         String key = searchKey + '%';  
8         return [  
9             SELECT Id, Name, Phone, Email  
10            FROM Contact  
11            WHERE Name LIKE :key  
12            LIMIT 10  
13        ];  
14    }  
15 }
```

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Apex

Prettier

Activate Windows

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9/25/2025

19

504

EXPLORER

SOURCE CONTROL: REPOS...
SOURCE CONTROL: CHAN...
SALON-MANAGEMENT-SY...
force-app\...
profiles
roles
settings
sharingRules
staticresources
tabs
triggers
AppointmentTr...
AppointmentTr...
scripts
.forceignore
.gitignore
.prettierrc
OUTLINE
TIMELINE
S... Auto
docs: Fi... main
Update README.md...
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RUNNING TASKS

Salon-Management-System

AppointmentTrigger.trigger X
AppointmentTriggerHandler.cls-meta.xml U
AppointmentTriggerTest.cls-meta.xml U
clientSearch.

force-app > main > default > triggers > AppointmentTrigger.trigger > AppointmentTrigger

```
1
2 trigger AppointmentTrigger on Appointment__c (before insert) {
3
4     if (Trigger.isBefore && Trigger.isInsert) {
5         AppointmentTriggerHandler.checkForOverlaps(Trigger.new);
6     }
7
8
9
10
11
```

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Windows taskbar: Type here to search, 82, 19, 10:55 AM 9/25/2025

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Core Logic Implementation

checkForOverlaps Method Functionality

01

SOQL Query Execution

Retrieves existing appointments for relevant stylists within the specified time range

02

Time Slot Comparison

Loops through existing appointments to identify potential scheduling conflicts

03

Error Prevention

Uses `addError()` method to block overlapping records with descriptive error messages



Test Class Development

Comprehensive Test Coverage

The **AppointmentTriggerTest.cls** ensures robust validation of the appointment overlap prevention system.

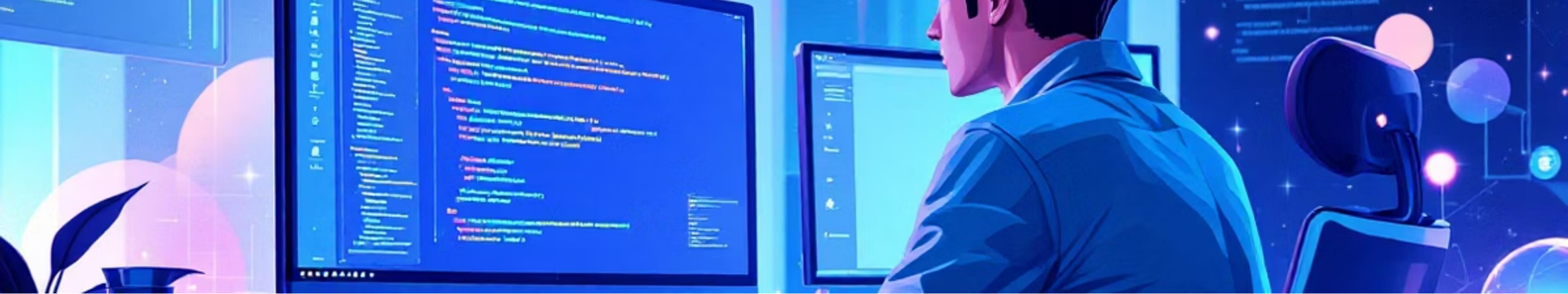
Test Data Creation

- Contact records for customers
- User records for stylists
- Service records with duration specifications

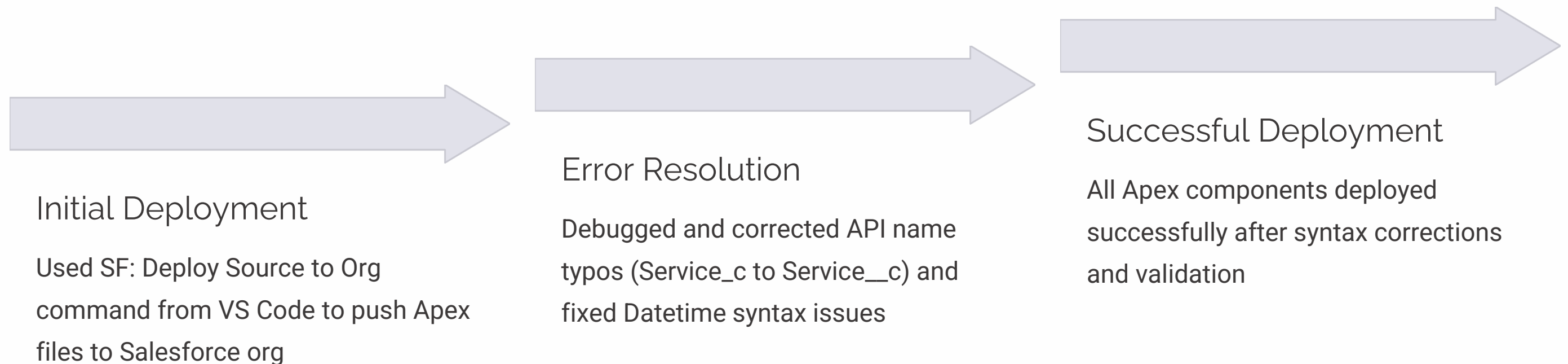
Validation Scenarios

- Successful insertion of valid appointments
- Proper blocking of overlapping time slots
- Error message verification through try/catch blocks





Deployment & Debugging Process





Flow Integration Enhancement

Fault Path Implementation

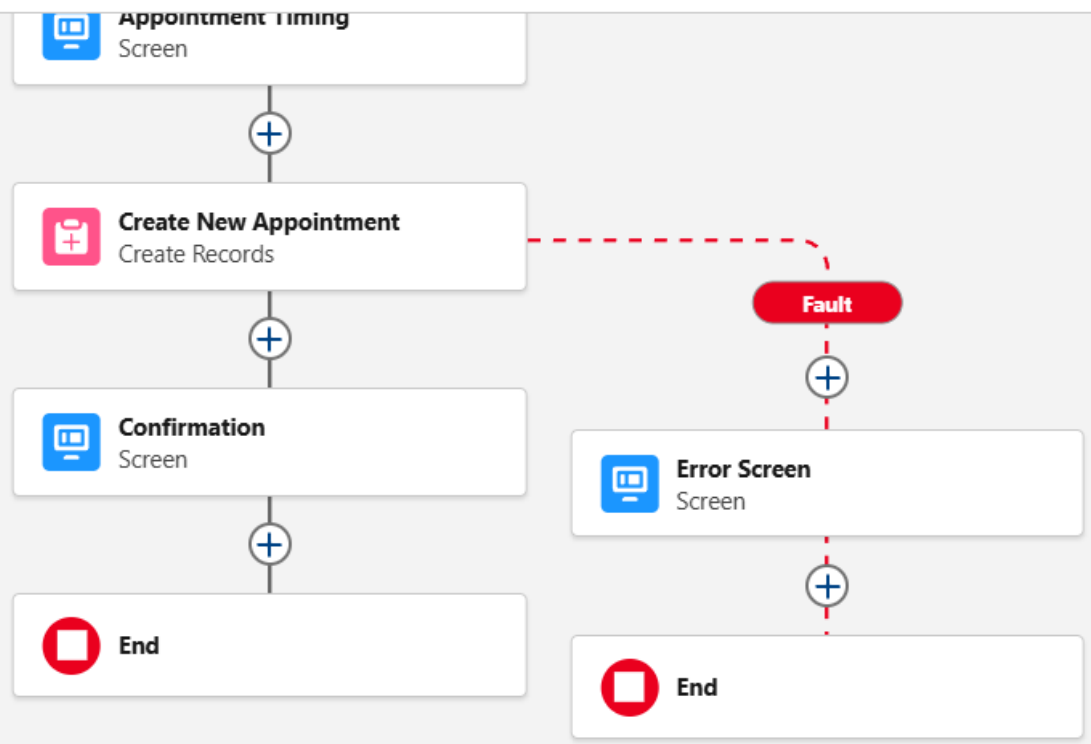
Error Screen Creation

A new **Error Screen** was added to the Booking Wizard flow canvas to handle appointment conflicts gracefully.

- Display Text component configured
- Shows `{!$Flow.FaultMessage}` global variable
- Captures Apex trigger error messages automatically

Fault Path Connection

Red dotted line connects Create Records element to Error Screen, ensuring seamless error handling during the booking process.





End-to-End Testing Results

User Simulation


Logged in as Receptionist user to replicate real-world booking scenarios and validate system behavior

Overlap Prevention

Successfully verified that the Booking Wizard blocks creation of conflicting appointments

Error Message Display

Confirmed custom error message "This time slot is unavailable..." appears correctly on Error Screen



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Salon Console

Appointments

Appoin...

Report B...

APP-003...

Test Clie...

Call to c...

Booking...

Report B...

Follow u...

More

Booking Wizard

Success! The new appoinment has been booked.

Previous

Finish

History

Recent Items



Search...



Salon Console

Appointments



Appoin...



Report B...



APP-003...



Test Clie...



Call to c...



Booking...



Report B...



Follow u...



More



Booking Wizard

An error occurred:

This error occurred when the flow tried to create records: FIELD_CUSTOM_VALIDATION_EXCEPTION: This time slot is unavailable. The stylist is already booked for an overlapping appointment.. You can look up ExceptionCode values in the [SOAP API Developer Guide](#).

Previous

Finish

Phase 5 Success Summary

3

Apex Files
Created

Handler, Trigger, and
Test classes

1

Formula Field

End Time calculation
field

100%

Test Coverage

Comprehensive
validation scenarios

Project Milestone Achieved

Phase 5 of the Salon Management System has been **successfully completed** with all development tasks, testing procedures, and documentation requirements fulfilled. The appointment overlap prevention system is now fully operational and integrated into the booking workflow.

