

# Corporate IT Helpdesk System

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## Phase 5: Apex Programming

**Project:** Corporate IT Helpdesk System

This phase introduces **server-side automation using Apex**, Salesforce's native programming language. The goal is to create a **before insert trigger** that automatically populates the **Description** field on new IT ticket records if the user leaves it blank. This demonstrates the use of developer tools to enhance the application's functionality and enforce consistent ticket details.

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### 1. Apex Trigger: IT Ticket Defaults

#### Purpose:

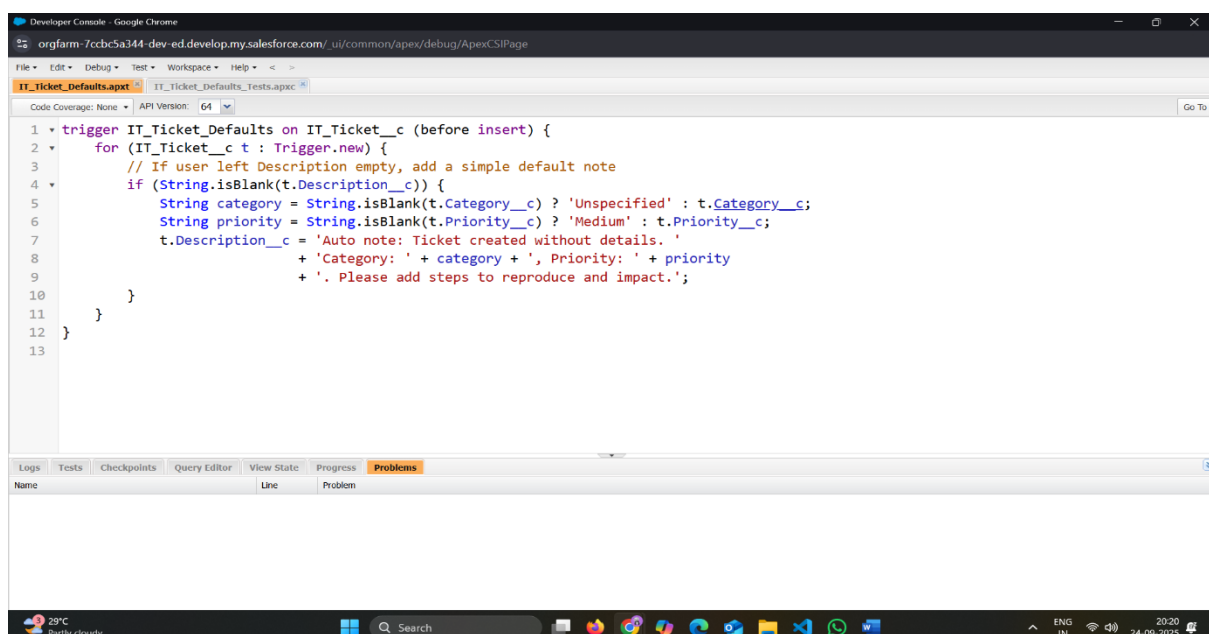
To ensure that every new IT ticket record has an initial note in the **Description** field, even if the user does not enter one manually. This ensures that IT tickets have enough information for triage and follow-up.

#### How it Works:

- This is a **before insert trigger**, which means the code runs just before a new IT\_Ticket\_\_c record is saved to the database.
  - For each new ticket:
    - If the **Description** field is blank, the trigger adds a default note.
    - The default note includes the ticket's **Category** and **Priority**, defaulting to "Unspecified" and "Medium" if those fields are empty.
    - The note also prompts the user to add steps to reproduce and impact.
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## Implementation and Testing

### A. The Apex Code



```
1 trigger IT_Ticket_Defaults on IT_Ticket__c (before insert) {
2   for (IT_Ticket__c t : Trigger.new) {
3     // If user left Description empty, add a simple default note
4     if (String.isBlank(t.Description__c)) {
5       String category = String.isBlank(t.Category__c) ? 'Unspecified' : t.Category__c;
6       String priority = String.isBlank(t.Priority__c) ? 'Medium' : t.Priority__c;
7       t.Description__c = 'Auto note: Ticket created without details. '
8         + 'Category: ' + category + ', Priority: ' + priority
9         + '. Please add steps to reproduce and impact.';
10    }
11  }
12 }
13 }
```

## B. Testing the Trigger

To test the trigger, we create new IT ticket records under different scenarios to confirm the automation works correctly:

### 1. While Creating a Ticket Without Description

- A new ticket is created for an employee, leaving the **Description** field blank.
- After saving, the trigger automatically populates the **Description** field with a default note that includes Category and Priority.

### 2. While Creating a Ticket With User-Provided Description

- If the **Description** field is already filled by the user, the trigger does **not override** the content.

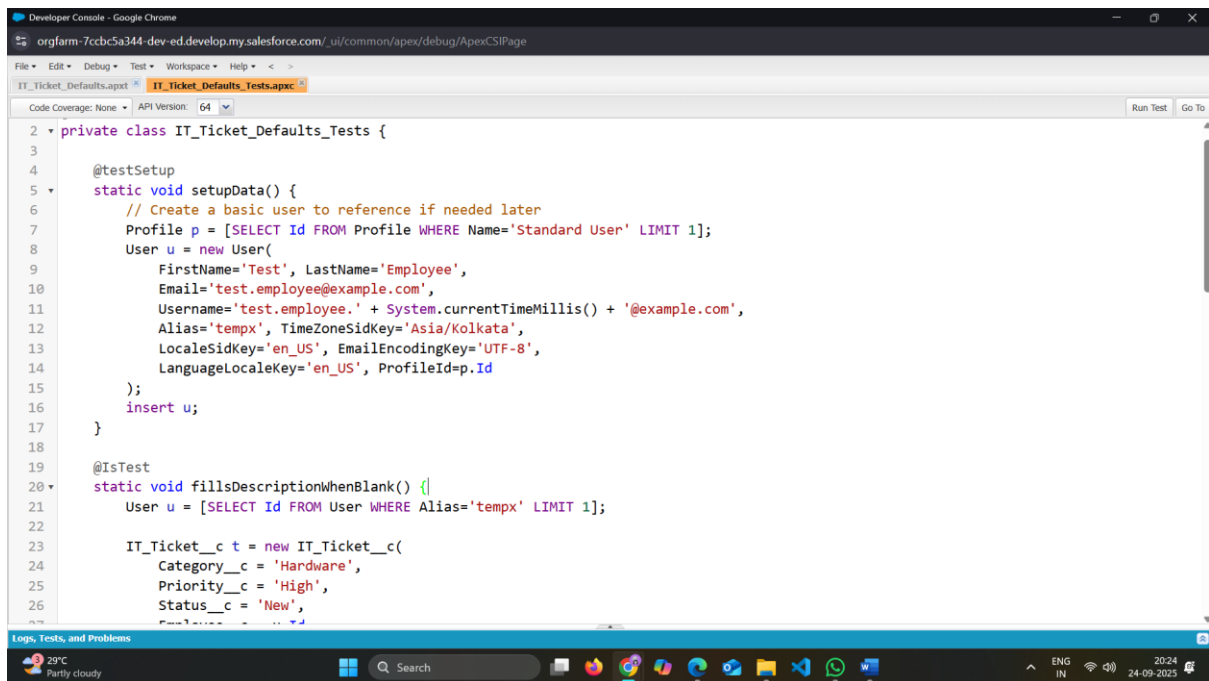
### 3. While Creating a Ticket With Missing Category or Priority

- If **Category** or **Priority** fields are blank, the trigger uses sensible defaults: "Unspecified" for Category and "Medium" for Priority.

The screenshot shows a 'New IT Ticket' form. The 'Ticket Number' field is empty. The 'Category' dropdown is set to 'Hardware', 'Status' is 'New', and 'Priority' is 'Critical'. The 'Description' field is empty. The 'Owner' is 'Kalakoti Bhanu Srinija'. There are 'Cancel', 'Save & New', and 'Save' buttons at the bottom.

The screenshot shows the 'Details' view of an IT ticket T-00034. The ticket is owned by 'Kalakoti Bhanu Srinija'. The 'Category' is 'Hardware', 'Status' is 'New', and 'Priority' is 'Critical'. The 'Description' field contains an auto-generated note: 'Auto note: Ticket created without details. Category: Hardware, Priority: Critical. Please add steps to reproduce and impact.' The 'Created By' and 'Last Modified By' fields both show 'Kalakoti Bhanu Srinija' on 9/24/2025 at 7:51 AM.

## Test Class:



```
1 private class IT_Ticket_Defaults_Tests {
2
3
4     @testSetup
5     static void setupData() {
6         // Create a basic user to reference if needed later
7         Profile p = [SELECT Id FROM Profile WHERE Name='Standard User' LIMIT 1];
8         User u = new User(
9             FirstName='Test', LastName='Employee',
10            Email='test.employee@example.com',
11            Username='test.employee.' + System.currentTimeMillis() + '@example.com',
12            Alias='tempx', TimeZoneSidKey='Asia/Kolkata',
13            LocaleSidKey='en_US', EmailEncodingKey='UTF-8',
14            LanguageLocaleKey='en_US', ProfileId=p.Id
15        );
16        insert u;
17    }
18
19    @IsTest
20    static void fillsDescriptionWhenBlank() {
21        User u = [SELECT Id FROM User WHERE Alias='tempx' LIMIT 1];
22
23        IT_Ticket__c t = new IT_Ticket__c(
24            Category__c = 'Hardware',
25            Priority__c = 'High',
26            Status__c = 'New',
27        );
28    }
29 }
```

## Conclusion

The **Apex Trigger** was successfully created, tested, and deployed. It ensures that all new IT tickets have a meaningful **Description**, even if the user leaves it blank.