

# FASTransit Point Management System – Test Case Document

---

## 1. Introduction

This document outlines the test cases for the FASTransit Point Management System. The system is designed to modernize and streamline transportation services within FAST University.

### 1.1 Scope

The test cases cover the following modules:

- User Authentication and Management
- Transportation Management
- Payment Processing
- Noticeboard Functionality
- Driver Management

### 1.2 Test Environment

- Framework: Django 5.1.2
- Database: MySQL
- Browser: Chrome, Firefox, Edge (latest versions)
- Operating System: Windows 10, macOS, Linux

## 2. User Authentication Module Test Cases

### 2.1 User Registration

**Test ID:** TC-UA-001

**Description:** Verify user registration with valid data

**Preconditions:** User is not registered in the system

**Steps:**

1. Navigate to Registration page
2. Enter valid name, email, contact, gender, roll number, address, CNIC, emergency contact, department
3. Upload profile image
4. Submit the form

**Expected Result:** User is successfully registered and redirected to login page

**Actual Result:** User was successfully registered

**Status:** Pass

**Test ID:** TC-UA-002

**Description:** Verify user registration with invalid email format

**Expected Result:** System shows an error message indicating invalid email format

**Actual Result:** System displayed error message: "Enter a valid email address"

**Status:** Pass

**Test ID:** TC-UA-003

**Description:** Verify user registration with invalid roll number format

**Expected Result:** System shows an error message indicating invalid roll number format

**Actual Result:** System displayed error message: "Roll number must be in the format XXK-XXXX, e.g., 22K-4586."

**Status:** Pass

## **2.2 User Login**

**Test ID:** TC-UA-004

**Description:** Verify user login with valid credentials

**Expected Result:** User is successfully logged in and redirected to the dashboard

**Actual Result:** User was successfully logged in

**Status:** Pass

**Test ID:** TC-UA-005

**Description:** Verify user login with invalid credentials

**Expected Result:** System shows an error message indicating invalid credentials

**Actual Result:** System displayed error message: "Invalid credentials"

**Status:** Pass

## **2.3 Password Reset**

**Test ID:** TC-UA-006

**Description:** Verify password reset functionality

**Expected Result:** Password is successfully reset and user can login with new password

**Actual Result:** Password was successfully reset

**Status:** Pass

## **3. Transportation Management Module Test Cases**

### **3.1 Route Management**

**Test ID:** TC-TM-001

**Description:** Verify adding a new route

**Expected Result:** New route is successfully added to the system

**Actual Result:** New route was successfully added

**Status:** Pass

**Test ID:** TC-TM-002

**Description:** Verify editing an existing route

**Expected Result:** Route information is successfully updated

**Actual Result:** Route information was successfully updated

**Status:** Pass

### **3.2 Vehicle Management**

**Test ID:** TC-TM-003

**Description:** Verify adding a new vehicle

**Expected Result:** New vehicle is successfully added to the system

**Actual Result:** New vehicle was successfully added

**Status:** Pass

**Test ID:** TC-TM-004

**Description:** Verify adding a vehicle with invalid license plate format

**Expected Result:** System shows an error message indicating invalid license plate format

**Actual Result:** System displayed error message: "CNIC must be in the format ABC-123"

**Status:** Pass

### **3.3 User Route Assignment**

**Test ID:** TC-TM-005

**Description:** Verify assigning a user to a route

**Expected Result:** Route is successfully assigned to the user

**Actual Result:** Route was successfully assigned to the user

**Status:** Pass

## **4. Payment Module Test Cases**

### **4.1 Voucher Generation**

**Test ID:** TC-PM-001

**Description:** Verify voucher generation for a user

**Expected Result:** Voucher is successfully generated for the user

**Actual Result:** Voucher was successfully generated

**Status:** Pass

### **4.2 Payment Processing**

**Test ID:** TC-PM-002

**Description:** Verify payment using valid payment method

**Expected Result:** Payment is successfully processed and voucher status is updated to

"Succeeded"

**Actual Result:** Payment was successfully processed

**Status:** Pass

**Test ID:** TC-PM-003

**Description:** Verify voucher expiration logic

**Expected Result:** Voucher is shown as inactive or expired

**Actual Result:** Voucher was shown as inactive

**Status:** Pass

## **5. Noticeboard Module Test Cases**

### **5.1 Notice Creation**

**Test ID:** TC-NB-001

**Description:** Verify creating a new notice

**Expected Result:** Notice is successfully created and email notifications are sent to users

**Actual Result:** Notice was successfully created and emails were sent

**Status:** Pass

### **5.2 Feedback Submission**

**Test ID:** TC-NB-002

**Description:** Verify feedback submission by a user

**Expected Result:** Feedback is successfully submitted and recorded in the system

**Actual Result:** Feedback was successfully submitted

**Status:** Pass

### **5.3 Complaint Status Management**

**Test ID:** TC-NB-003

**Description:** Verify updating complaint status

**Expected Result:** Complaint status is successfully updated

**Actual Result:** Complaint status was successfully updated

**Status:** Pass

## **6. Driver Management Module Test Cases**

### **6.1 Driver Registration**

**Test ID:** TC-DM-001

**Description:** Verify adding a new driver

**Expected Result:** New driver is successfully added to the system

**Actual Result:** New driver was successfully added

**Status:** Pass

**Test ID:** TC-DM-002

**Description:** Verify adding a driver with invalid CNIC format

**Expected Result:** System shows an error message indicating invalid CNIC format

**Actual Result:** System displayed error message: "CNIC must be in the format  
XXXX-XXXXXXX-X"

**Status:** Pass

## **6.2 Vehicle Assignment**

**Test ID:** TC-DM-003

**Description:** Verify assigning a vehicle to a driver

**Expected Result:** Vehicle is successfully assigned to the driver

**Actual Result:** Vehicle was successfully assigned to the driver

**Status:** Pass

## **7. Security Test Cases**

### **7.1 Authentication Security**

**Test ID:** TC-SEC-001

**Description:** Verify authentication required for protected routes

**Expected Result:** User is redirected to login page

**Actual Result:** User was redirected to login page

**Status:** Pass

**Test ID:** TC-SEC-002

**Description:** Verify authorization for admin-only routes

**Expected Result:** User is denied access with appropriate error message

**Actual Result:** User was denied access

**Status:** Pass

## **8. Performance Test Cases**

**Test ID:** TC-PERF-001

**Description:** Verify system performance under load

**Expected Result:** System handles load with response time under 3 seconds

**Actual Result:** Average response time was 2.5 seconds

**Status:** Pass

## 9. Test Summary

Module	Total Test Cases	Passed	Failed	Pending
User Authentication	6	6	0	0
Transportation Management	5	5	0	0
Payment Module	3	3	0	0
Noticeboard Module	3	3	0	0
Driver Management	2	2	0	0
<b>Total</b>	<b>19</b>	<b>19</b>	<b>0</b>	<b>0</b>

---

## Test Log Report:

**Project Name:** FASTransit Point Management System

**Date of Testing:** 29th April

**Test Environment:** Windows 10, Chrome 119.0.6045.124

**Tester:** Syed Uzair Hussain

### User Authentication Module

#### User Registration Tests

- TC-UA-001 | 09:15 AM | Pass | User successfully registered with valid data
- TC-UA-002 | 09:30 AM | Pass | System correctly validated email format
- TC-UA-003 | 09:45 AM | Pass | System correctly validated roll number format

#### User Login Tests

- TC-UA-004 | 10:00 AM | Pass | User successfully logged in with valid credentials
- TC-UA-005 | 10:15 AM | Pass | System correctly handled invalid login attempt

## **Transportation Management Module**

### **Route Management Tests**

- TC-TM-001 | 11:00 AM | Pass | New route was added successfully
- TC-TM-002 | 11:15 AM | Pass | Route information was updated successfully

### **Vehicle Management Tests**

- TC-TM-003 | 11:30 AM | Pass | New vehicle was added successfully
- TC-TM-004 | 11:45 AM | Pass | System correctly validated license plate format

### **User Route Assignment Tests**

- TC-TM-005 | 12:00 PM | Pass | Route assignment to user was successful

## **Payment Module**

### **Voucher Generation Tests**

- TC-PM-001 | 01:00 PM | Pass | Voucher generated for user successfully

### **Payment Processing Tests**

- TC-PM-002 | 01:15 PM | Pass | Payment processed successfully with Stripe integration
- TC-PM-003 | 01:30 PM | Pass | Expired voucher correctly shown as inactive

## **Noticeboard Module**

### **Notice Creation Tests**

- TC-NB-001 | 02:00 PM | Pass | Notice created and email notifications sent

## Feedback Submission Tests

- TC-NB-002 | 02:15 PM | Pass | Feedback submitted successfully

## Complaint Status Management Tests

- TC-NB-003 | 02:30 PM | Pass | Complaint status updated successfully

## Driver Management Module

### Driver Registration Tests

- TC-DM-001 | 03:00 PM | Pass | New driver added successfully
- TC-DM-002 | 03:15 PM | Pass | System correctly validated CNIC format

### Vehicle Assignment Tests

- TC-DM-003 | 03:30 PM | Pass | Vehicle assigned to driver successfully

## Security Tests

- TC-SEC-001 | 04:00 PM | Pass | Unauthenticated access correctly redirected to login
- TC-SEC-002 | 04:15 PM | Pass | Unauthorized access to admin pages correctly blocked

---

## Performance Tests

- TC-PERF-001 | 04:30 PM | Pass | System handled 100 concurrent logins with 2.5s avg response time

## Defect Summary

No defects were found during testing.

## Test Coverage Analysis



- User Authentication: 3/3 features tested (100%)
- Transportation Management: 3/3 features tested (100%)
- Payment Module: 2/2 features tested (100%)
- Noticeboard Module: 3/3 features tested (100%)
- Driver Management: 2/2 features tested (100%)
- Security: 2/2 features tested (100%)
- Performance: 1/1 features tested (100%)

## **Test Environment Details**

### **Hardware Configuration**

- Processor: Intel Core i7 11th Gen
- RAM: 16 GB
- Storage: 512 GB SSD

### **Software Configuration**

- Operating System: Windows 10 Pro
- Browser: Chrome 119.0.6045.124
- Database: MySQL 8.0.27

### **Test Data**

- Test user accounts with various privilege levels
- Sample routes, vehicles, and drivers
- Test payment methods and vouchers

# Conclusion

The FASTransit Point Management System has undergone comprehensive testing across all modules. All test cases have been successfully executed, and the FASTransit Point Management System has passed all the defined test cases. The system is functioning as expected and meets the requirements. The testing process has verified the functionality of user authentication, transportation management, payment processing, noticeboard functionality, and driver management modules. The system demonstrated stability, accuracy, and performance under load, fulfilling all specified requirements and is ready for deployment.

## Key Strengths:

1. Robust user authentication and validation
2. Efficient route and vehicle management
3. Secure payment processing
4. Effective noticeboard communication
5. Comprehensive driver management

## Recommendations:

1. Conduct periodic security audits
2. Monitor performance during peak usage
3. Implement backup procedures for payment data  
Provide thorough training for administrators and users