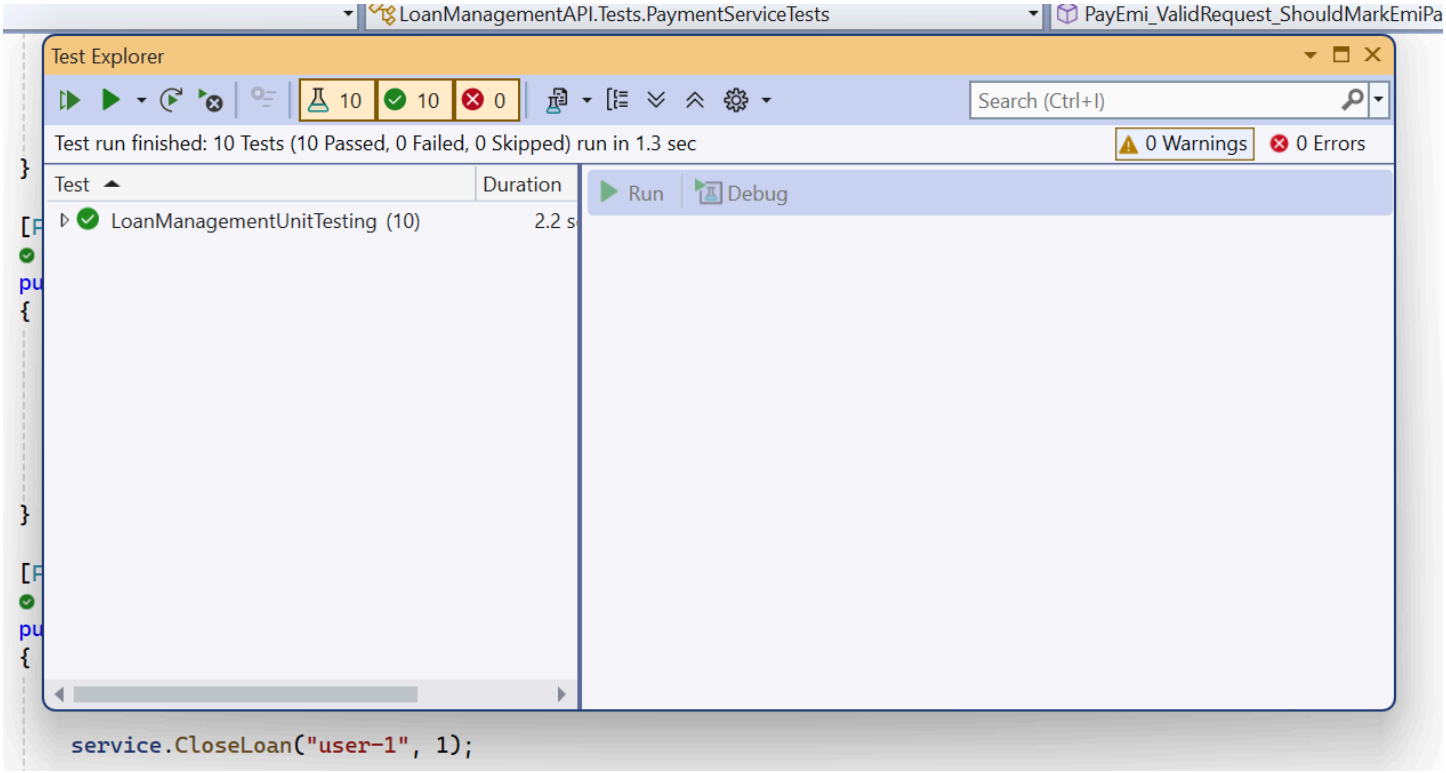
Project Screenshots:

xUnit Testing:



LINQ methods :

```
3 references
public IEnumerable<LoanStatusDto> GetCustomerLoans(string userId)
{
        var customerId = _context.Customers
        .Where(c => c.UserId == userId)
        .Select(c => c.CustomerId)
        .FirstOrDefault();

    if (customerId == 0)
        throw new Exception("Customer profile not found");

    return _context.LoanApplications
        .Include(l => l.LoanType)
        .Where(l => l.CustomerId == customerId)
        .Select(l => new LoanStatusDto
        {
            LoanId = l.LoanId,
            LoanTypeName=l.LoanType.Name,
            Amount = l.Amount,
            Tenure = l.Tenure,
            Status = l.Status,
            AppliedDate = l.AppliedDate
        })
        .ToList();
```

```
2 references
public IEnumerable<EmiDto> GetEmis(int loanId)
{
    return _context.EMIs
        .Where(e => e.LoanId == loanId)
        .OrderBy(e => e.InstallmentNumber)
        .Select(e => new EmiDto
        {
            EMIId = e.EMIId,
            InstallmentNumber = e.InstallmentNumber,
            DueDate = e.DueDate,
            Amount = e.Amount,
            PaidStatus = e.PaidStatus
        })
        .ToList();
}
```

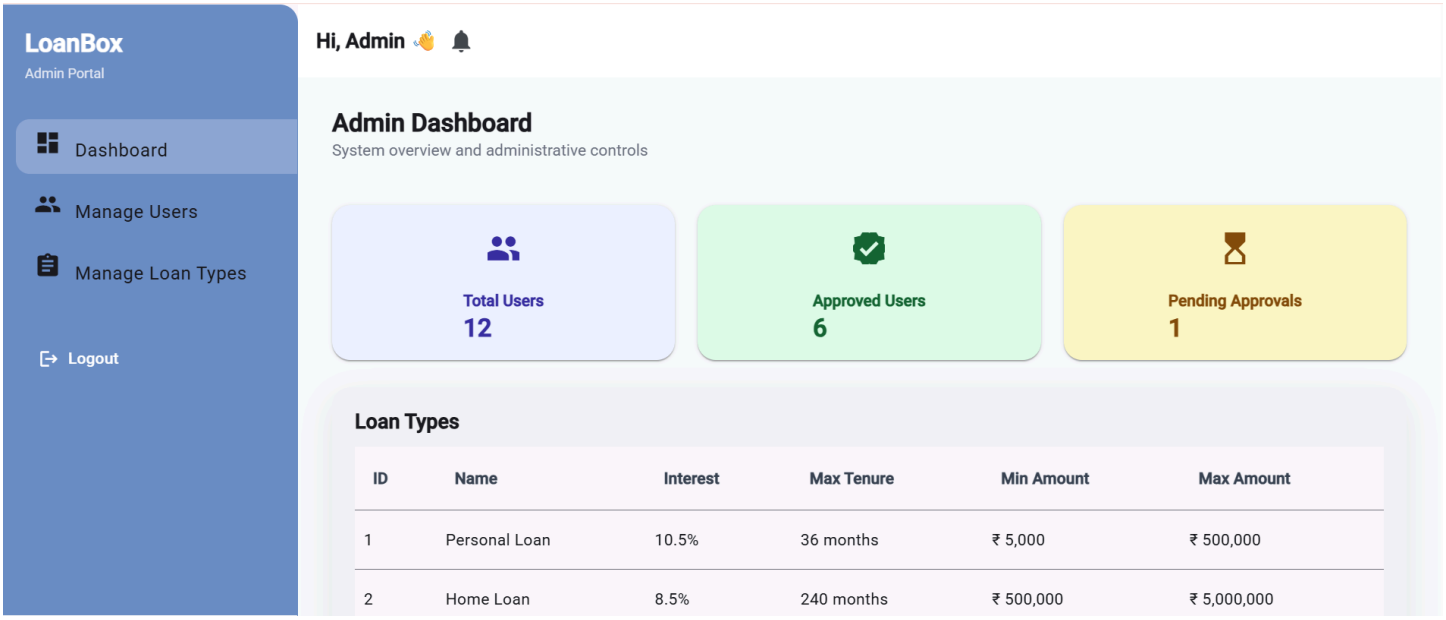
```
public IEnumerable<EmiDto> ProcessLoan(int loanId, LoanApprovalDto dto)
{
    var loan = _context.LoanApplications
        .Include(l => l.EMIs)
        .FirstOrDefault(l => l.LoanId == loanId)
        ?? throw new Exception("Loan not found");

    if (!dto.IsApproved)
    {
        loan.Status = dto.Status;
        loan.Remarks = dto.Remarks;
        _context.SaveChanges();
        return Enumerable.Empty<EmiDto>();
    }
```

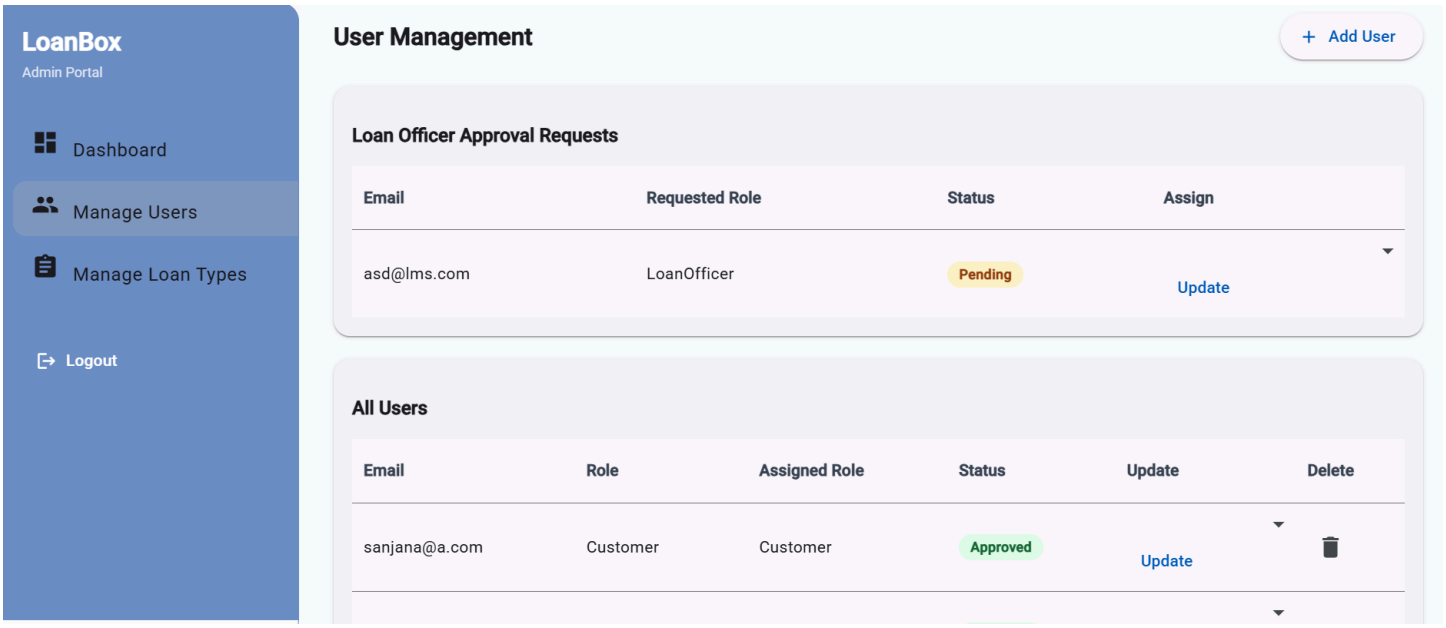
```
public void PayEmi(string userId, int loanId, int installmentNumber)
{

    var customerId = _context.Customers
        .Where(c => c.UserId == userId)
        .Select(c => c.CustomerId)
        .FirstOrDefault();

    if (customerId == 0)
        throw new Exception("Customer profile not found");


    var loan = _context.LoanApplications
        .FirstOrDefault(l => l.LoanId == loanId && l.CustomerId == customerId);

    if (loan == null)
        throw new Exception("Loan not found or unauthorized");

    var emi = _context.EMIs
        .FirstOrDefault(e =>
            e.LoanId == loanId &&
            e.InstallmentNumber == installmentNumber);
```

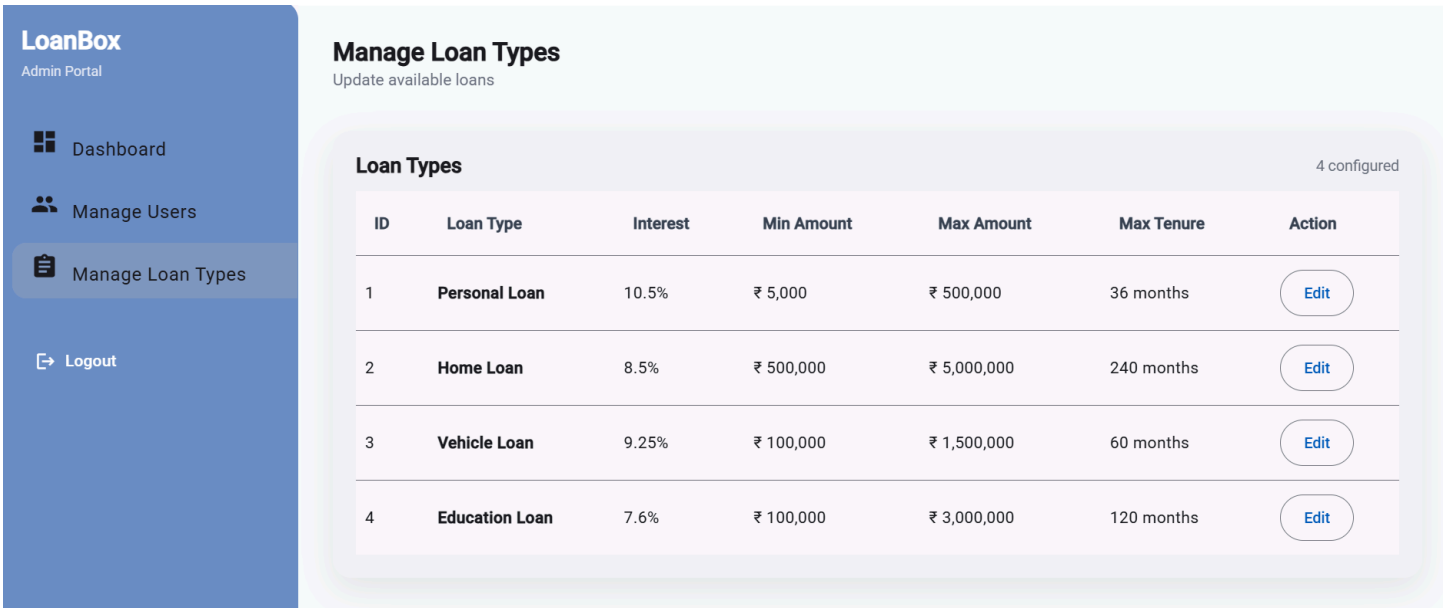
```
    public void CloseLoan(string userId, int loanId)
    {
        var loan = _context.LoanApplications
            .Include(l => l.EMIs)
            .Include(l => l.Customer)
            .FirstOrDefault(l => l.LoanId == loanId);

        if (loan == null)
            throw new Exception("Loan not found");

        if (loan.Customer.UserId != userId)
            throw new Exception("Unauthorized loan access");

        if (loan.Status == "Closed")
            throw new Exception("Loan already closed");
```

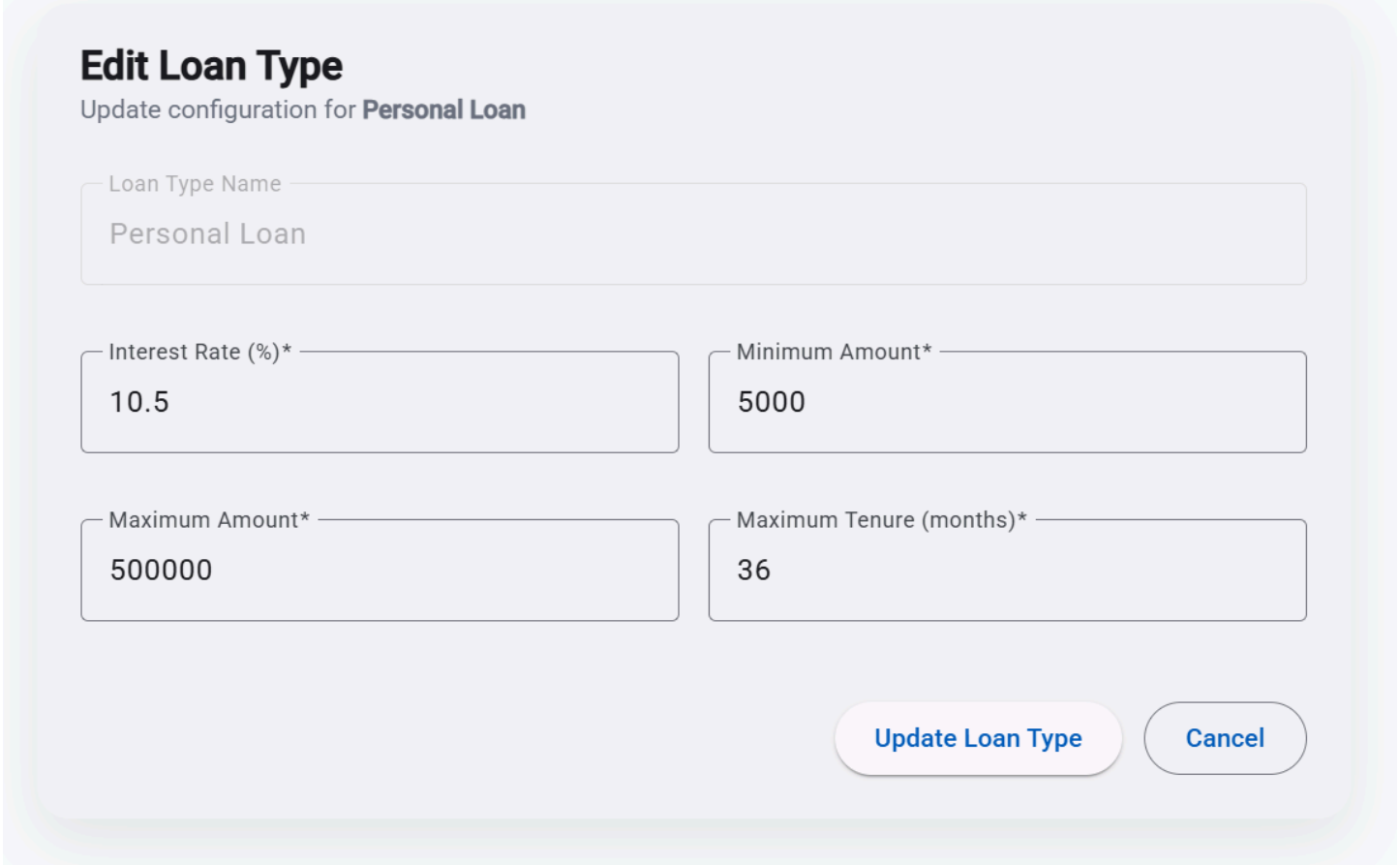
UI Screenshots :

Admin:

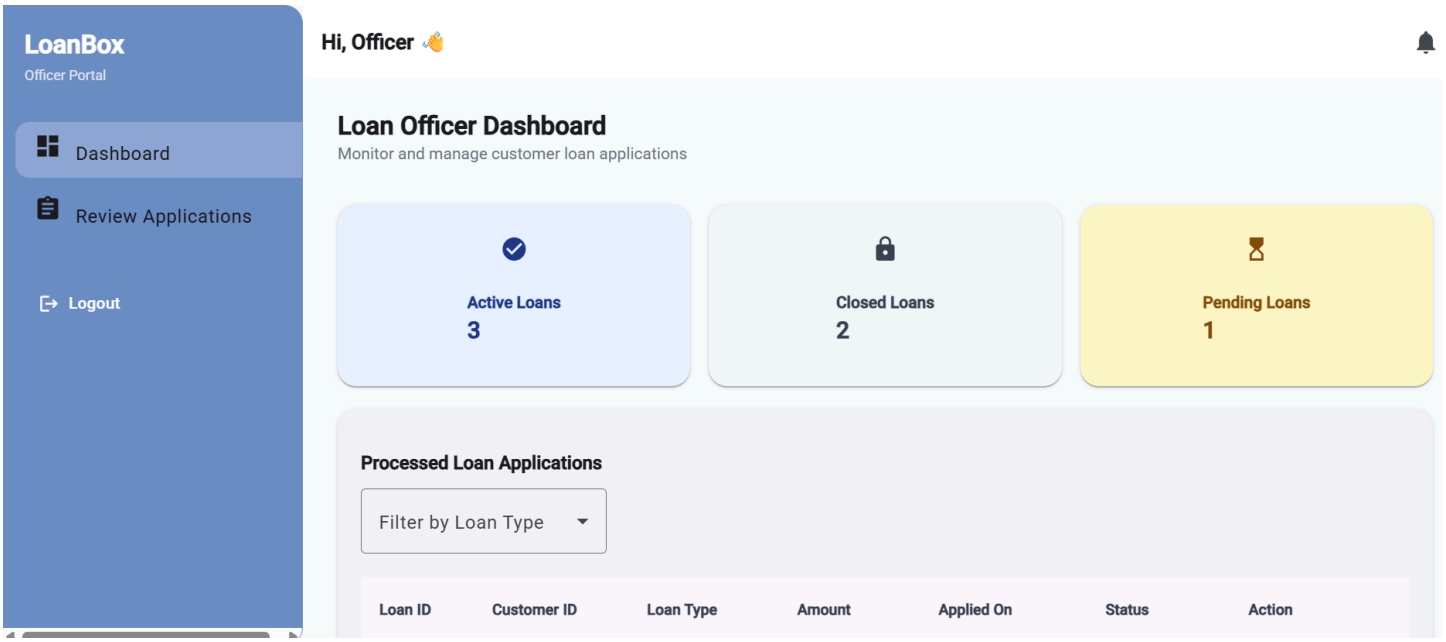


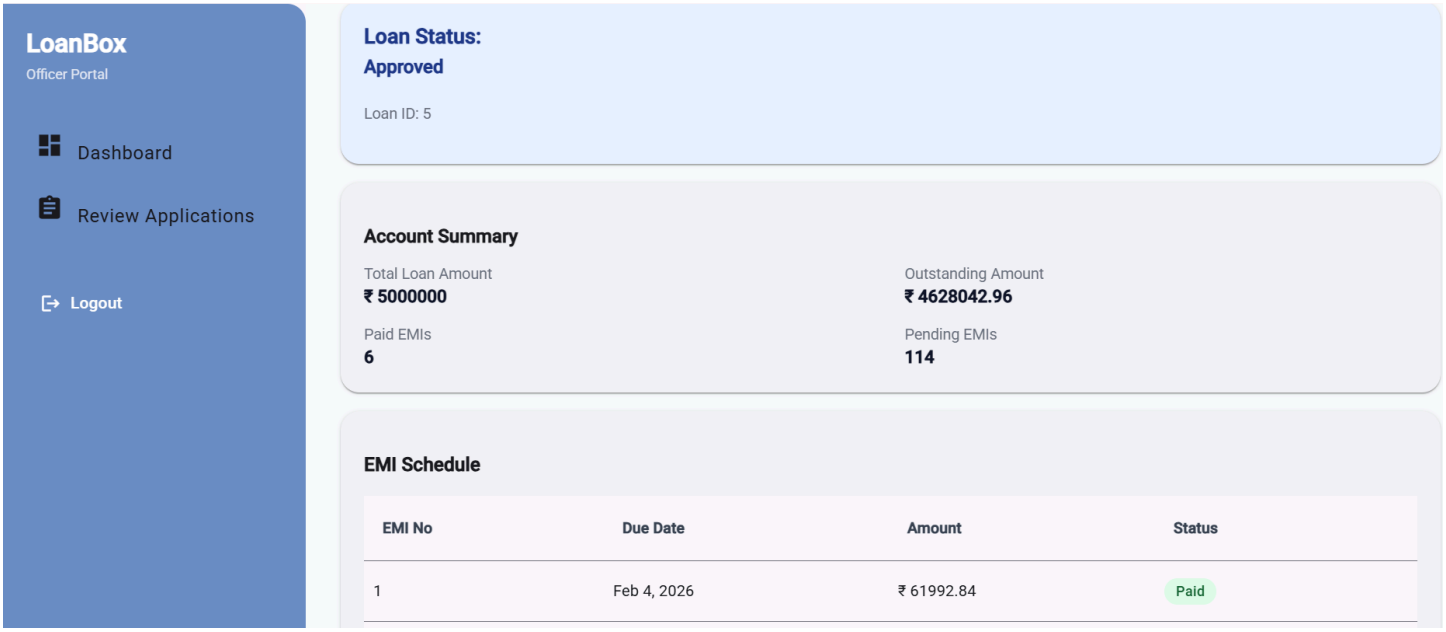


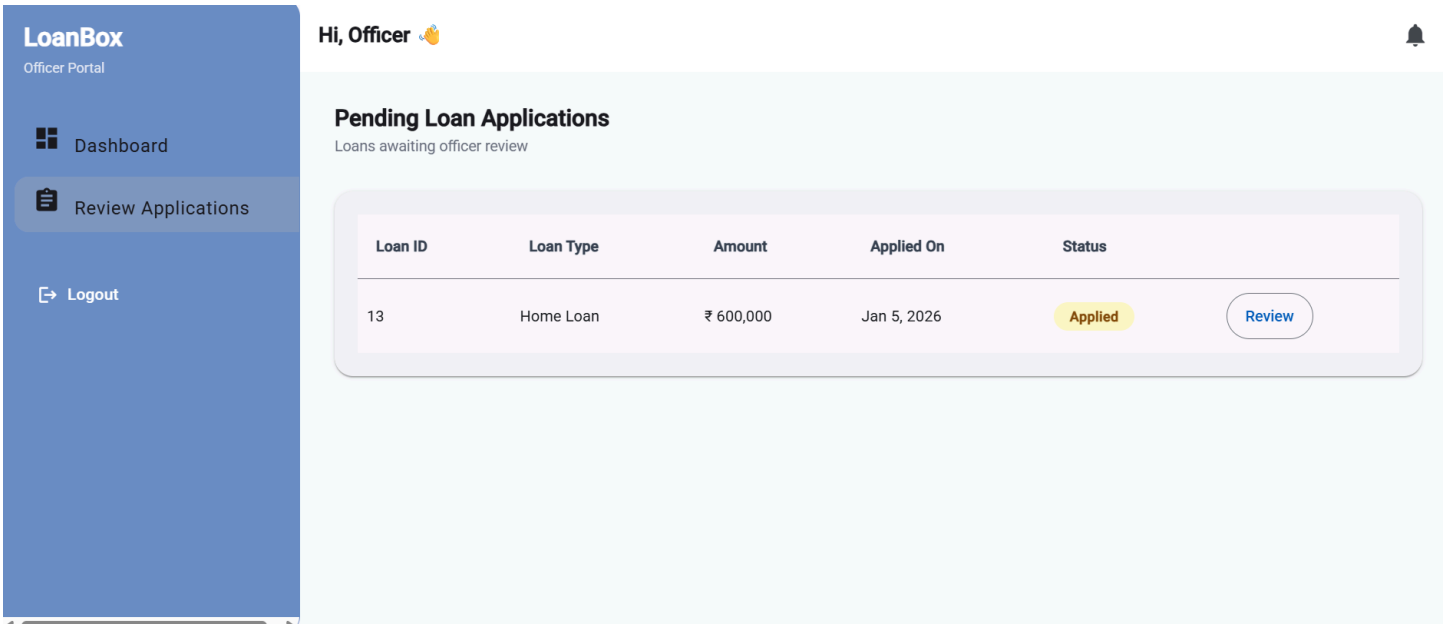


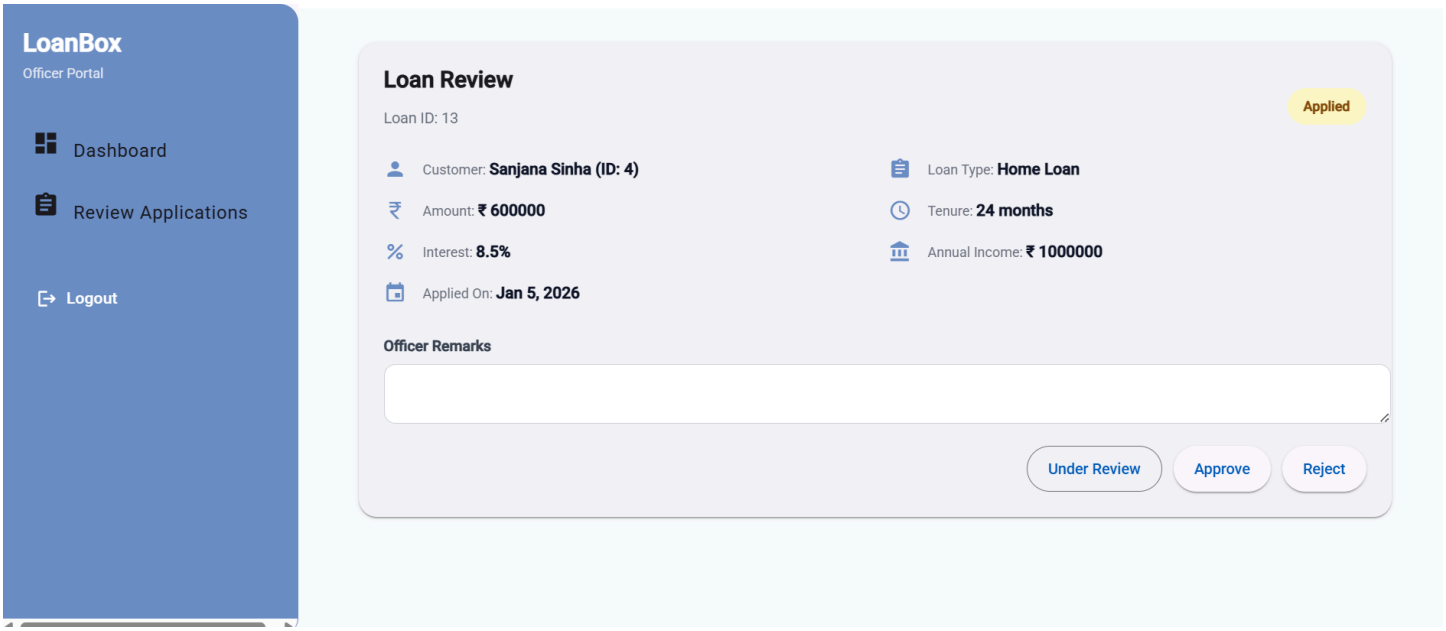


Loan Officer:

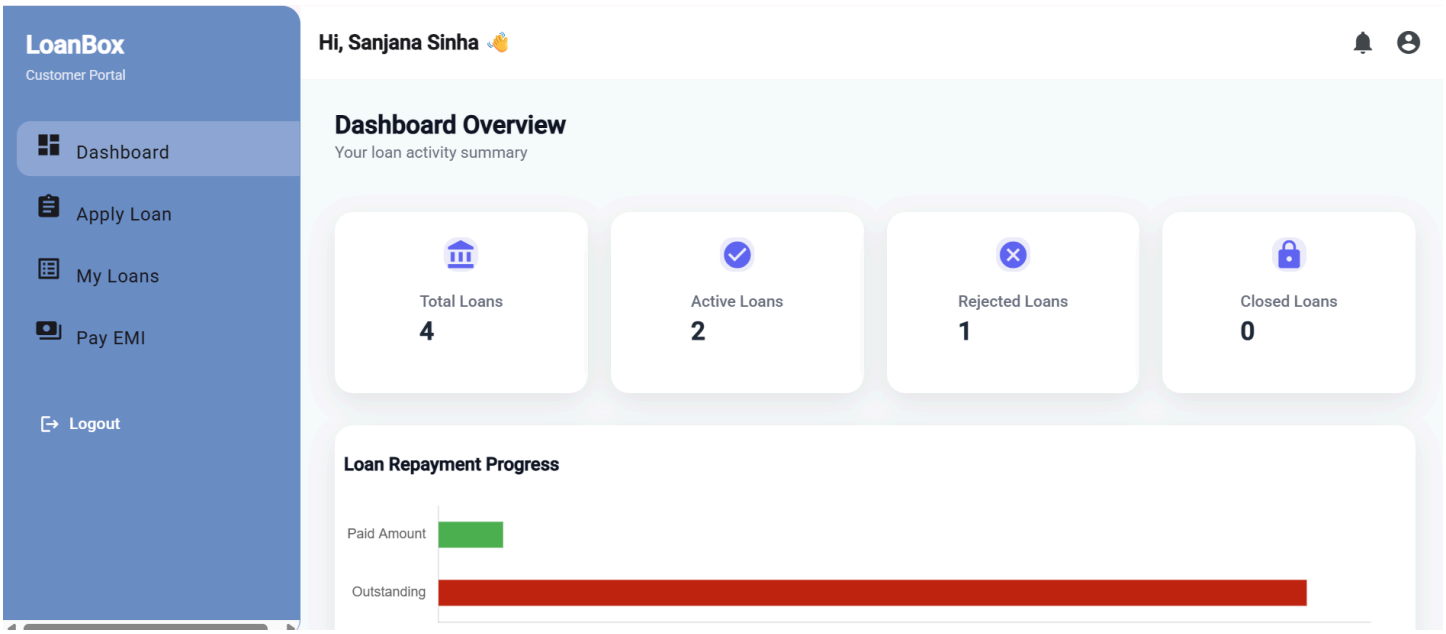


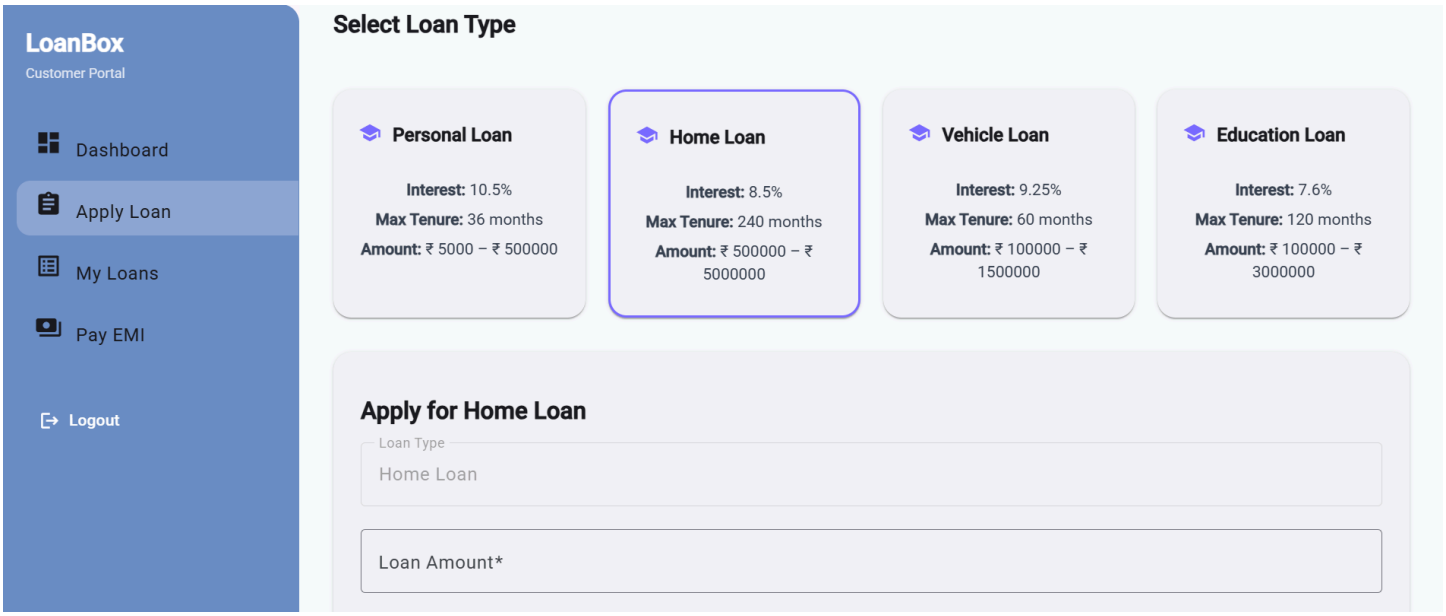

LoanBox
Officer Portal
Dashboard
Review Applications
Logout
Loan Status:
Approved
Loan ID: 5
Account Summary
Total Loan Amount
₹ 5000000
Outstanding Amount
₹ 4628042.96
Paid EMIs
6
Pending EMIs
114
EMI Schedule
EMI No
Due Date
Amount
Status
1
Feb 4, 2026
₹ 61992.84
Paid

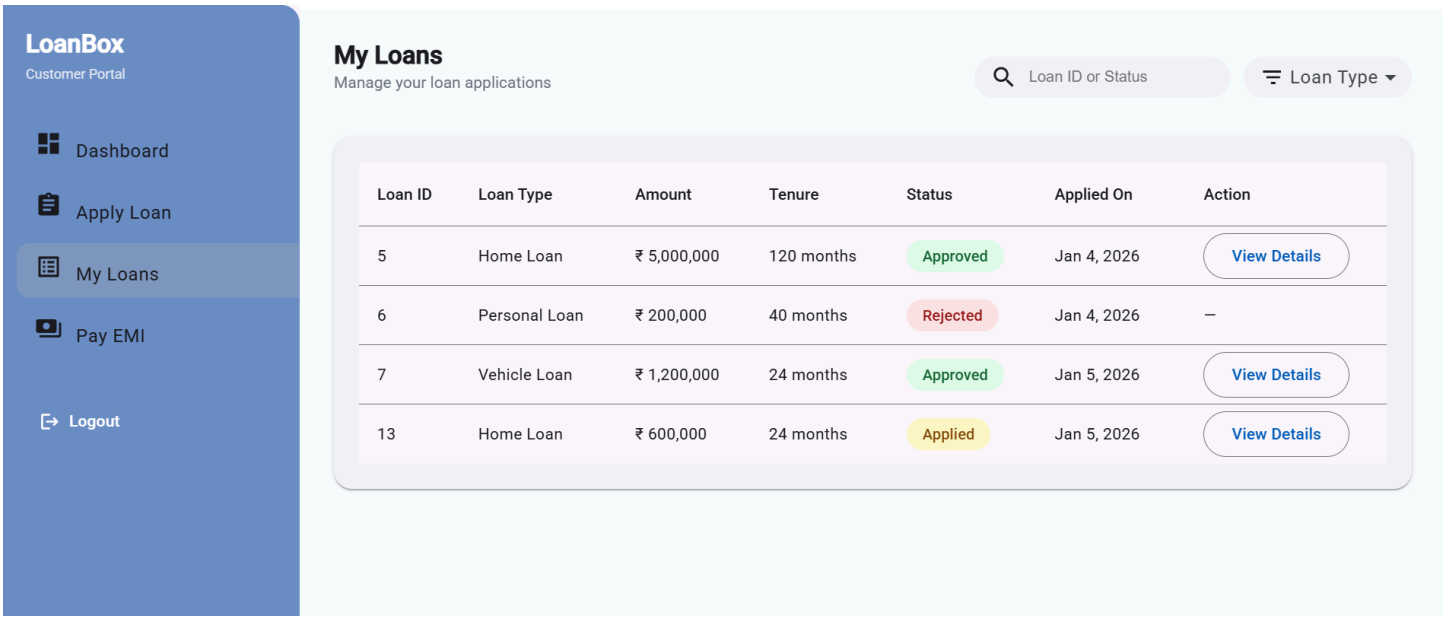

LoanBox
Officer Portal
Dashboard
Review Applications
Logout
Hi, Officer
Pending Loan Applications
Loans awaiting officer review
Loan ID
Loan Type
Amount
Applied On
Status
13
Home Loan
₹ 600,000
Jan 5, 2026
Applied
Review

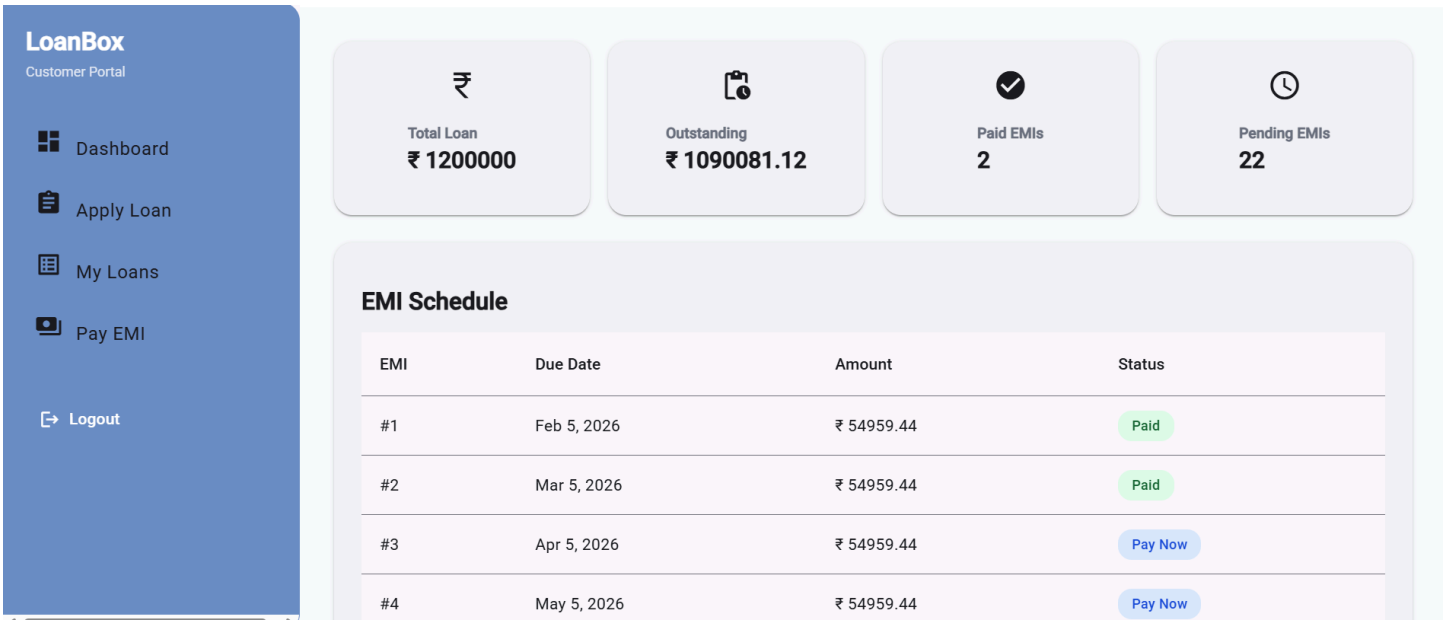

LoanBox
Officer Portal
Dashboard
Review Applications
Logout
Loan Review
Loan ID: 13
Applied
Customer: Sanjana Sinha (ID: 4)
Loan Type: Home Loan
Amount: ₹ 600000
Tenure: 24 months
Interest: 8.5%
Annual Income: ₹ 1000000
Applied On: Jan 5, 2026
Officer Remarks
Under Review
Approve
Reject

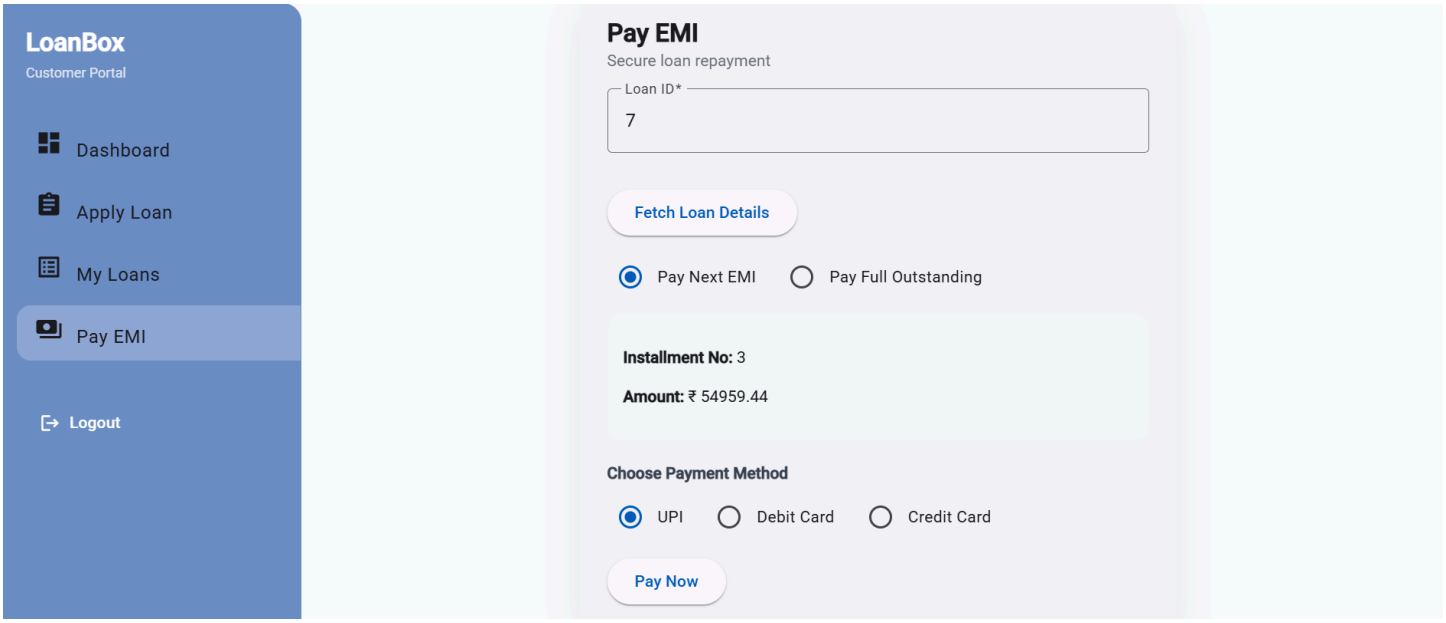
Customer:

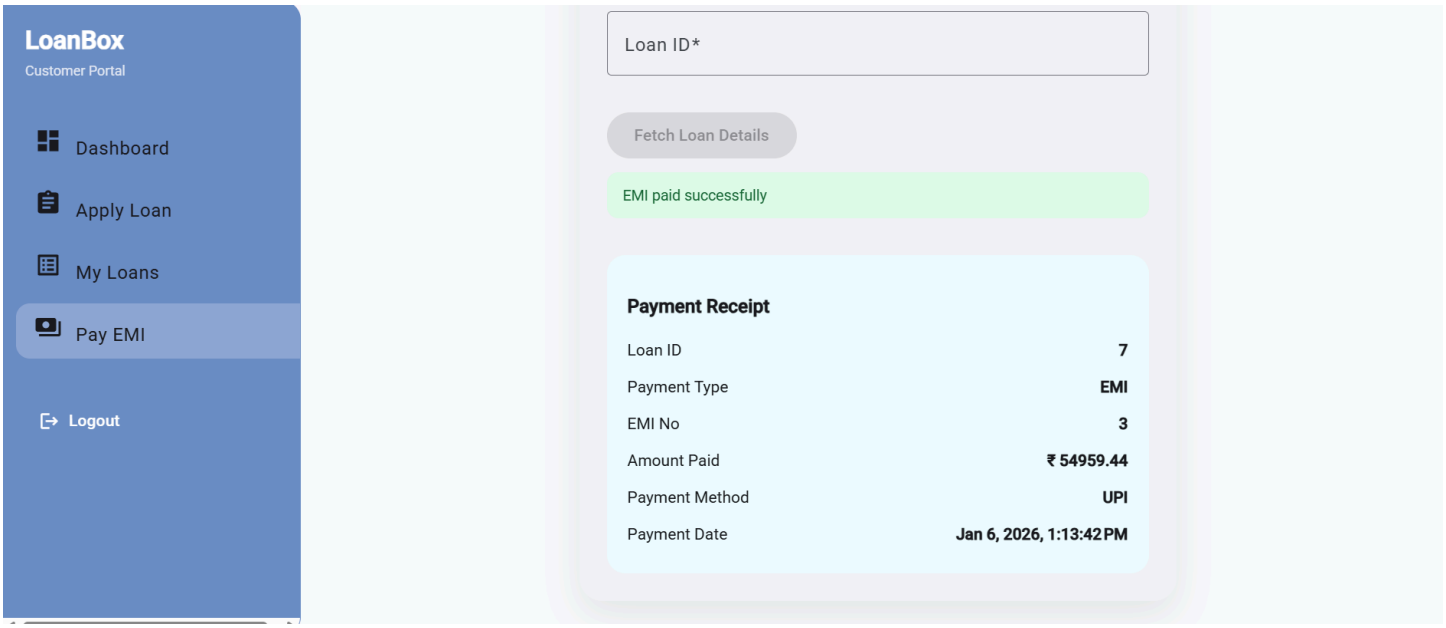

LoanBox
Customer Portal
Dashboard
Apply Loan
My Loans
Pay EMI
Logout
Hi, Sanjana Sinha
Dashboard Overview
Your loan activity summary
Total Loans
4
Active Loans
2
Rejected Loans
1
Closed Loans
0
Loan Repayment Progress
Paid Amount
Outstanding


LoanBox
Customer Portal
Dashboard
Apply Loan
My Loans
Pay EMI
Logout
Select Loan Type
Personal Loan
Interest: 10.5%
Max Tenure: 36 months
Amount: ₹ 5000 – ₹ 500000
Home Loan
Interest: 8.5%
Max Tenure: 240 months
Amount: ₹ 500000 – ₹ 5000000
Vehicle Loan
Interest: 9.25%
Max Tenure: 60 months
Amount: ₹ 100000 – ₹ 1500000
Education Loan
Interest: 7.6%
Max Tenure: 120 months
Amount: ₹ 100000 – ₹ 3000000
Apply for Home Loan
Loan Type
Home Loan
Loan Amount*


LoanBox
Customer Portal
Dashboard
Apply Loan
My Loans
Pay EMI
Logout
My Loans
Manage your loan applications
Loan ID or Status
Loan Type
Loan ID
Loan Type
Amount
Tenure
Status
Applied On
Action
5
Home Loan
₹ 5,000,000
120 months
Approved
Jan 4, 2026
View Details
6
Personal Loan
₹ 200,000
40 months
Rejected
Jan 4, 2026
–
7
Vehicle Loan
₹ 1,200,000
24 months
Approved
Jan 5, 2026
View Details
13
Home Loan
₹ 600,000
24 months
Applied
Jan 5, 2026
View Details


LoanBox
Customer Portal
Dashboard
Apply Loan
My Loans
Pay EMI
Logout
Total Loan
₹ 1200000
Outstanding
₹ 1090081.12
Paid EMIs
2
Pending EMIs
22
EMI Schedule
EMI
Due Date
Amount
Status
#1
Feb 5, 2026
₹ 54959.44
Paid
#2
Mar 5, 2026
₹ 54959.44
Paid
#3
Apr 5, 2026
₹ 54959.44
Pay Now
#4
May 5, 2026
₹ 54959.44
Pay Now


LoanBox
Customer Portal
Dashboard
Apply Loan
My Loans
Pay EMI
Logout
Pay EMI
Secure loan repayment
Loan ID*
7
Fetch Loan Details
Pay Next EMI
Pay Full Outstanding
Installment No: 3
Amount: ₹ 54959.44
Choose Payment Method
UPI
Debit Card
Credit Card
Pay Now


LoanBox
Customer Portal
Dashboard
Apply Loan
My Loans
Pay EMI
Logout
Loan ID*
Fetch Loan Details
EMI paid successfully
Payment Receipt
Loan ID
7
Payment Type
EMI
EMI No
3
Amount Paid
₹ 54959.44
Payment Method
UPI
Payment Date
Jan 6, 2026, 1:13:42 PM