

# CSE326

## Toll Management System

**Topic: Class Diagram & ER Diagram**

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**Group : 2**

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1705081 - Kamrul  
1705082 - Mehedi  
1705084 - Utsa

# Introduction

**Project Idea:** Toll Management System

**Architecture used:** Model View Controller (**MVC**)

**Diagram Convention:** Unified Modelling Language (**UML**)

**Diagrams Generated:**

- Class Diagram
- Entity Relationship (ER) Diagram

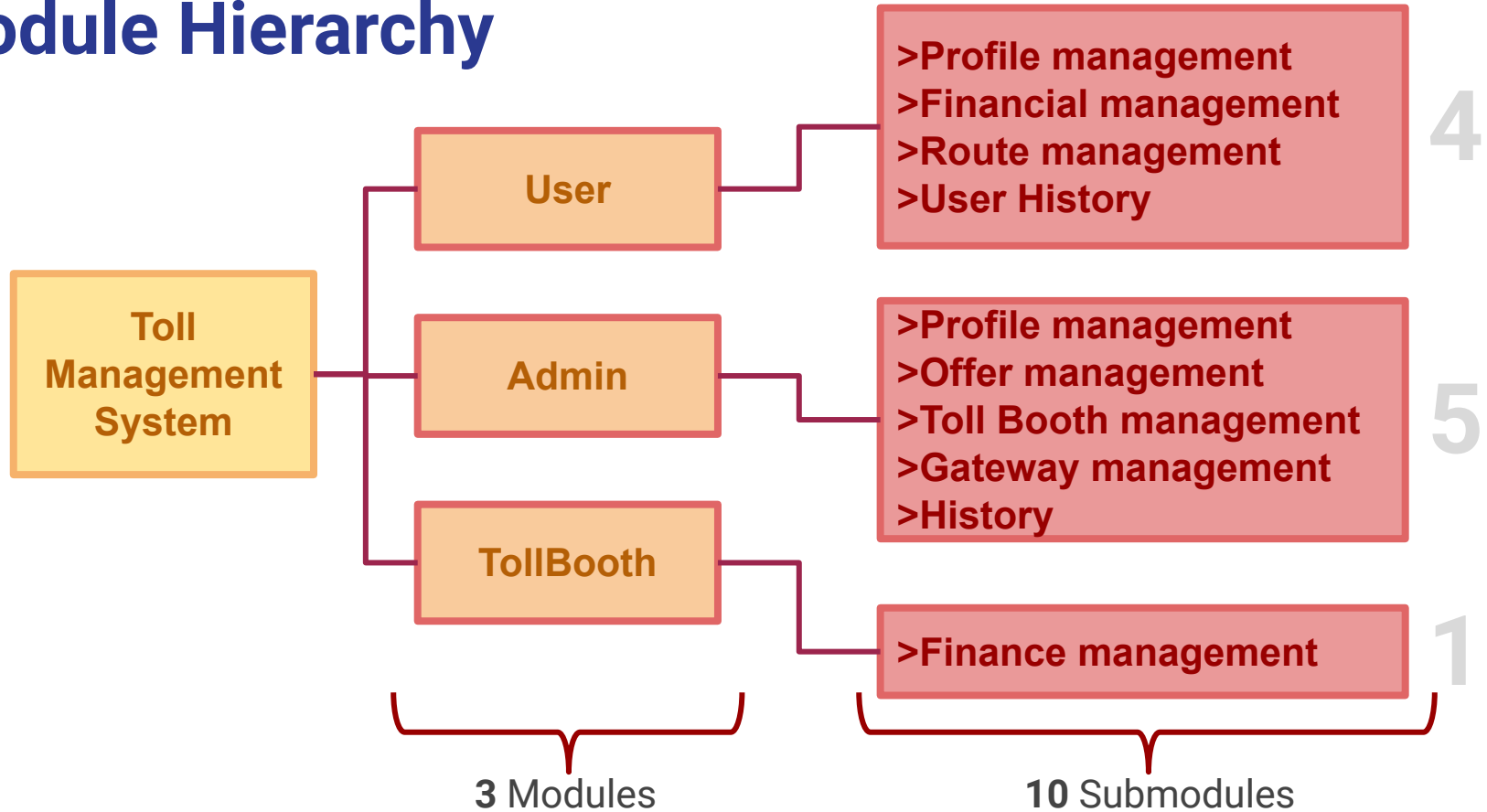
**Model**

**View**

**Controller**

Conceptual Diagramming  
Used Throughout

# Module Hierarchy



# 1. User Module

## 1.1 Profile Management

# User: Profile Management

## Description

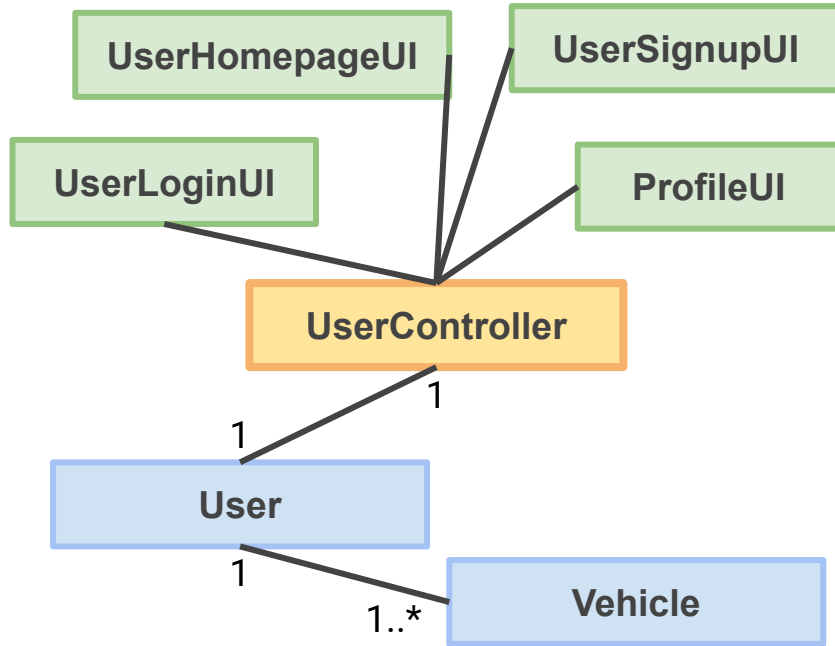
User profile management sub module has the following tasks:

- Log in
- Sign Up
- Profile Info View
- Profile Info Edit
- Homepage navigation

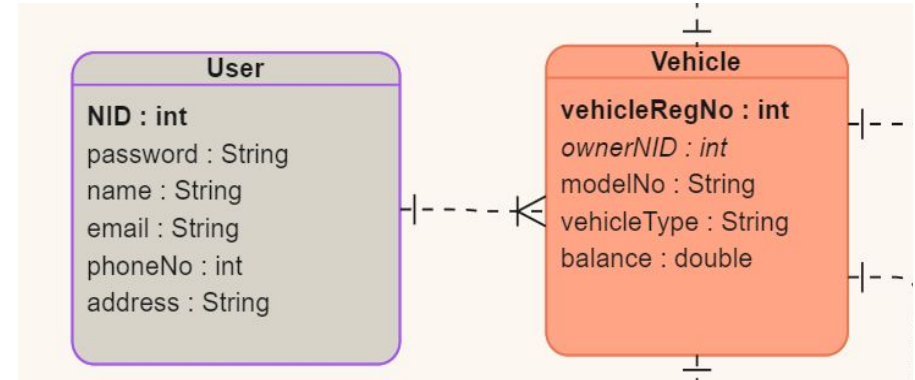
Model	View	Controller
User Vehicle	UserLoginUI UserSignupUI UserHomepageUI ProfileUI	UserController

# User: Profile Management

## High Level View



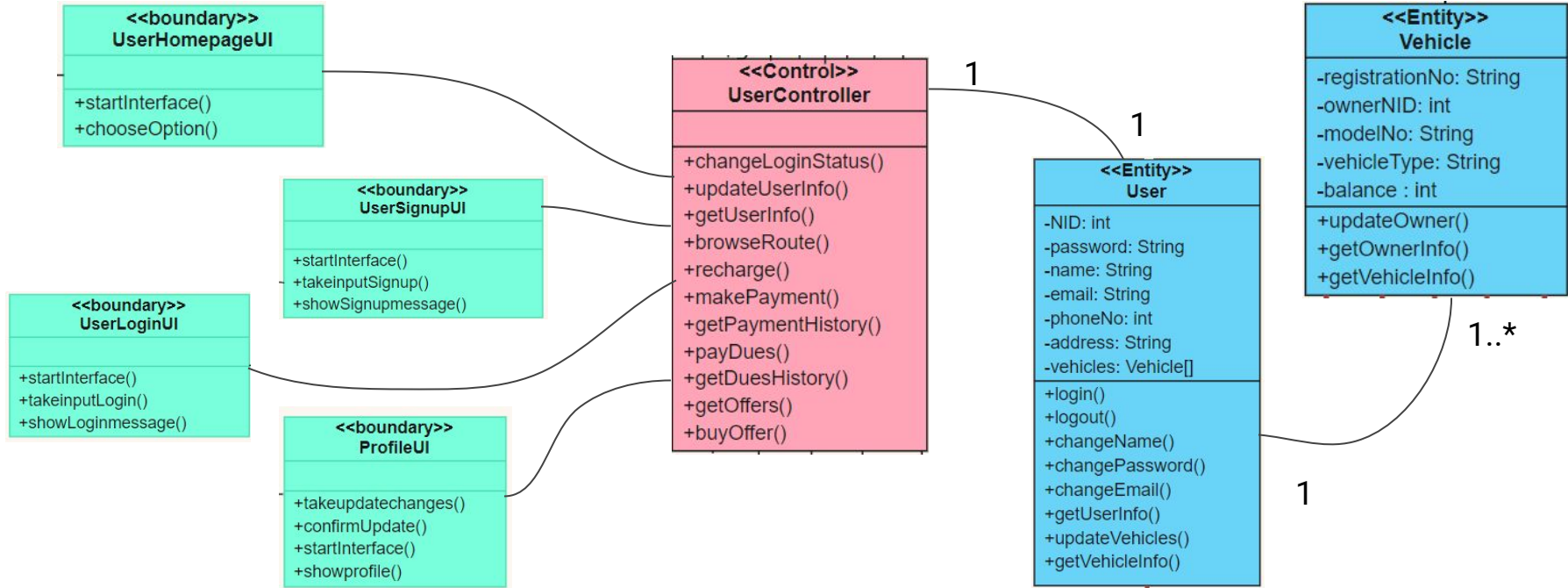
Class Diagram: high level



ER Diagram

# User: Profile Management

## Implementation View



# 1. User Module

## 1.2 Financial Management



# User: Financial Management

## Description

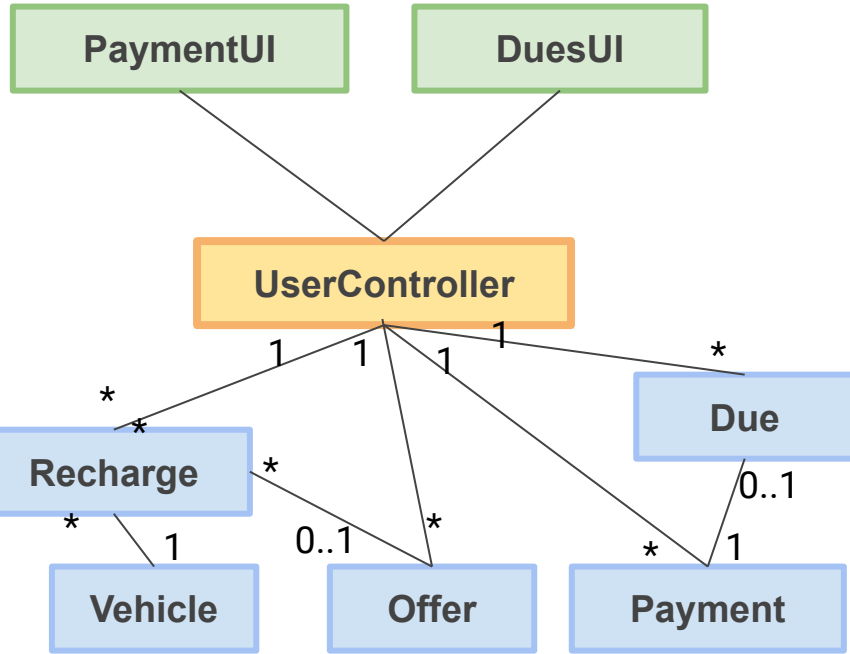
User financial management sub module has the following tasks:

- Recharge User wallet
- Pay for selected toll booths
- Recharging using various gateways
- View list of dues
- Pay pending dues

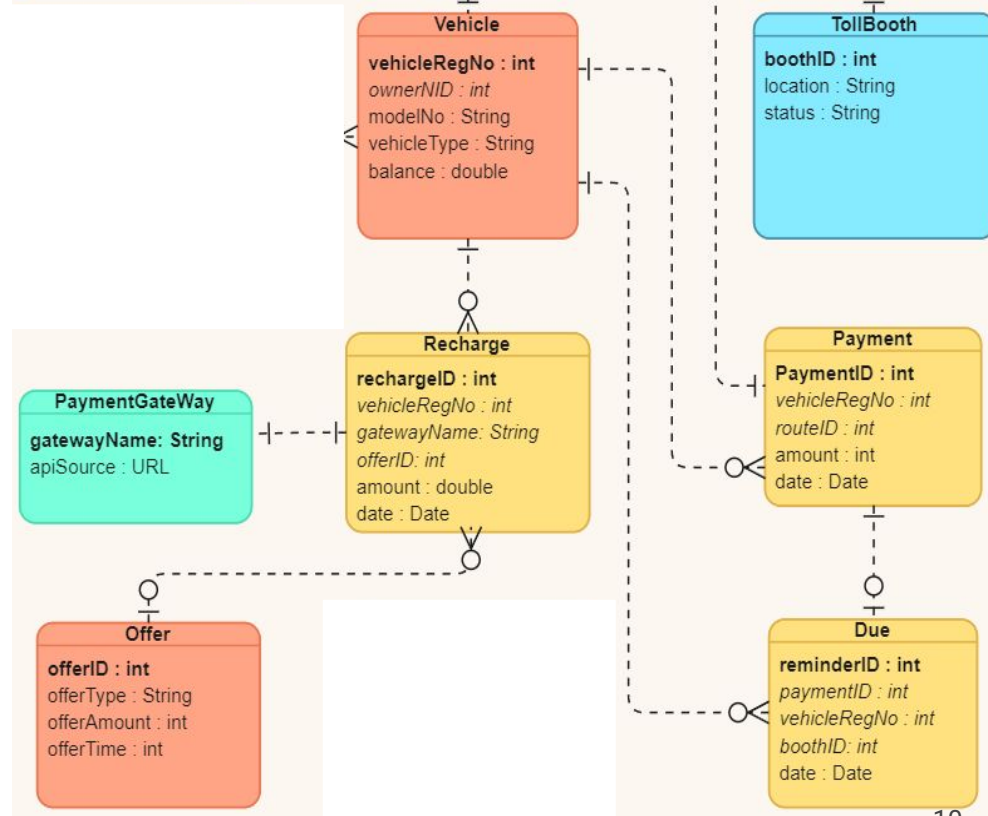
Model	View	Controller
Recharge Due Payment Offer Vehicle PaymentGateway	PaymentUI DuesUI OffersUI	UserController

# User: Financial Management

## High Level View



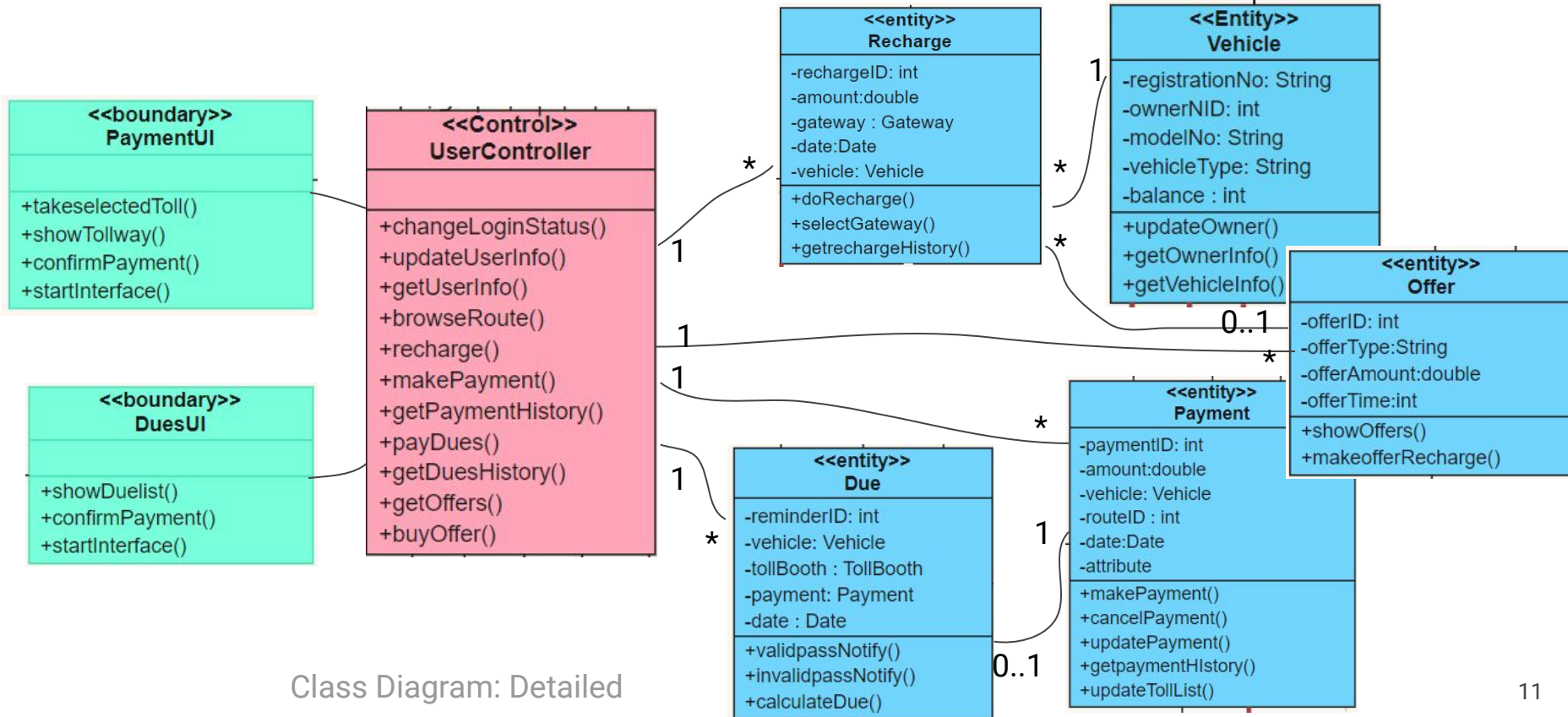
Class Diagram: high level



ER Diagram

# User: Financial Management

## Implementation View



Class Diagram: Detailed

# 1. User Module

## 1.3 Route Management

# User: Route Management

## Description

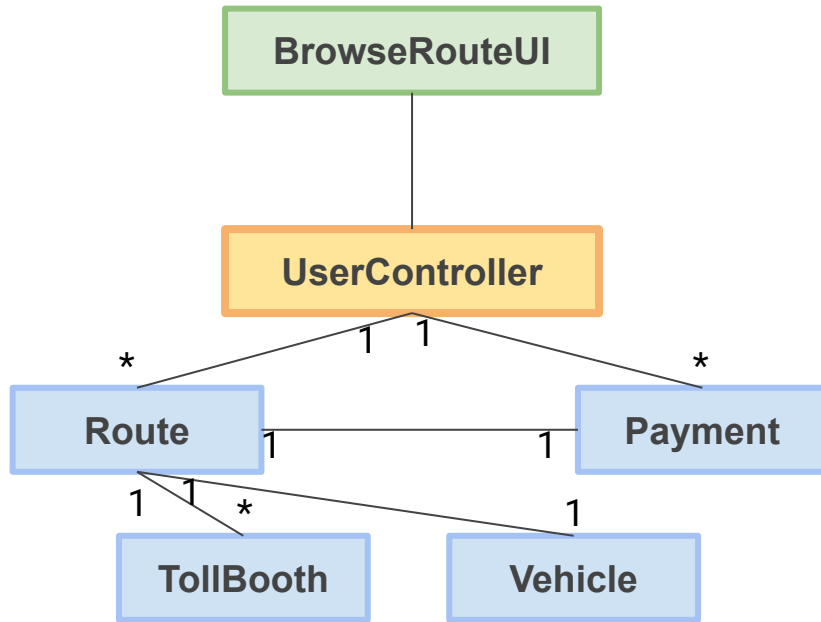
User route management sub module has the following tasks:

- Browse routes in map
- See available toll booths
- Selectively or generally select tollbooths for payment

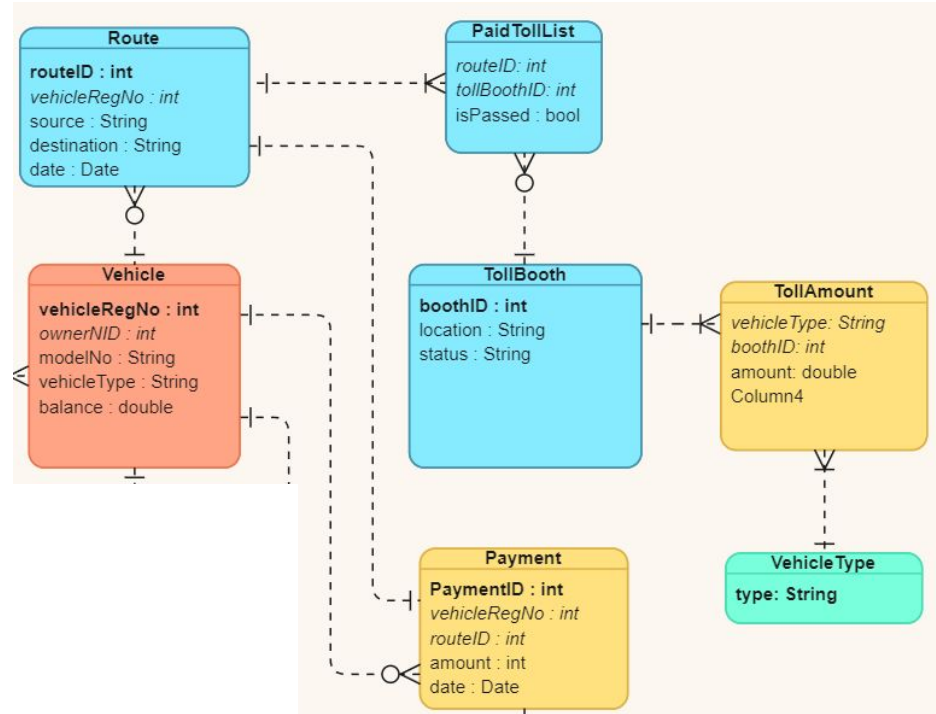
Model	View	Controller
Route TollBooth Payment Vehicle	BrowseRouteUI	UserController

# User: Route Management

## High Level View



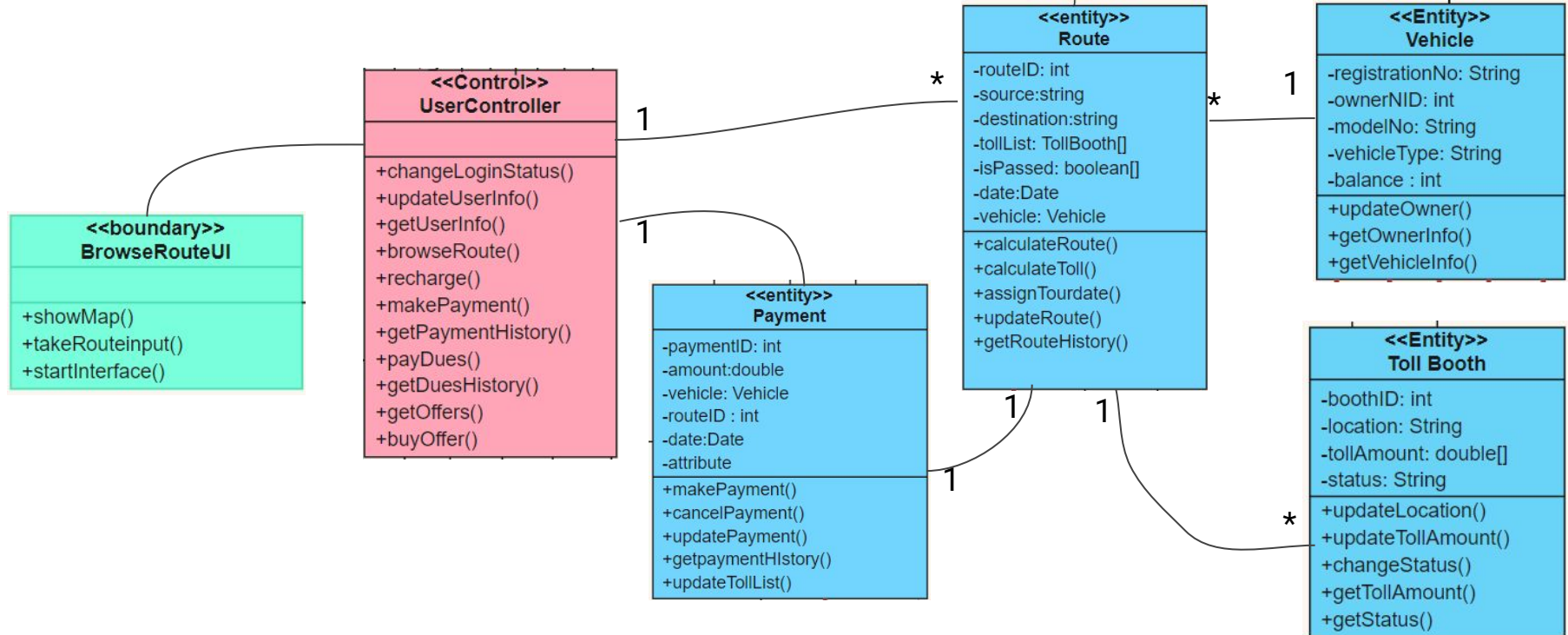
Class Diagram: high level



ER Diagram

# User: Route Management

## Implementation View



# 1. User Module

## 1.4 User History



# User: User History

## Description

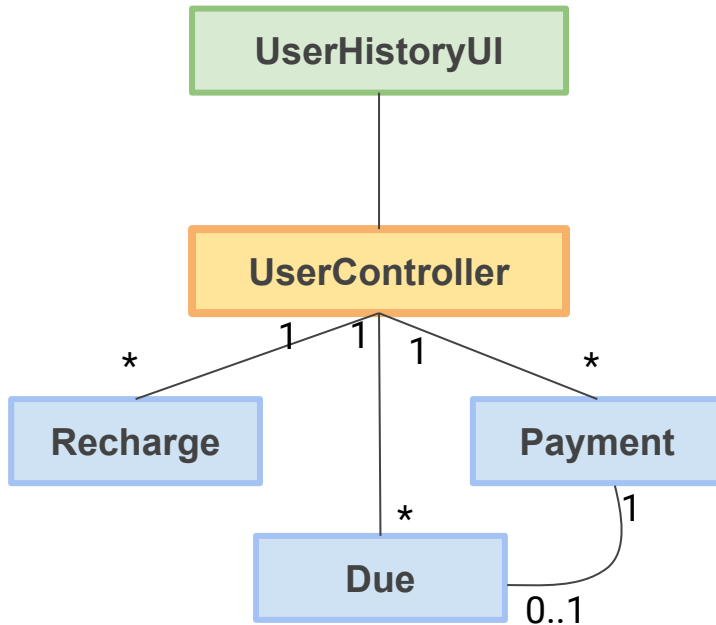
User History sub module has the following tasks:

- View Recharge History
- View dues history
- View Transaction History
- View statistics

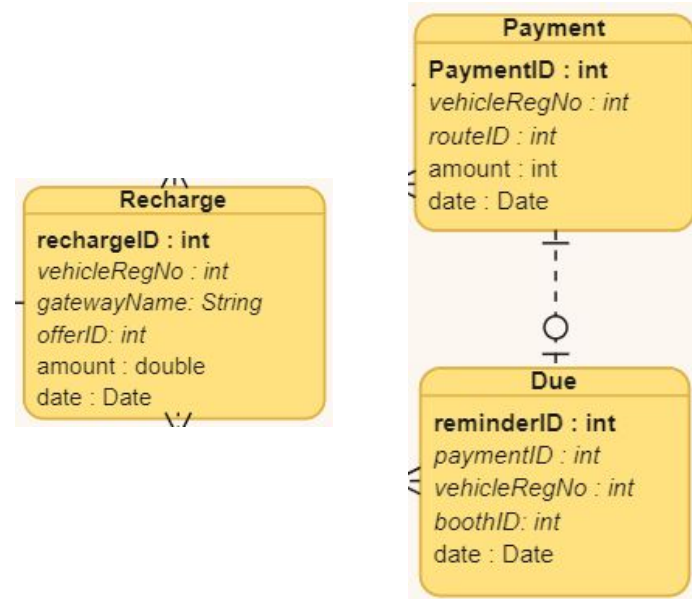
Model	View	Controller
Recharge Due Payment	UserHistoryUI	UserController

# User: User History

## High Level View



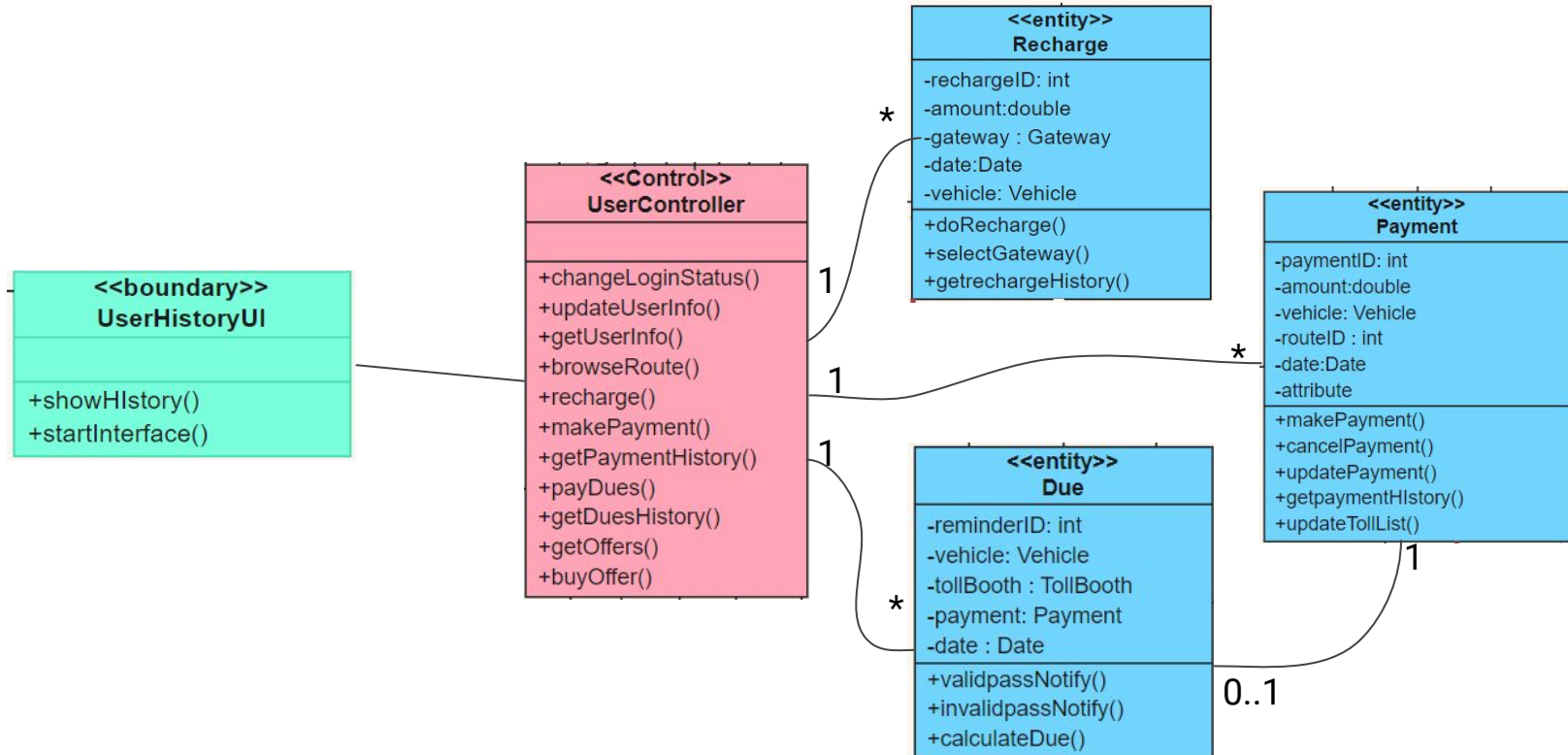
Class Diagram: high level



ER Diagram

# User: User History

## Implementation View



Class Diagram: Detailed

# **2. Admin Module**

## **2.1 Profile Management**

# Admin: profile management

## Description

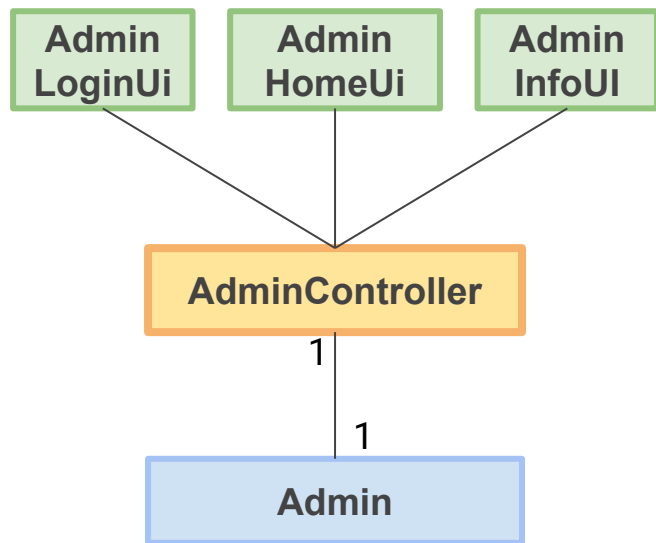
Admin profile management sub module has the following tasks:

- Log in
- Sign Up
- Profile Info View
- Profile Info Edit
- Homepage navigation

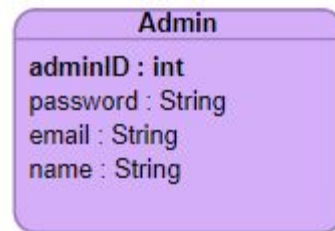
Model	View	Controller
Admin	AdminLoginUi AdminHomeUi AdminInfoUI	Admin Controller

# Admin: profile management

## High Level View



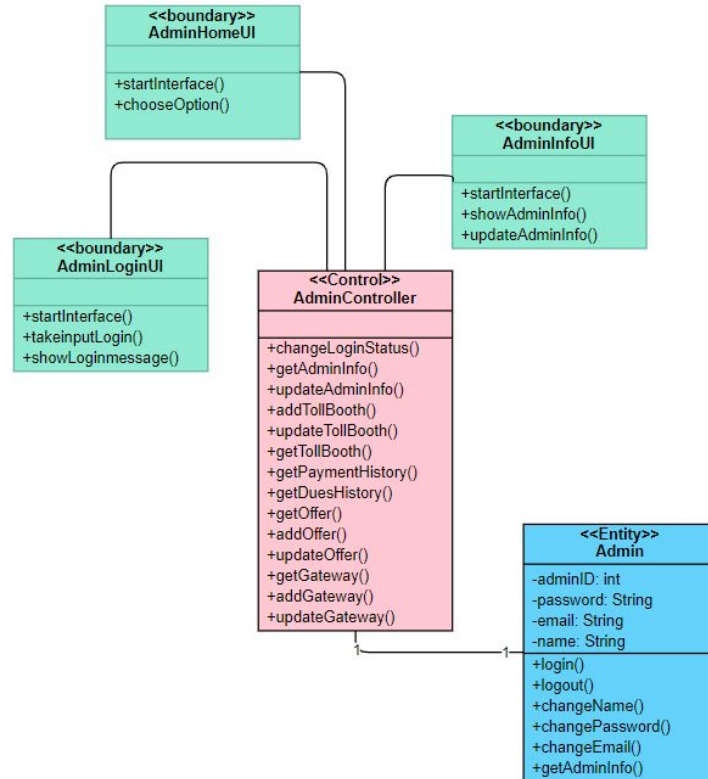
Class Diagram: high level



ER Diagram: high level

# Admin: profile management

## Implementation View



Class Diagram: Detailed

# **2. Admin Module**

## 2.2 Offer Management



# Admin: offer management

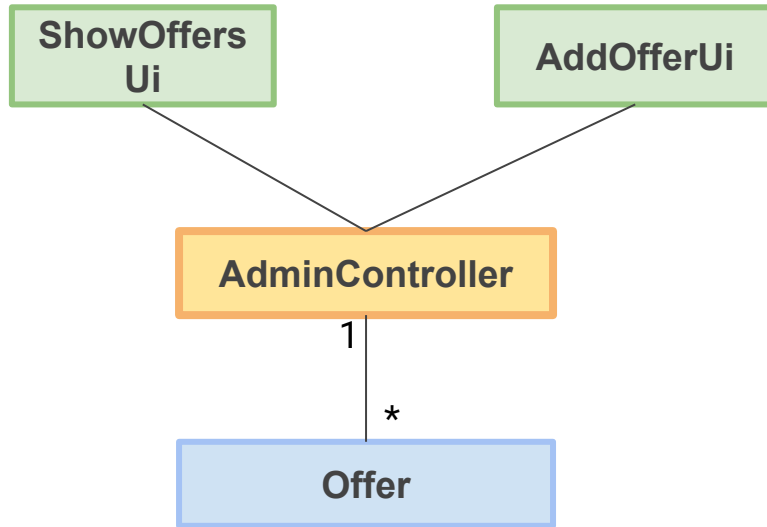
## Description

Admin offer management sub module has the following tasks:

- Add new Offer
- Update existing Offer
- Show Offer view

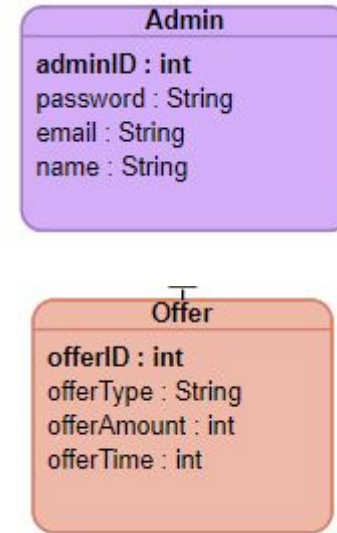
Model	View	Controller
Admin	AddOfferUi offersShowUi	Admin Controller

# Admin: offer management



Class Diagram: high level

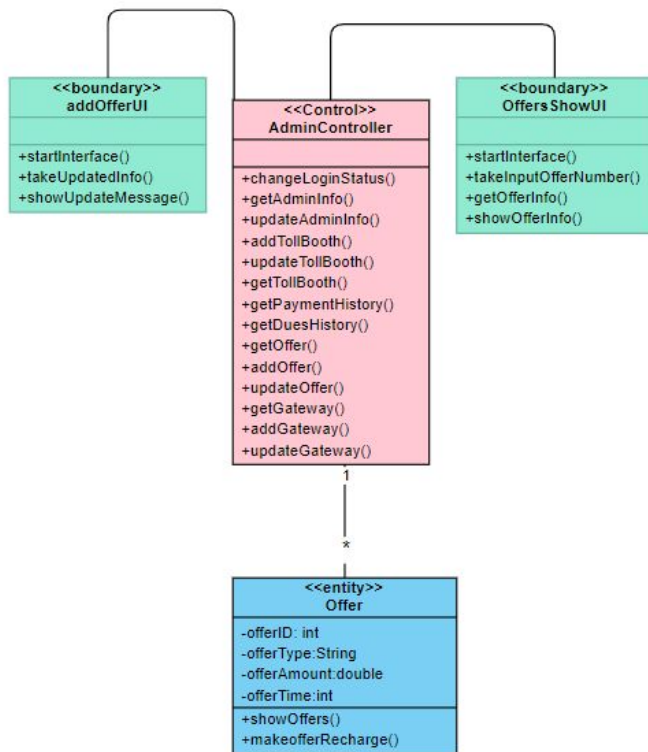
## High Level View



ER Diagram: high level

# Admin: offer management

## Implementation View



# **2. Admin Module**

## 2.3 Toll Booth Management

# Admin: toll booth management

## Description

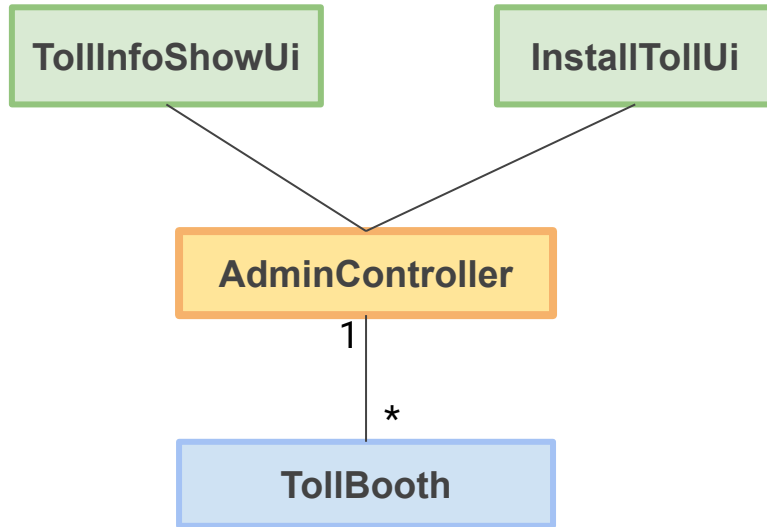
Admin toll booth management sub module has the following tasks:

- Install new toll booth
- Update existing toll booth
- Show toll booth info view

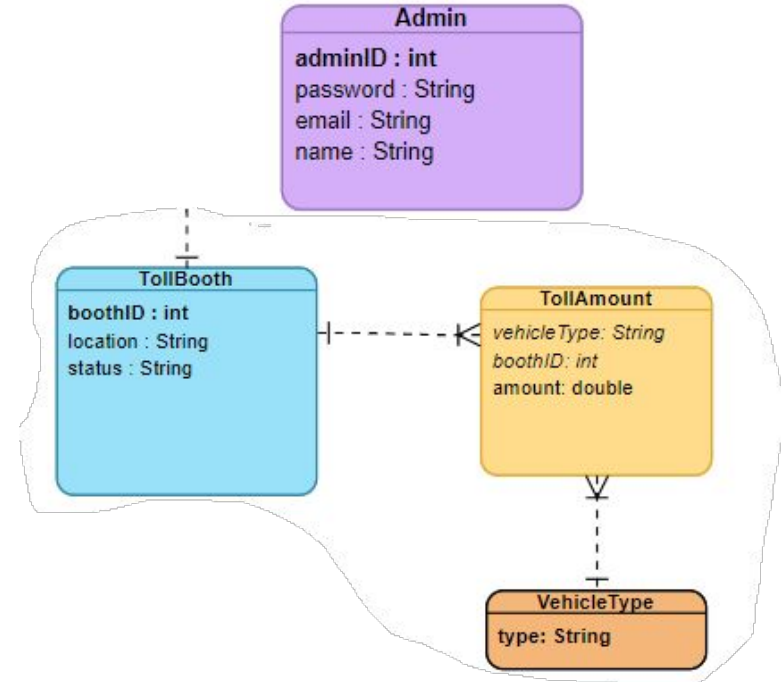
Model	View	Controller
TollBooth	TollInfoShowUi InstallTollUi	Admin Controller

# Admin: toll booth management

## High Level View



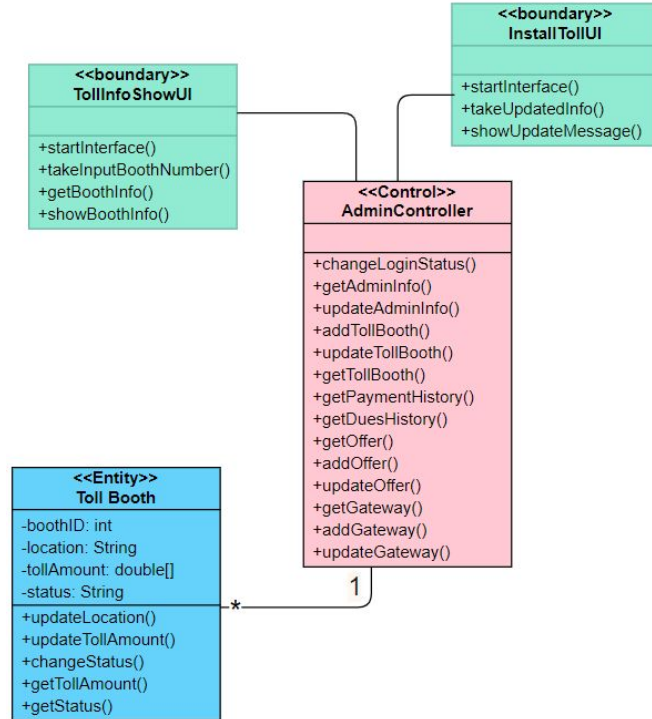
Class Diagram: high level



ER Diagram: high level

# Admin: toll booth management

## Implementation View



Class Diagram: Detailed

# **2. Admin Module**

## 2.4 Gateway Management



# Admin: gateway management

## Description

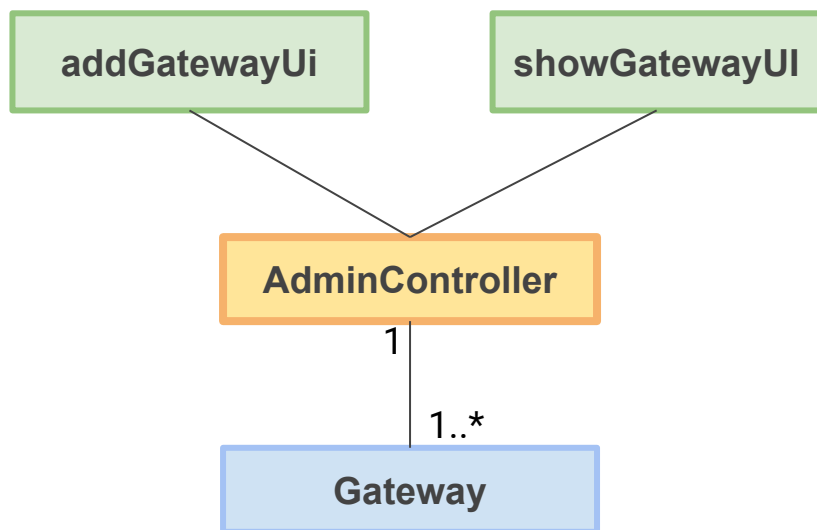
Admin gateway management sub module has the following tasks:

- Add a new gateway
- Update gateway
- Get gateway info view

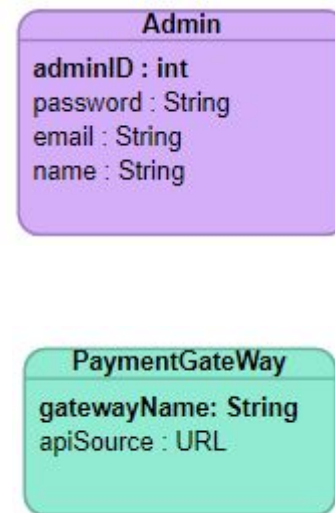
Model	View	Controller
Gateway	addGatewayUi showGatewayUi	Admin Controller

# Admin: gateway management

## High Level View



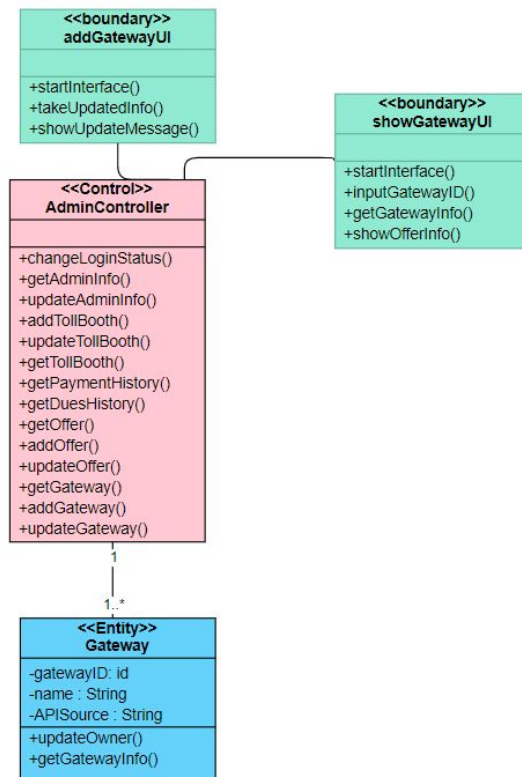
Class Diagram: high level



ER Diagram: high level

# Admin: gateway management

## Implementation View



Class Diagram: Detailed

# **2. Admin Module**

## 2.5 Financial Management

# Admin: financial management

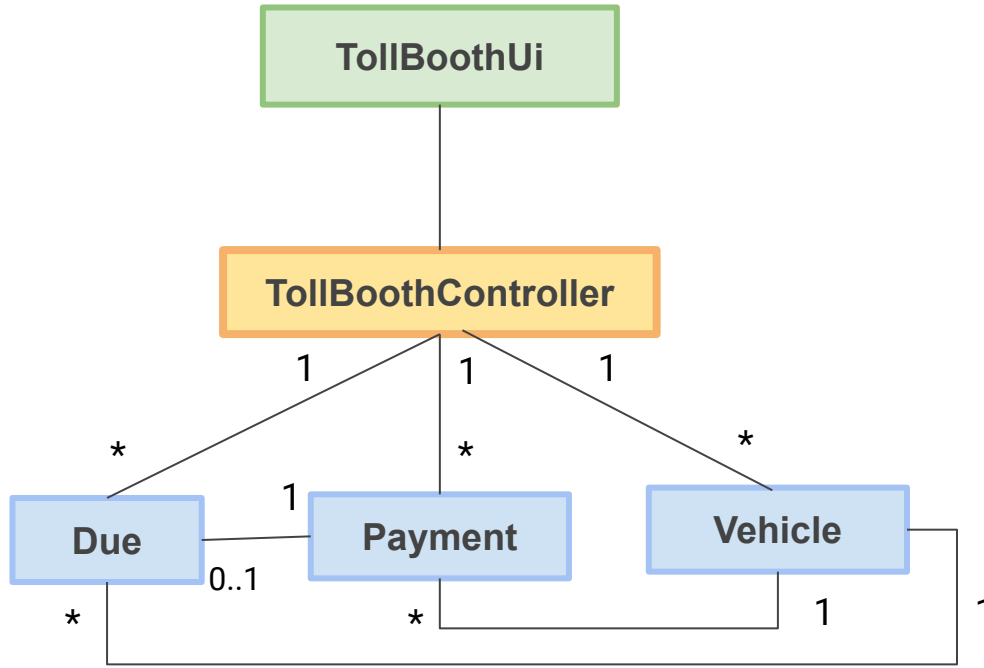
## Description

Admin financial management sub module has the following tasks:

- See Payment history
- See Dues history
- See payment or due history for chosen vehicle number

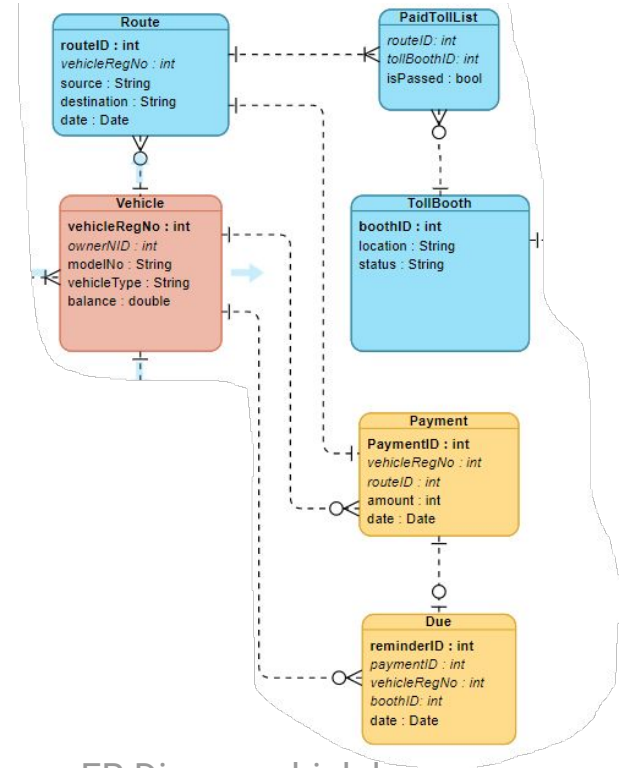
Model	View	Controller
Payment Due Vehicle	showPaymentsUi showDuesUi	Admin Controller

# Admin: financial management



Class Diagram: high level

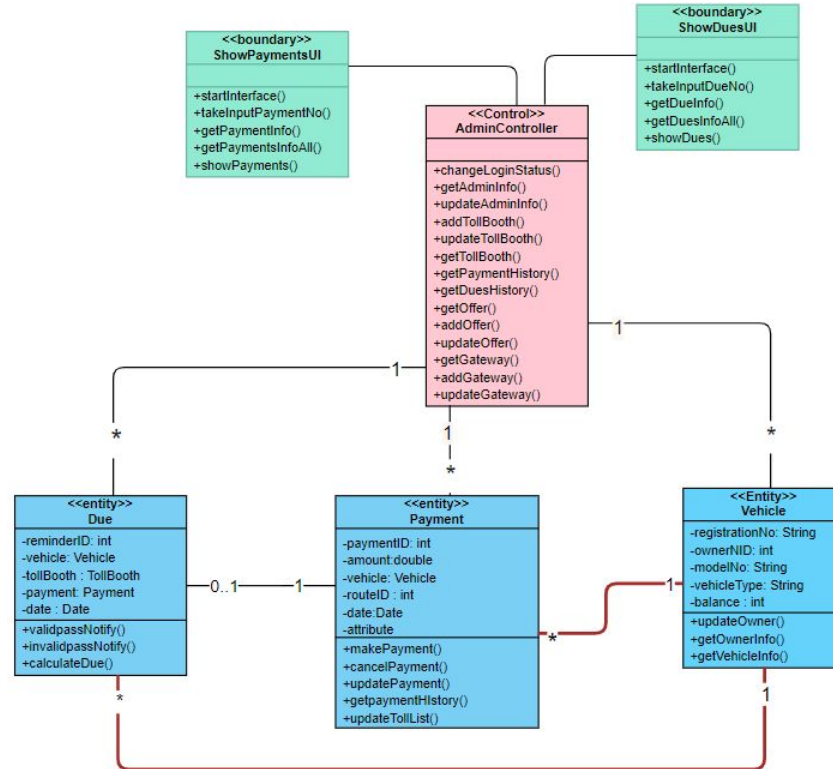
## High Level View



ER Diagram: high level

# Admin: financial management

## Implementation View



Class Diagram: Detailed

# 3. Toll scanning Module

## 3.1 Cash Management



# Toll Booth: cash management

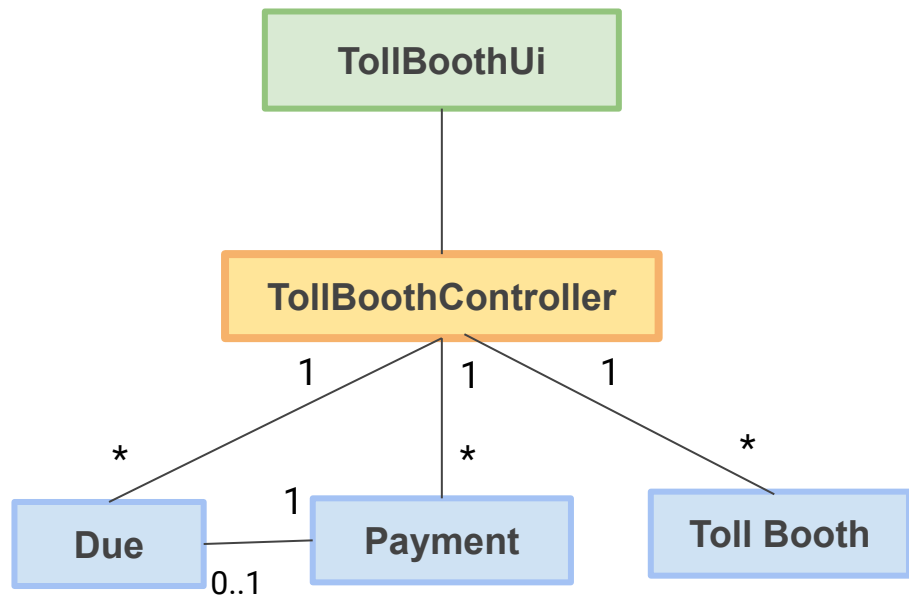
## Description

Admin cash management sub module has the following tasks:

- Check payment for a scanned vehicle
- Create due for a unpaid passed vehicle

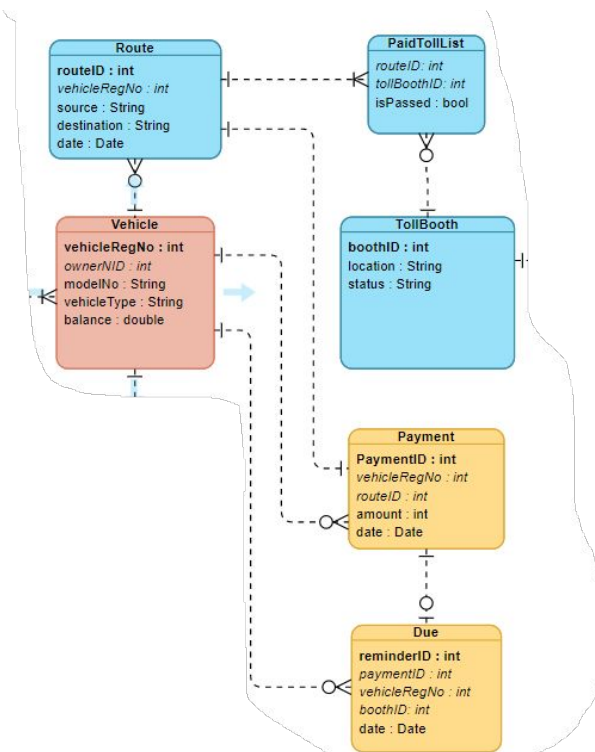
Model	View	Controller
Due Payment TollBooth	TollBoothUi	TollBooth Controller

## Toll Booth: cash management



## Class Diagram: high level

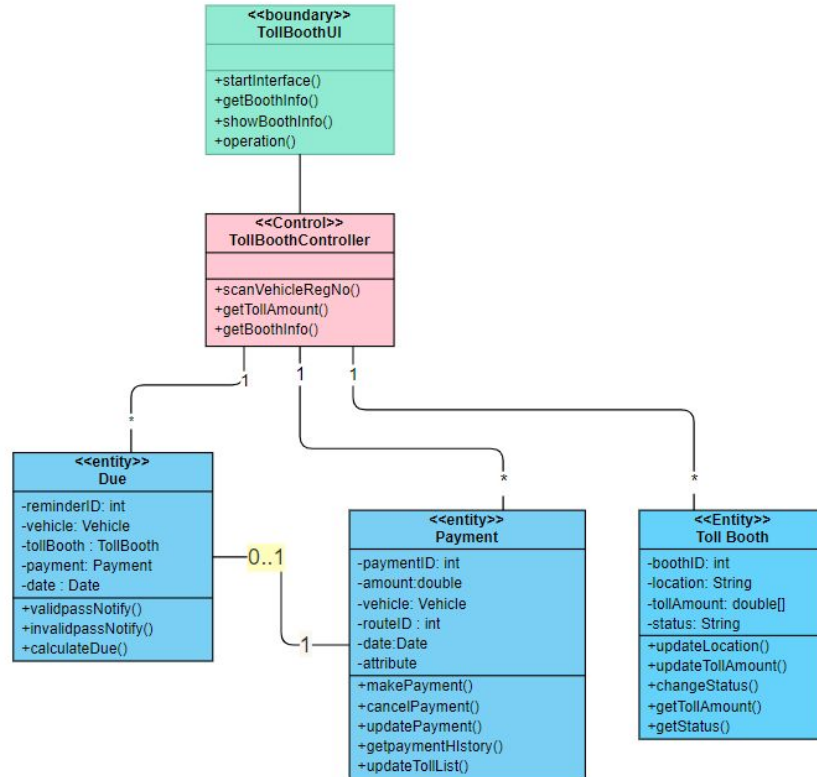
## High Level View



## ER Diagram: high level

# Toll Booth: cash management

## Implementation View

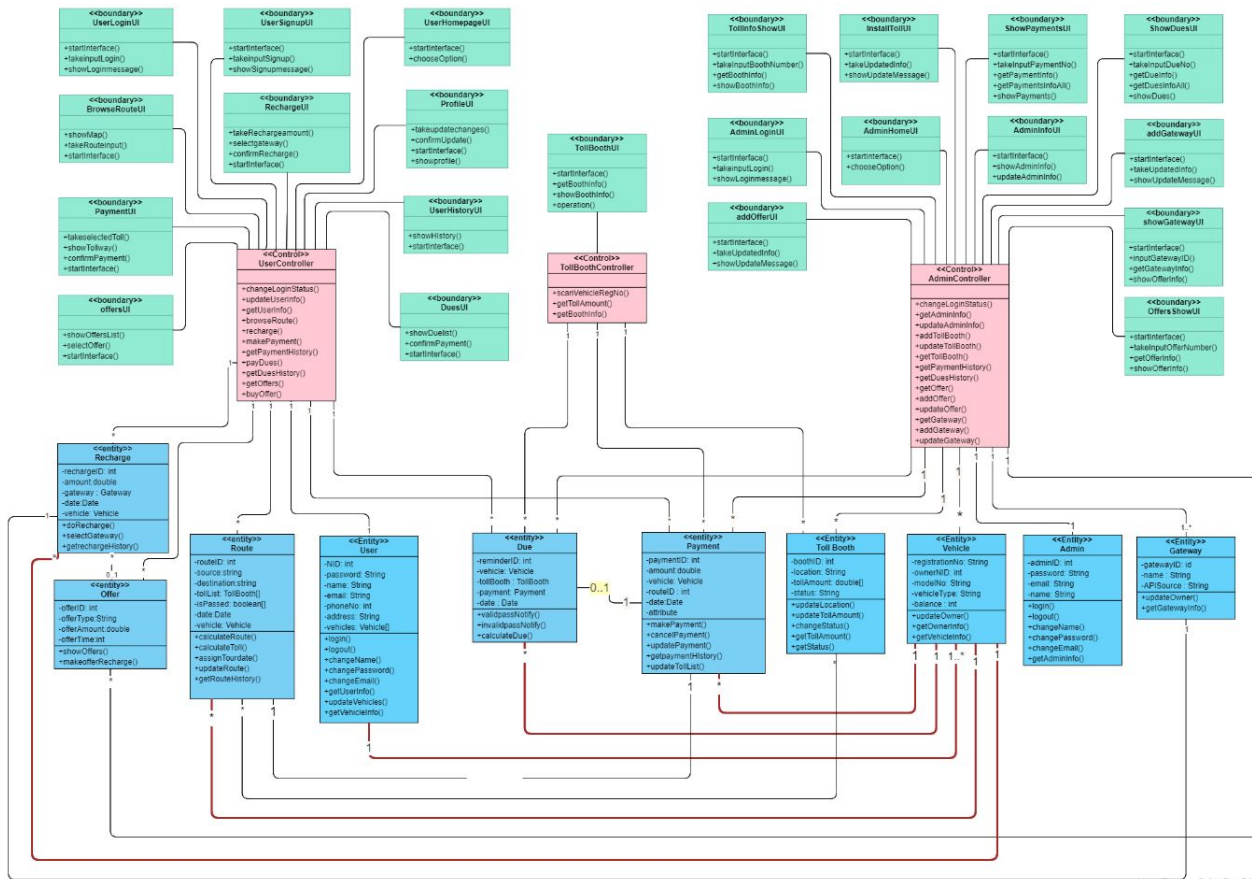


Class Diagram: Detailed

# Final UML Diagrams

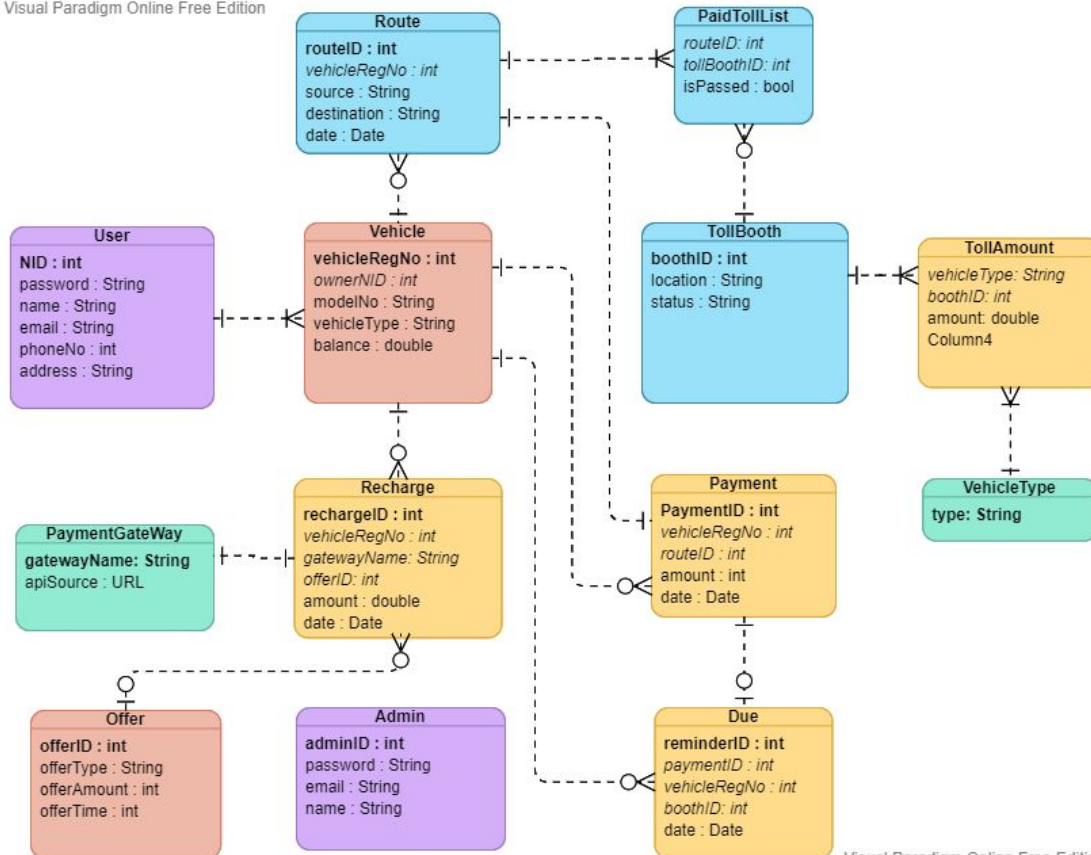
Class Diagram & Entity Relationship Diagram

# Full Class Diagram



# Full Entity Relationship Diagram

Visual Paradigm Online Free Edition



Visual Paradigm Online Free Edition



# Thank You