



tram tracker

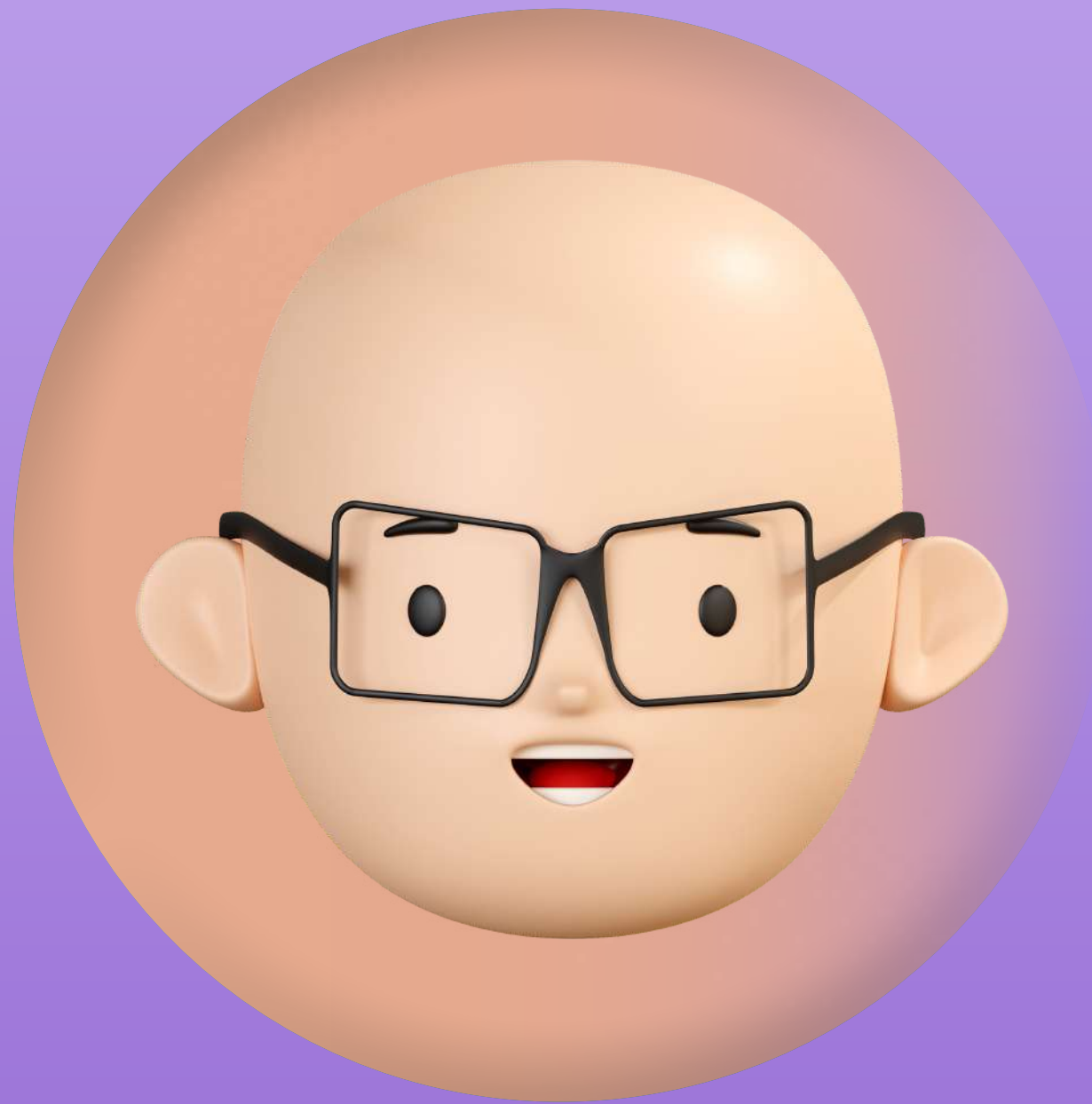
Computer
Engineering
Project

Mahidol University

User Groups



Passenger



Driver



Admin



System Feature

Notification of arrival
Realtime Tracking
Route Searching

Driver Schedule

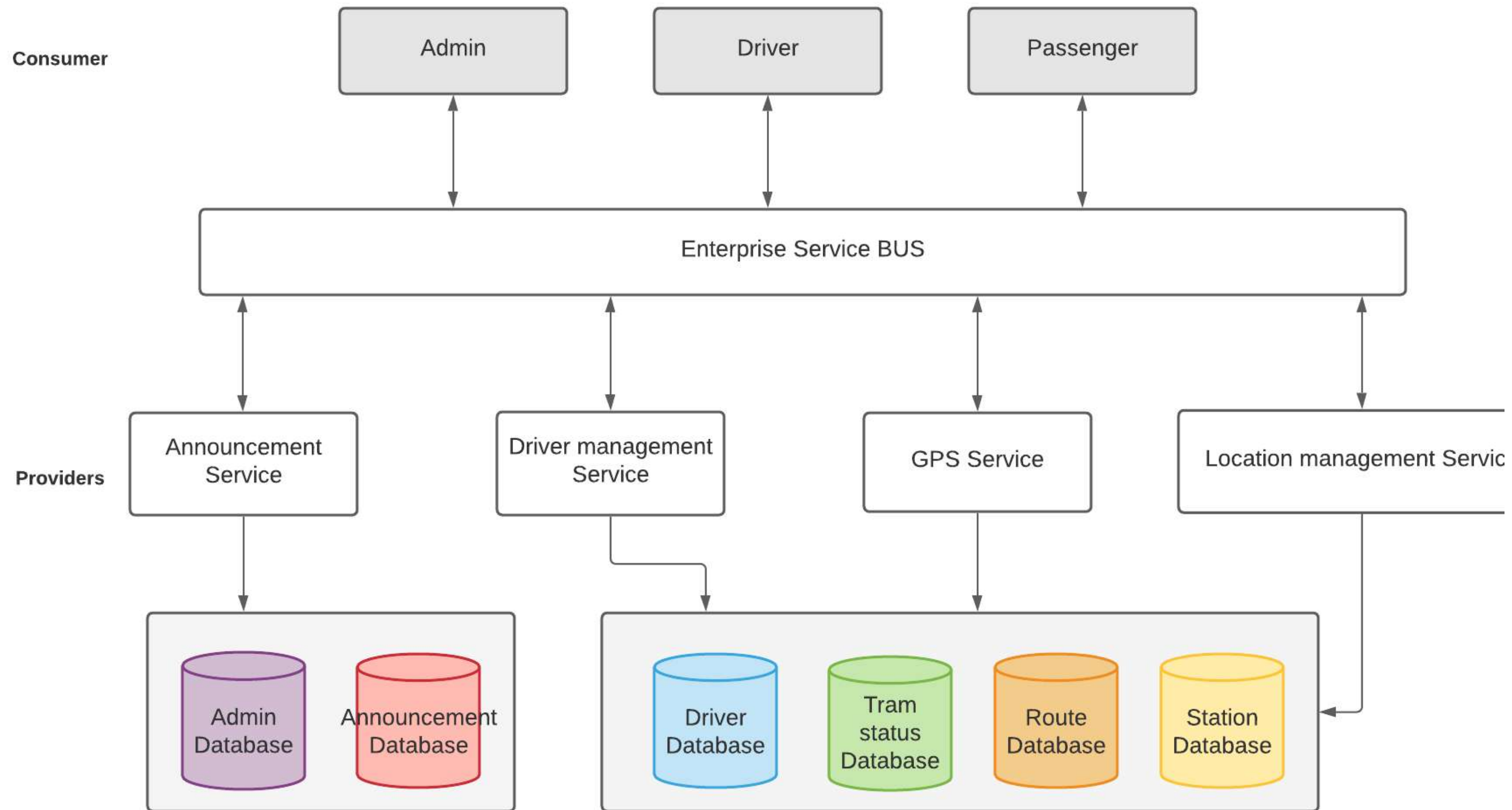
Route Changing
Announcement System
Driver Management


Architecture



Architecture

Service-oriented architecture



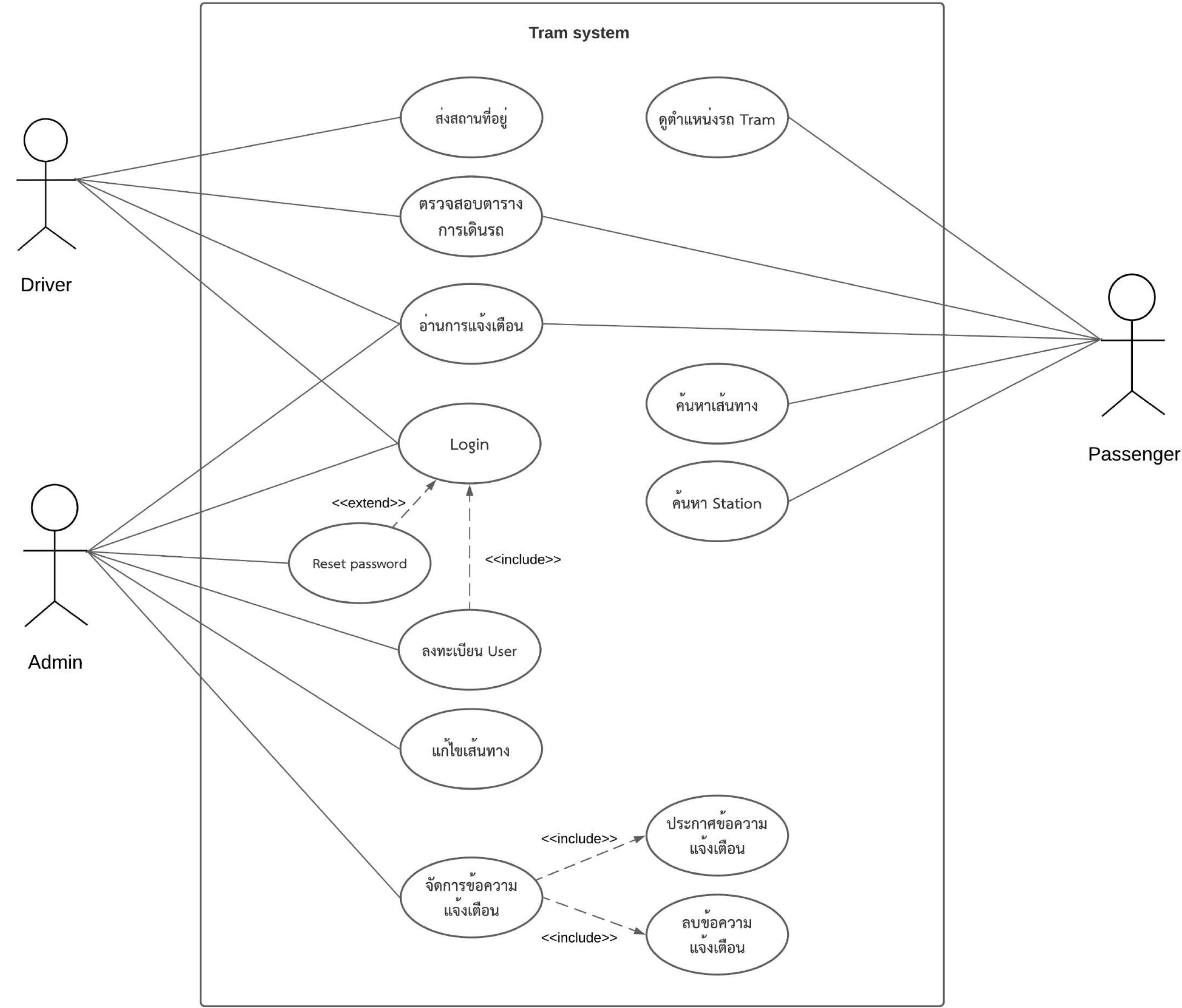


Software Analysis

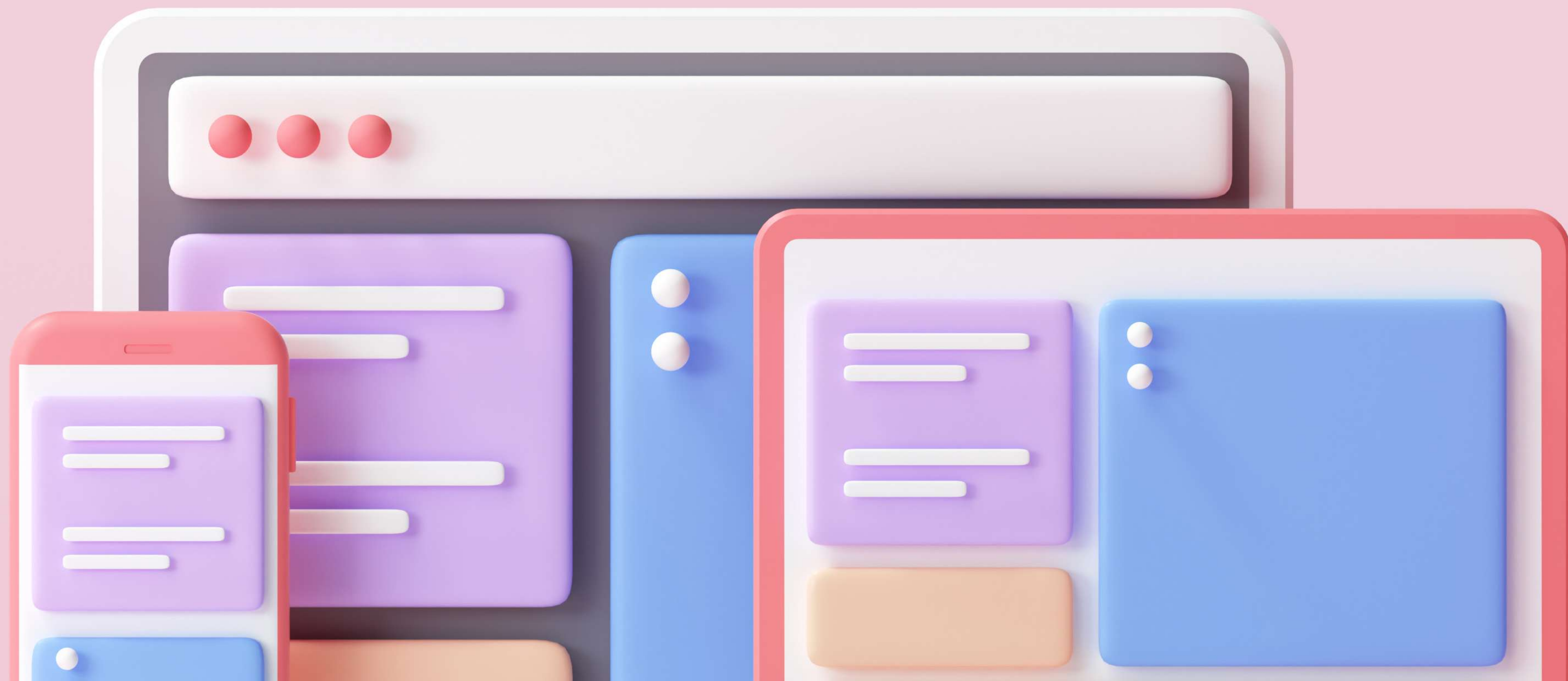
Software Analysis

Use Case Diagram

UML



Software Design

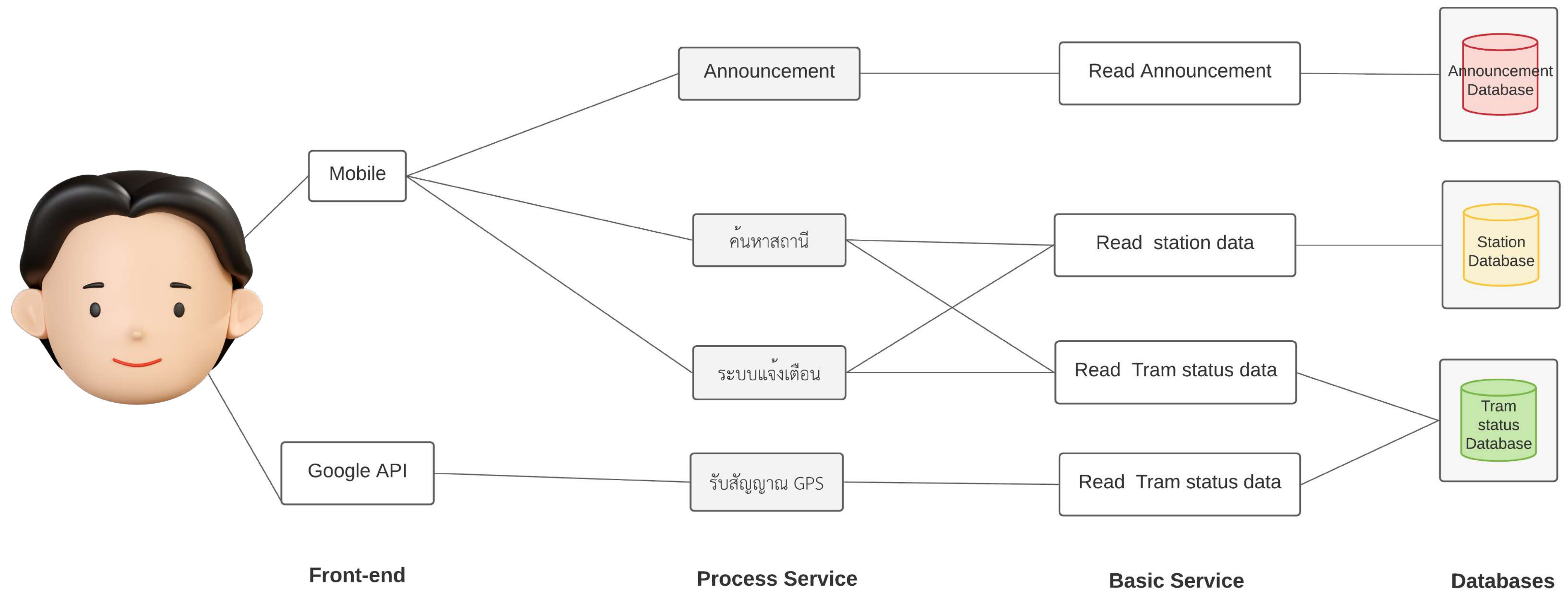


Service

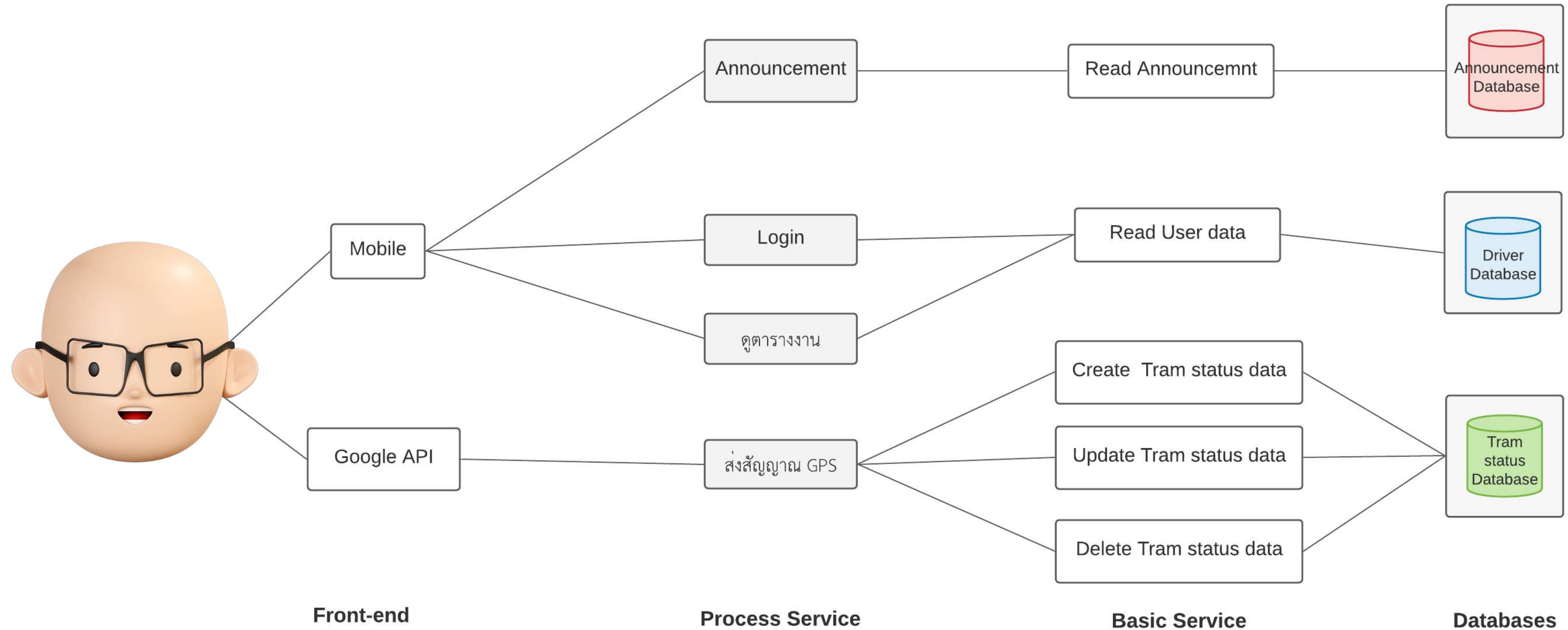
Based on
**Service-oriented
architecture**



Passenger

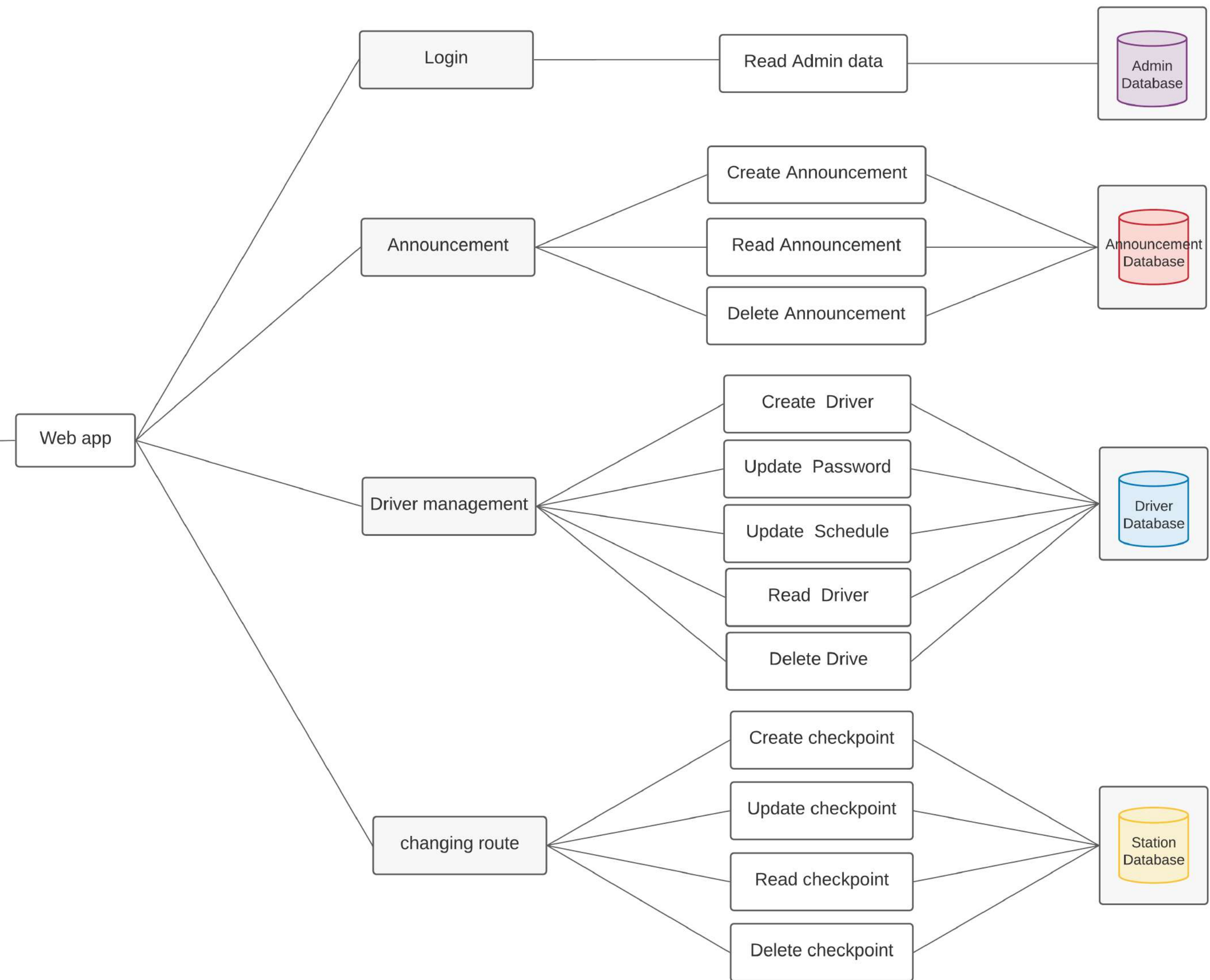


Driver





Admin



Front-end

Process Service

Basic Service

Databases



Backend Service

NoSQL Database

Station

```
{
  "_id":{
    "$oid":"619e6bf7d69c0e181ef61a9f"
  },
  "name":"Faculty of Engineering Building 3",
  "loc":{
    "lat":13.7957852,
    "long":100.3239707
  },
  "schedule":[
    {
      "color": green,
      "mon-fri":["06:42", "20.22",
10],
      "sat-sun":["08:28", "18:08", 20]
    },
    ...
  ]
}
```


Driver

```
{
  "_id": {
    "$oid": "61a00d228537d8805064b87e"
  },
  "username": "driver001",
  "password": "123456",
  "name":      "fname",
  "tasks": [
    {"day": "mon", "start": "06:00", "end":
    "12:00", "line": "red"},
    {"day": "tue", "start": "06:00", "end":
    "12:00", "line": "red"}
    ...
  ]
}
```

Tram

```
{
  "_id":{
    "$oid":"619e753ad69c0e181ef61ac1"
  },
  "id": "g100",
  "color":"green",
  "deviation": 5.00
  "loc":{
    "lat":13.7944705,
    "lon":100.3230998
  },
  "status":"online",
  "driver_id":{
    "$oid": "61a00d228537d8805064b87e"
  }
}
```

Route

```
{
  "_id": {
    "$oid": "61a013948537d8805064b8c8"
  },
  "color": "green",
  "releasing_time": "07:45",
  "station": ["Faculty of Engineering Building 3", ...]
  "coordinates": [
    {
      "lat": 13.7944705,
      "lon": 100.3230998
    },
    {
      "lat": 13.7957852,
      "lon": 100.3239707
    },
    {
      "lat": 13.7960521,
      "lon": 100.3239801
    }
    ...
  ]
}
```


Admin

```
{
  "_id":{
    "$oid":"619e76b2d69c0e181ef61ac4"
  },
  "username":"admin",
  "password":"123456",
  "phone":"012-3456789",
  "email":"example@mahidol.ac.th"
}
```

Announcement

```
{
  "_id": {
    "$oid": "61a00a548537d8805064b86d"
  },
  "no": "0001",
  "date/time": "2020-11-26 00:00:00",
  "message": "maintenance, traffic jam",
  "admin_id":{
    "$oid": "619e76b2d69c0e181ef61ac4"
  }
}
```

A 3D rendering of a smartphone with a white back and a red front. The phone is shown with several layered, semi-transparent UI elements. A white rounded rectangle with three orange dots is at the top. Below it is a white rounded rectangle with an orange screen area and three blue dots. A white rounded rectangle is on the right side. A red rounded rectangle is at the bottom. The phone is set against a dark blue background with two white spheres on a surface in the foreground.

Front-End UX/UI Design



Application Platforms

Mobile

Passanger
Driver

Web

Admin

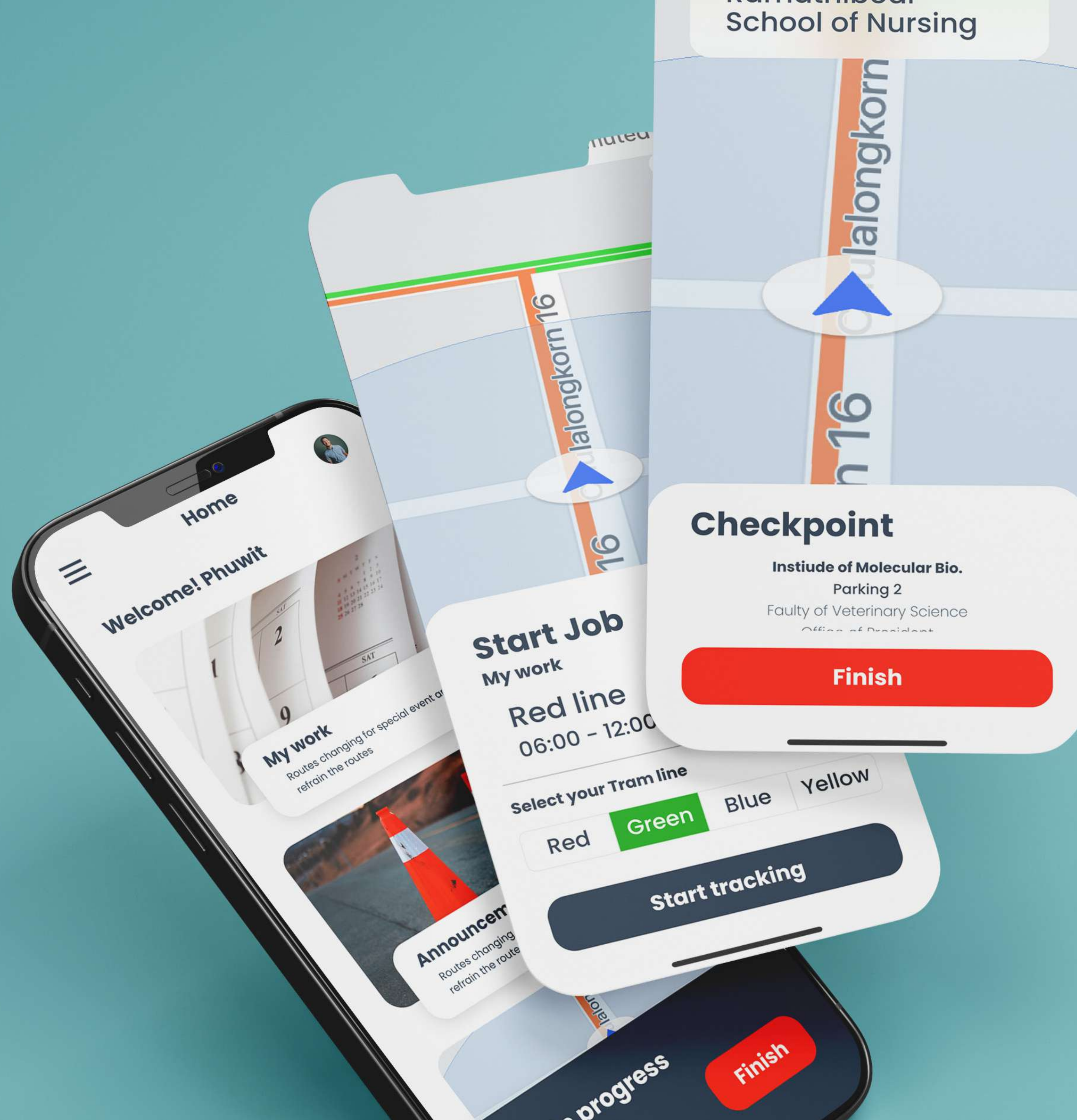
Passanger Mobile App

Map
Schedule
Announcement



Sign-in Tracking Work Schedule Announcement

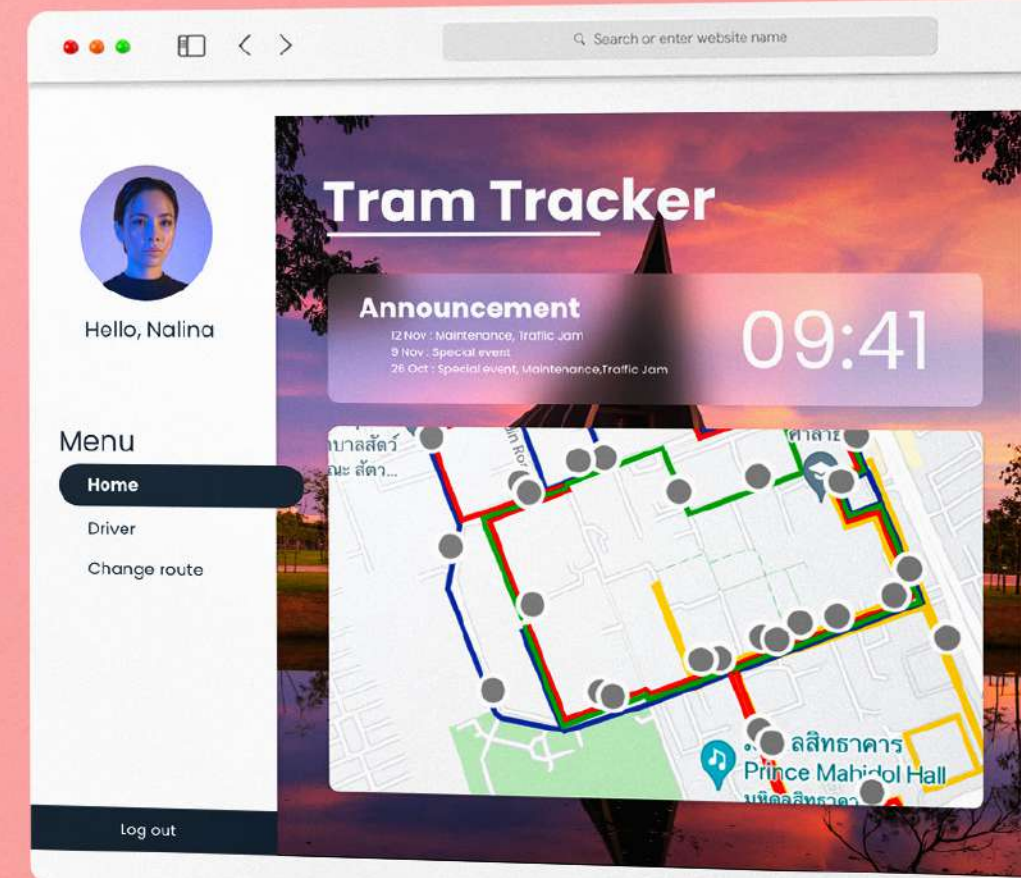
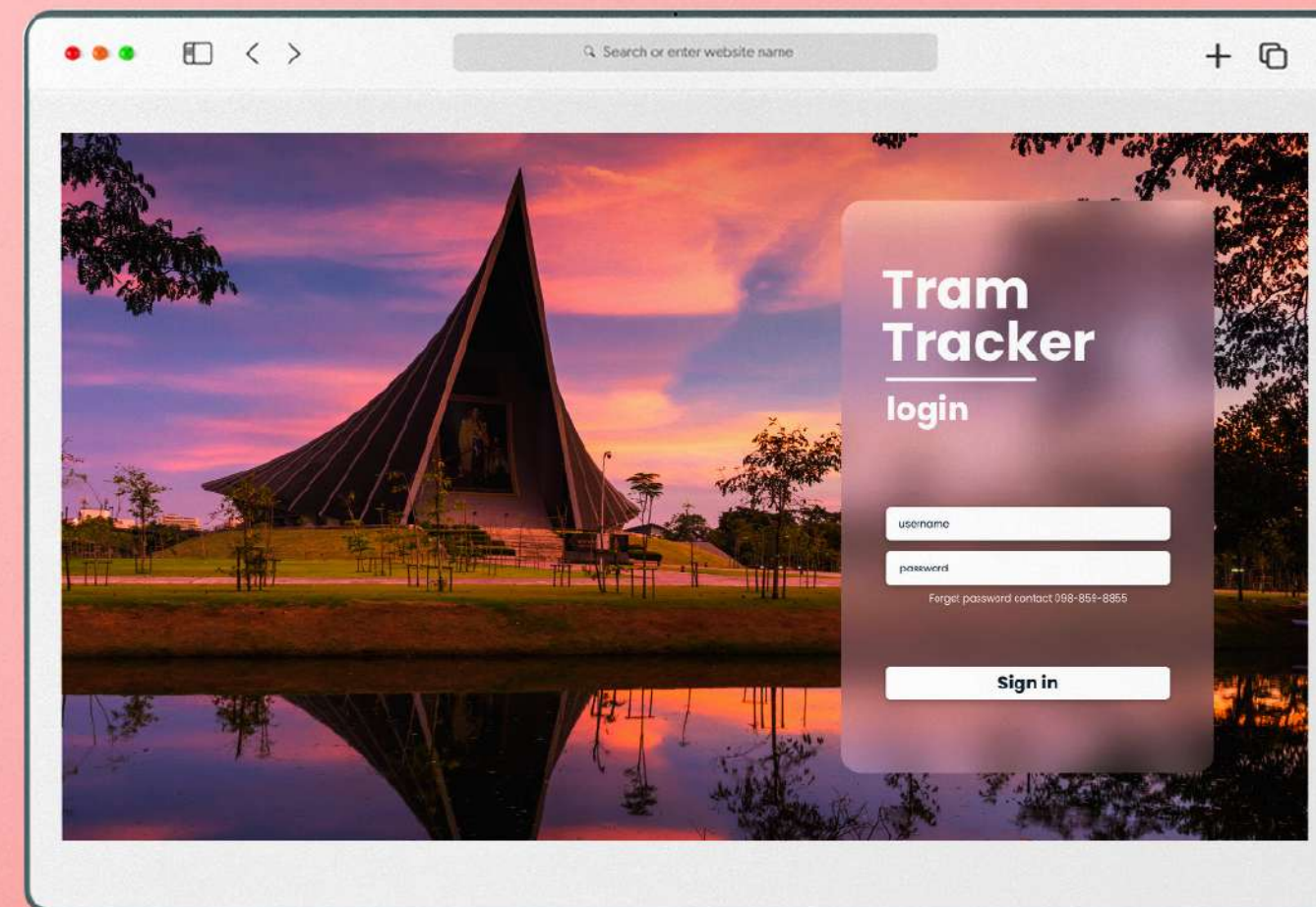
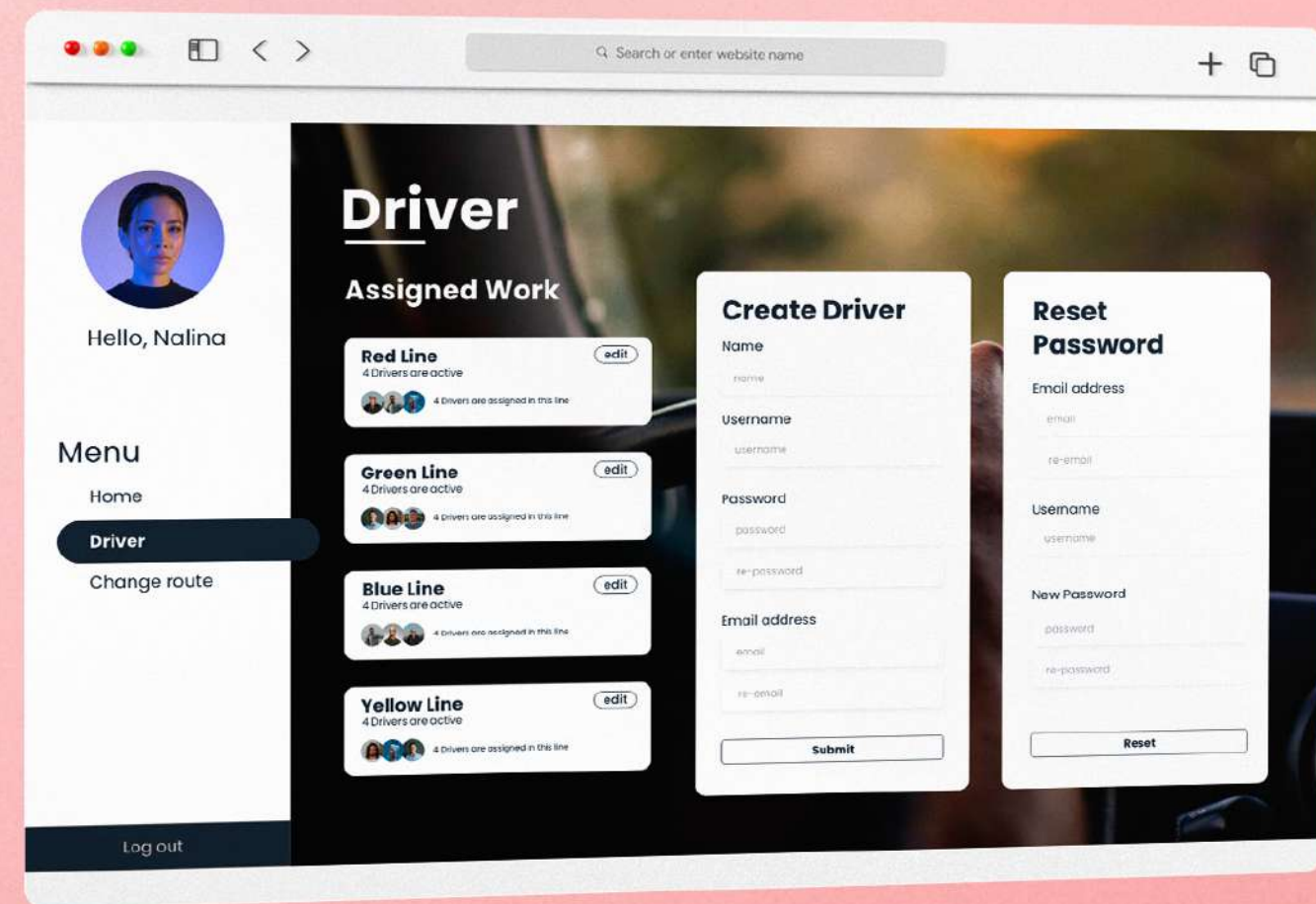
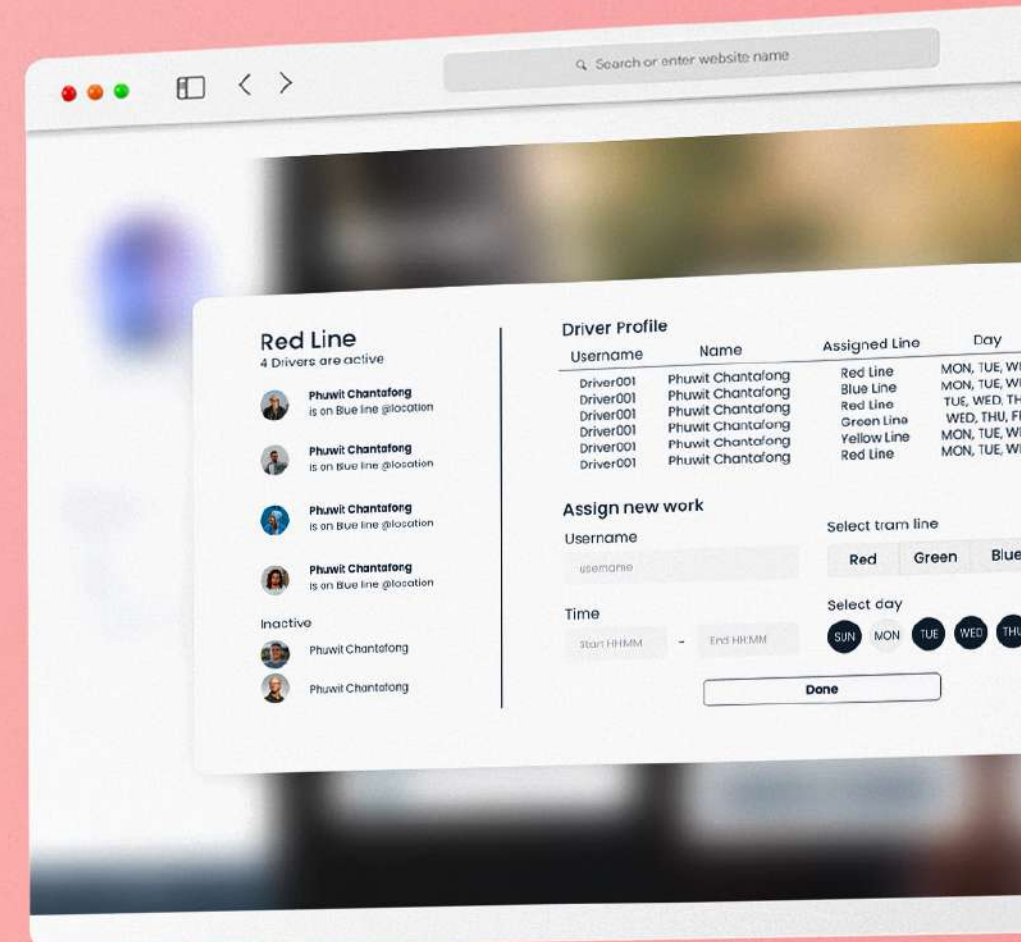
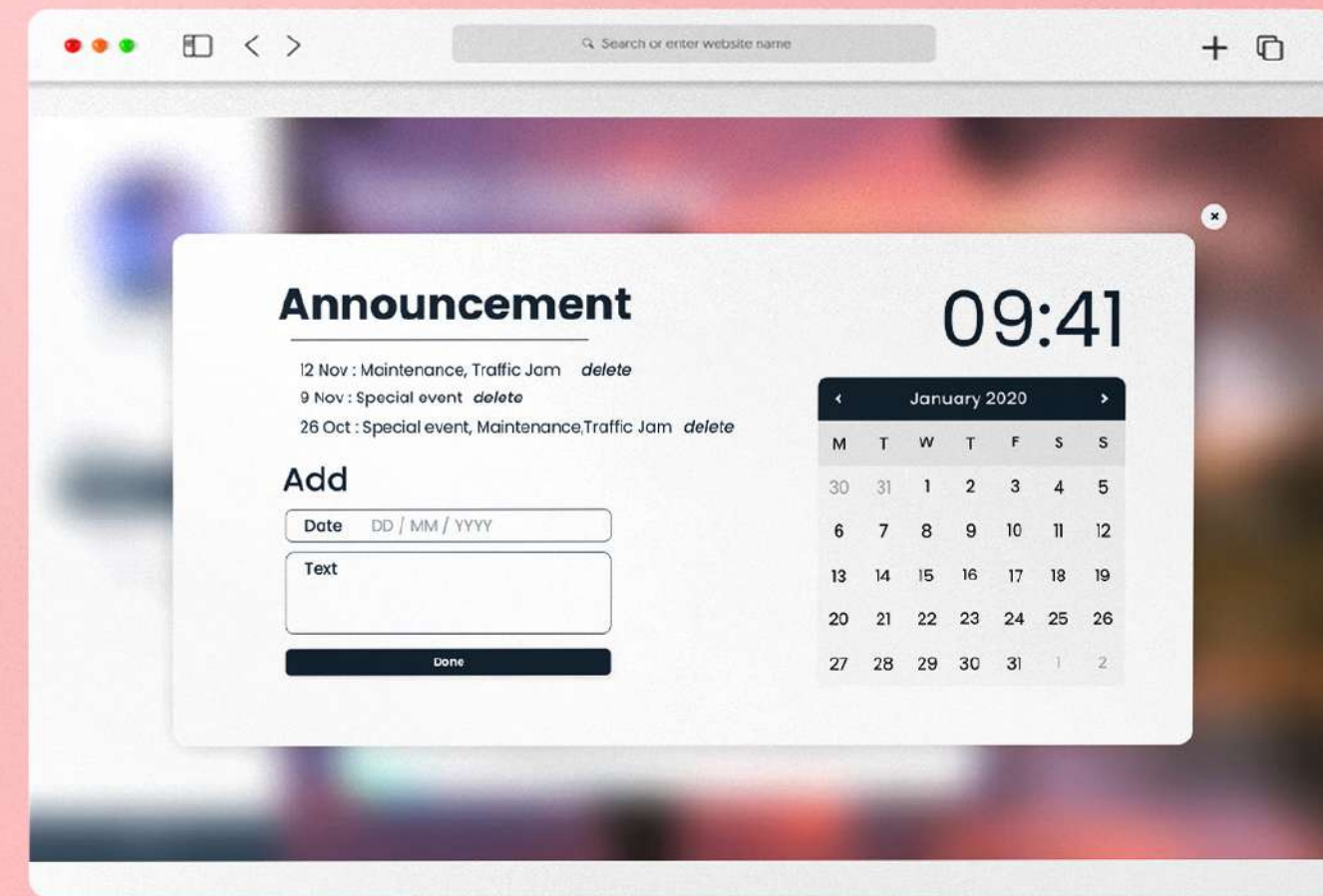
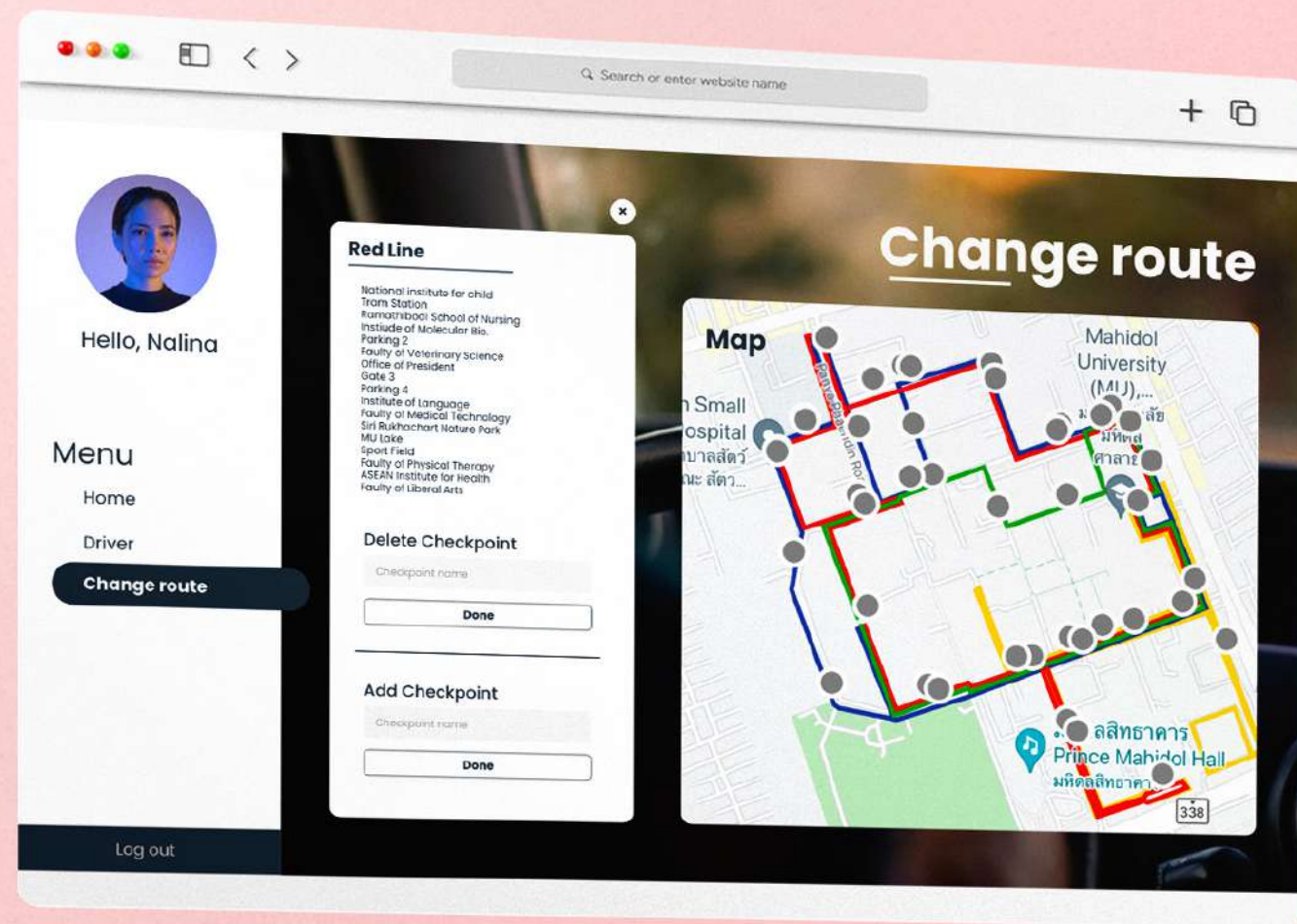




Tracking
Feature

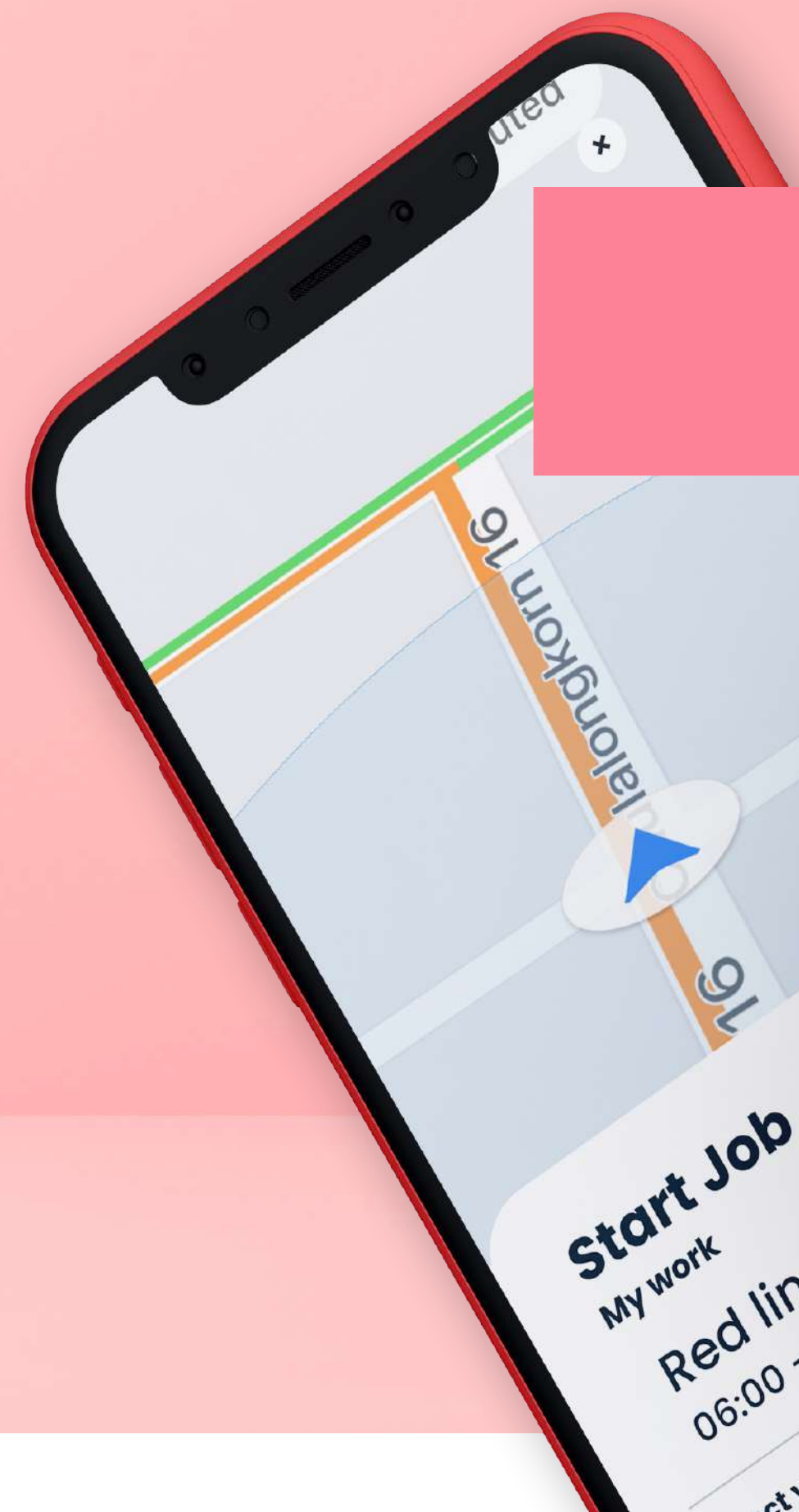
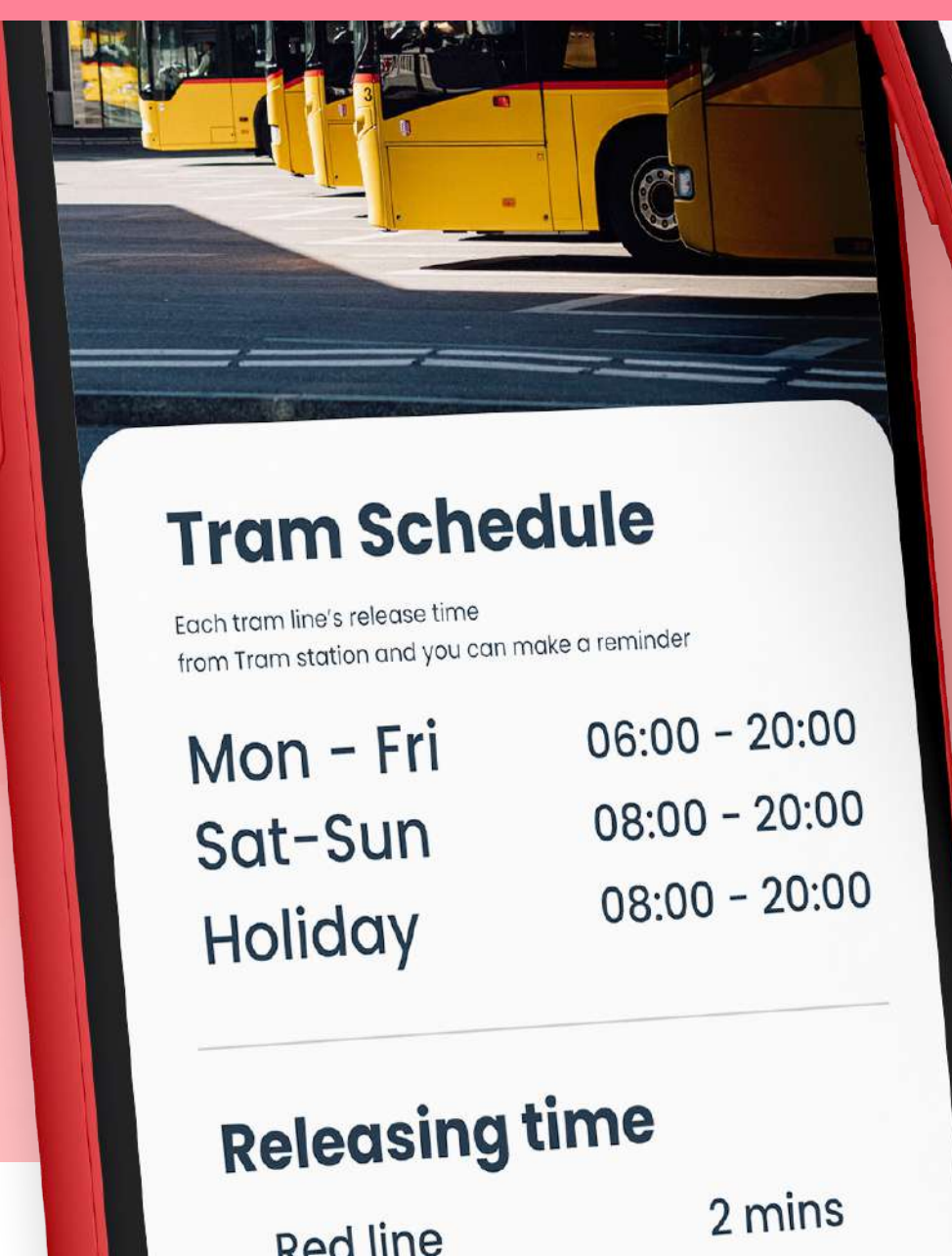
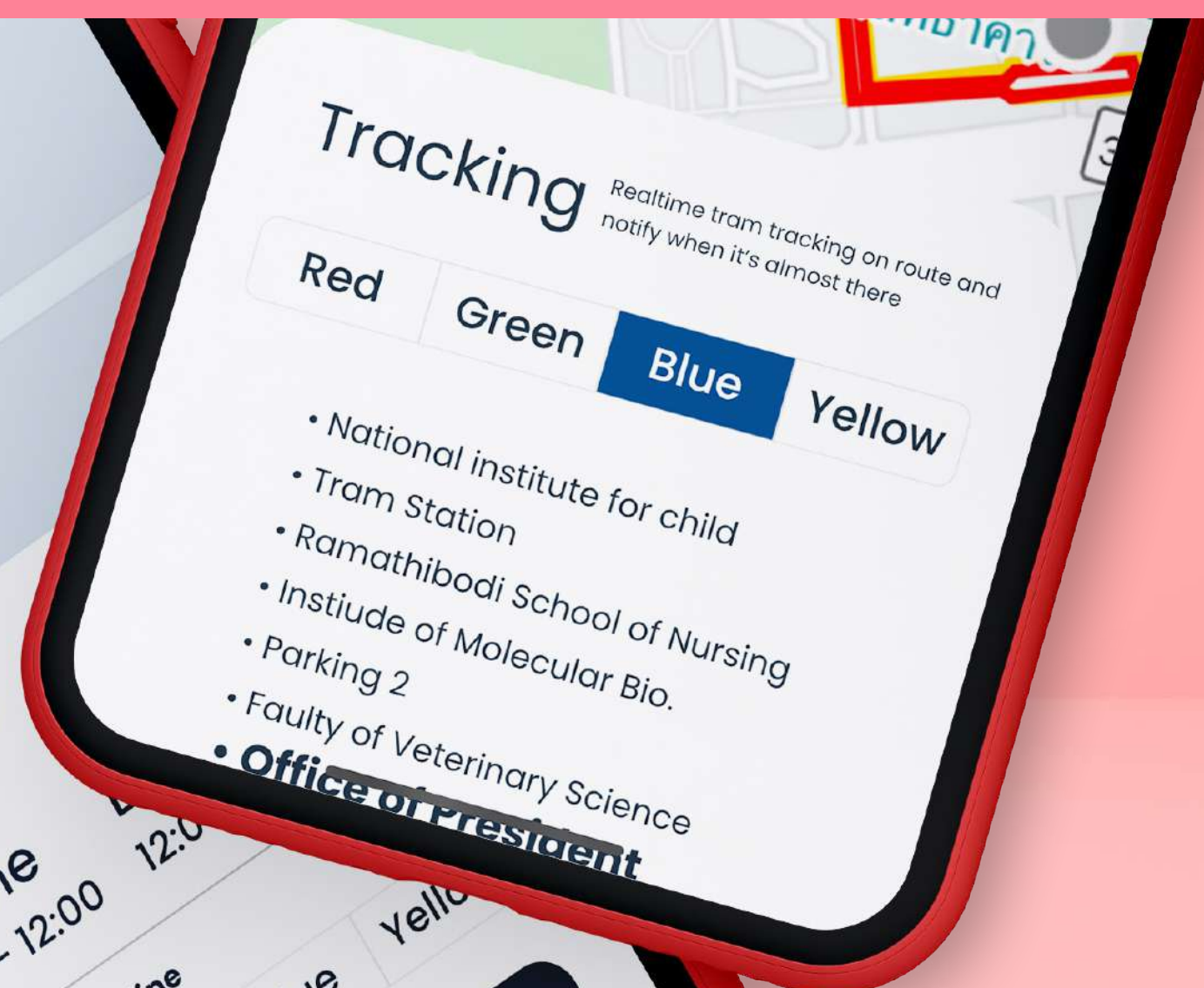
Driver
**Mobile
App**

Admin Web App



Changing Route
Driver Managment
Announcement System

Let's Preview



Thank you
for your
attention

Group.6

phuvit
6213131

pared
6213203

pakkaporn
6213207

(Zeta)