

SOFTWARE REQUIREMENTS SPECIFICATION

(SRS) for the Computerized Bus Season System

Subject name – System Analysis and Design

Subject Code-IS2106

Group name-Quick Pass

Issue date- 3-4-2024

Student Details:

Student Name	Index number
A.S.S. Fernando	21CIS0046
P.D.K.P.Gunawardhana	21CIS0083
R.P.D. Nethmini	21CIS0052

Table of Contents

- 1. Introduction 3**
 - 1.1 Purpose..... 3
 - 1.2 Intended Audience 3
 - 1.3 Scope..... 3
- 2. Overall Description 3**
 - 2.1 Product Perspective 3
 - 2.2 Product Features 3
 - 2.3 User Characteristics..... 4
 - 2.4 Assumptions and Dependencies 4
- 3. System Features and Requirements 4**
 - 3.1 Functional Requirements 4
 - 3.2 Non-Functional Requirements..... 4
 - 3.4 User Interfaces..... 5
- 4.System Features 6**
 - 4.1 Er Diagram 6
 - 4.2 User Case diagram 7
 - 4.3 DFD Diagram 8
 - 4.3.1 Level 0 8
 - 4.3.2 Level 1 9
 - 9
 - 4.4 Database Diagram..... 10
- 5.UI/UX Design 11**
 - 5.1 Home page 11
 - 5.2 Passenger Type Page 12
 - 5.3 Workers Registration page..... 12
 - 5.4 Student Registration page 13
 - 5.5 Registration Successful page..... 13
 - 5.6 Log In page 14
 - 5.7 Update Ticket details with User profile page..... 14

5.8 Payment page 15

5.9 Contact Page..... 15

5.10 Scanner Page 16

..... 16

1. Introduction

1.1 Purpose

The purpose of this system is to develop a system where students and regular workers who are using bus service for movement can buy or renew their season passes online. The system aims to facilitate passengers easily purchasing or renewing their bus season passes online, and each passenger will receive unique QR code that can be easily validated by conductors when passengers are boarding the bus.

1.2 Intended Audience

- System developers
- Passengers
- Conductors
- SLTB

1.3 Scope

The scope of this project includes the development of a **web application** that allows for the following functionalities:

- An e-commerce website that enables customers to buy and renew their BUS SEASON passes.
- Automatic creation of a QR code for each pass.
- QR code scanning system for validation by bus conductors.

2. Overall Description

2.1 Product Perspective

The system will be developed as a comprehensive solution that will smoothly connect with the current transportation infrastructure. The primary goal is to optimize the administration of bus season passes and to simplify and improve the efficiency of the entire process.

2.2 Product Features

The following features are essential for the success of the Computerized Bus Season System:

- **User Account Creation and Management:** Passengers can register, manage their accounts, and track their pass status.
- **Online Payment System:** A secure payment gateway for pass purchases and renewals.
- **Automatic QR Code Generation:** Each pass is associated with a unique QR code for easy validation.

- **QR Code Scanning Functionality:** Bus conductors can quickly validate season passes using QR codes.

2.3 User Characteristics

There are two primary user groups for this system

Passengers: These are individuals who frequently use bus services and prefer the convenience of online transactions.

Bus Conductors: Bus Conductors who wish to have a fast and reliable way of verifying season passes during boarding time.

2.4 Assumptions and Dependencies

- Users have access to any computer or mobile device, as well as the internet.
- The system depends on the reliability of payment gateways as well as QR codes technologies
-

3. System Features and Requirements

3.1 Functional Requirements

1. Secure User Registration and Login Process:

Account creation must be safe to the user.

Logging into the system must be strong enough to protect user details.

2. Online Payment Processing:

Passengers can purchase and renew bus season passes through online platforms.

It is important to incorporate a dependable payment gateway.

3. Automated QR Code Generation:

The pass of each user must be characterized by an individual unique QR code.

QR codes must be generated automatically when a pass is purchase or renewed.

4. QR Code Scanning System:

Quick verifications are possible from the conductor's quarters using this scanning system, which reads these images fast enough during boarding.

3.2 Non-Functional Requirements

- 1. Security:** The security must be High level in order to protect personal and payment data.
- 2. Performance:** The system should respond user requests promptly and efficiently.
- 3. Usability:** User-friendly interface. Once can accessible it easily on different devices such as desktops and mobile phones
- 4. Availability:** The system must be available during operational hours for both users and bus drivers.
- 5. Reliability:** Minimal downtime, the system will have to work consistently all the time.

3.3 System Interfaces

1. Payment Gateway Integration:

Integration with a reliable payment gateway. Any payments made through financial transaction will go through a reliable payment gateway.

2. Email Services Integration:

There might be need for messages like notification or updates for users on email that can get relayed directly via some communication platforms.

3.4 User Interfaces

1. Passenger Web Interface:

A place where passengers can manage their account details, purchase and view pass details, and make transactions without any difficulties.

2. Conductor Interface:

This interface allows bus conductors to scan and validate QR codes upon boarding.

3.5 Software Interface

1. Database Management System:

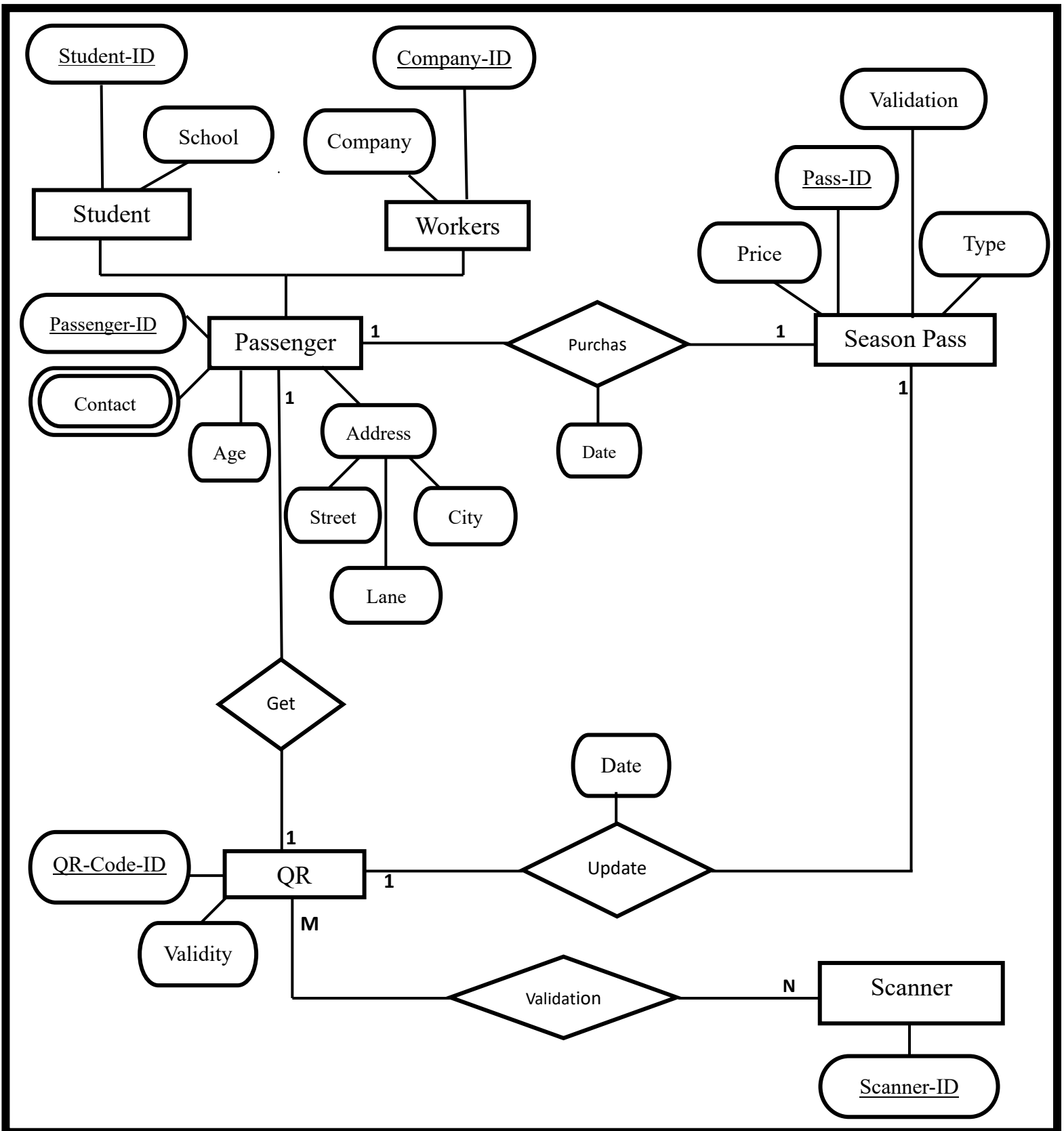
It stores the profiles of users, handles the transaction data and pass information.

2. QR Code Generation and Scanning Services:

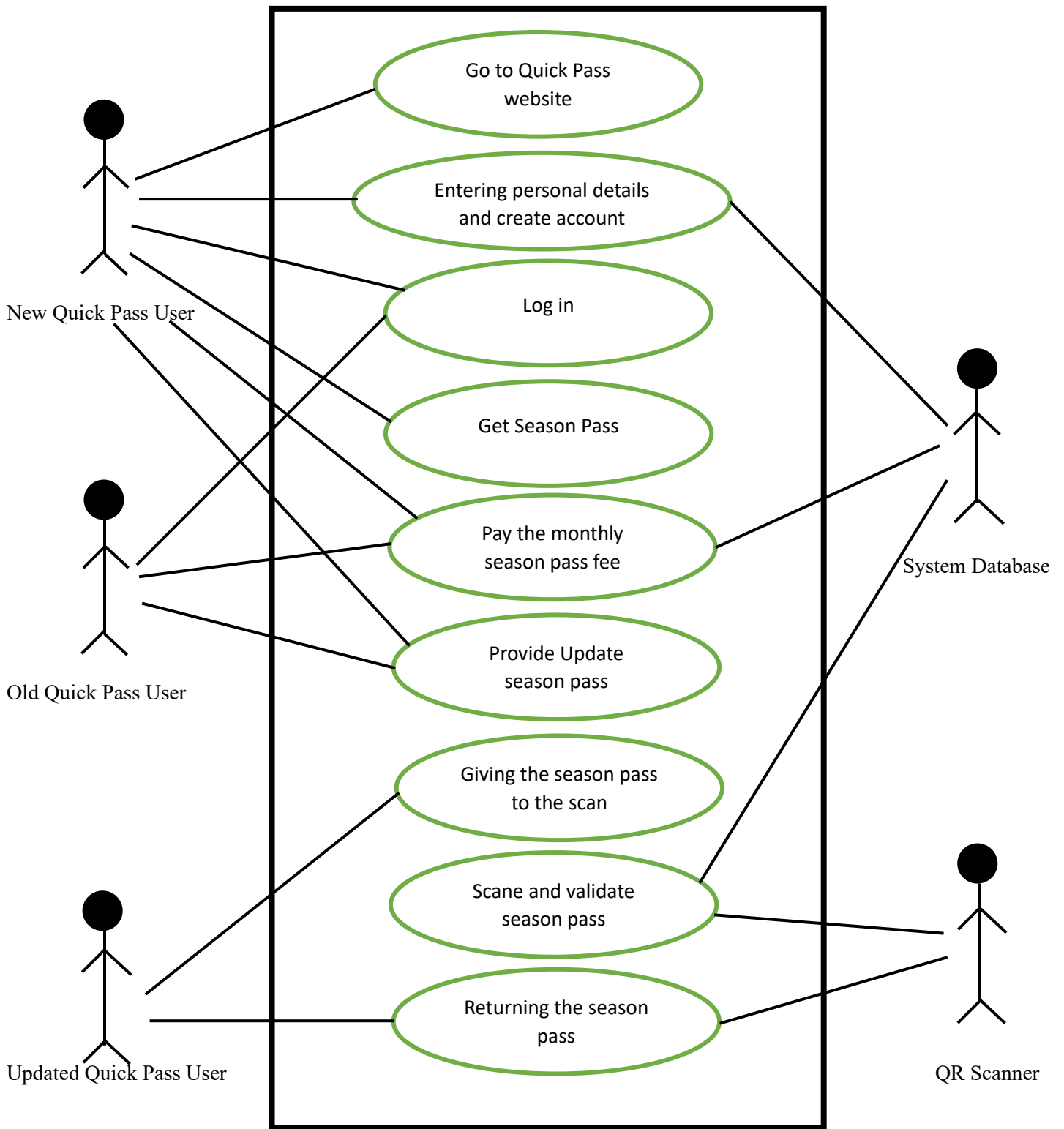
Responsible for creating and validating QR codes.

4.System Features

4.1 Er Diagram

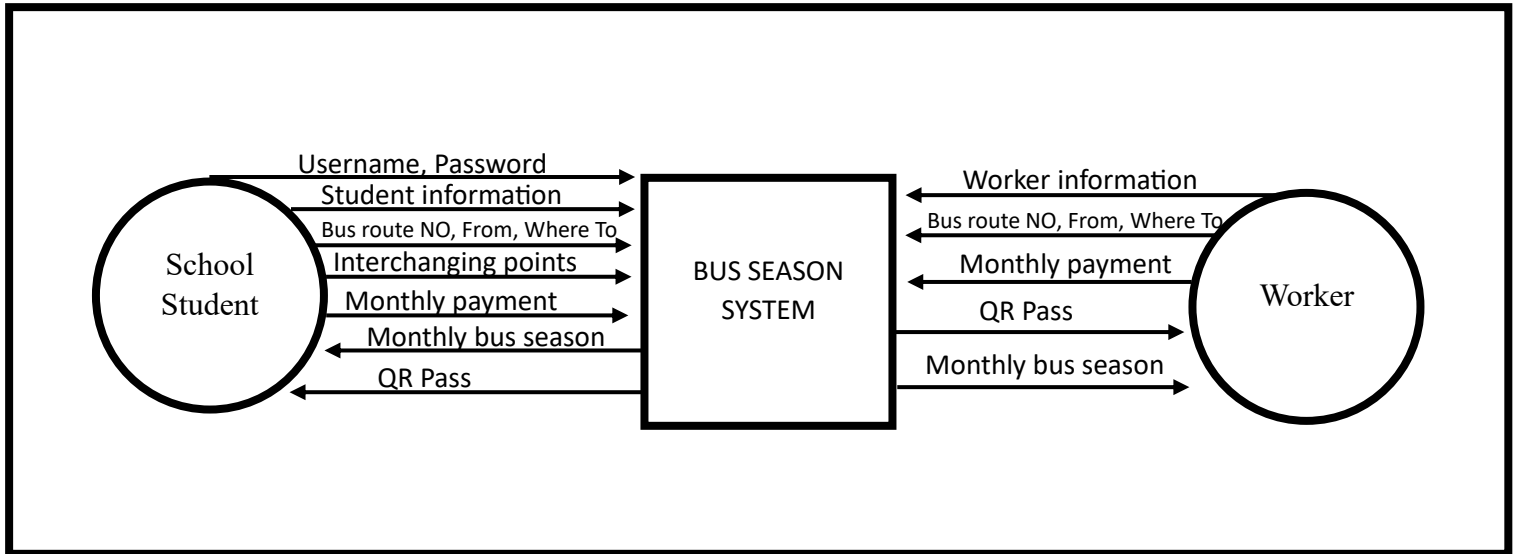


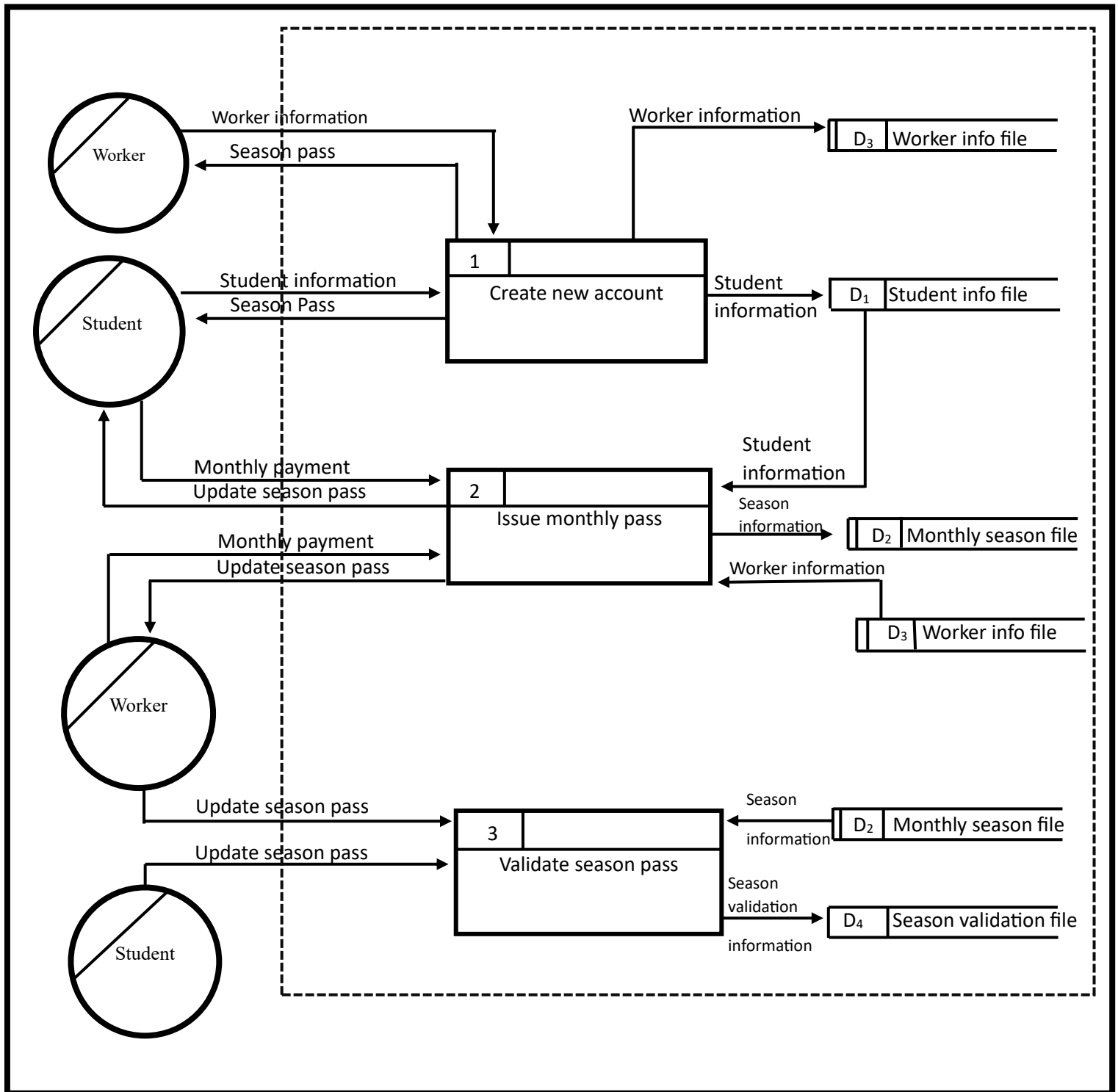
4.2 User Case diagram



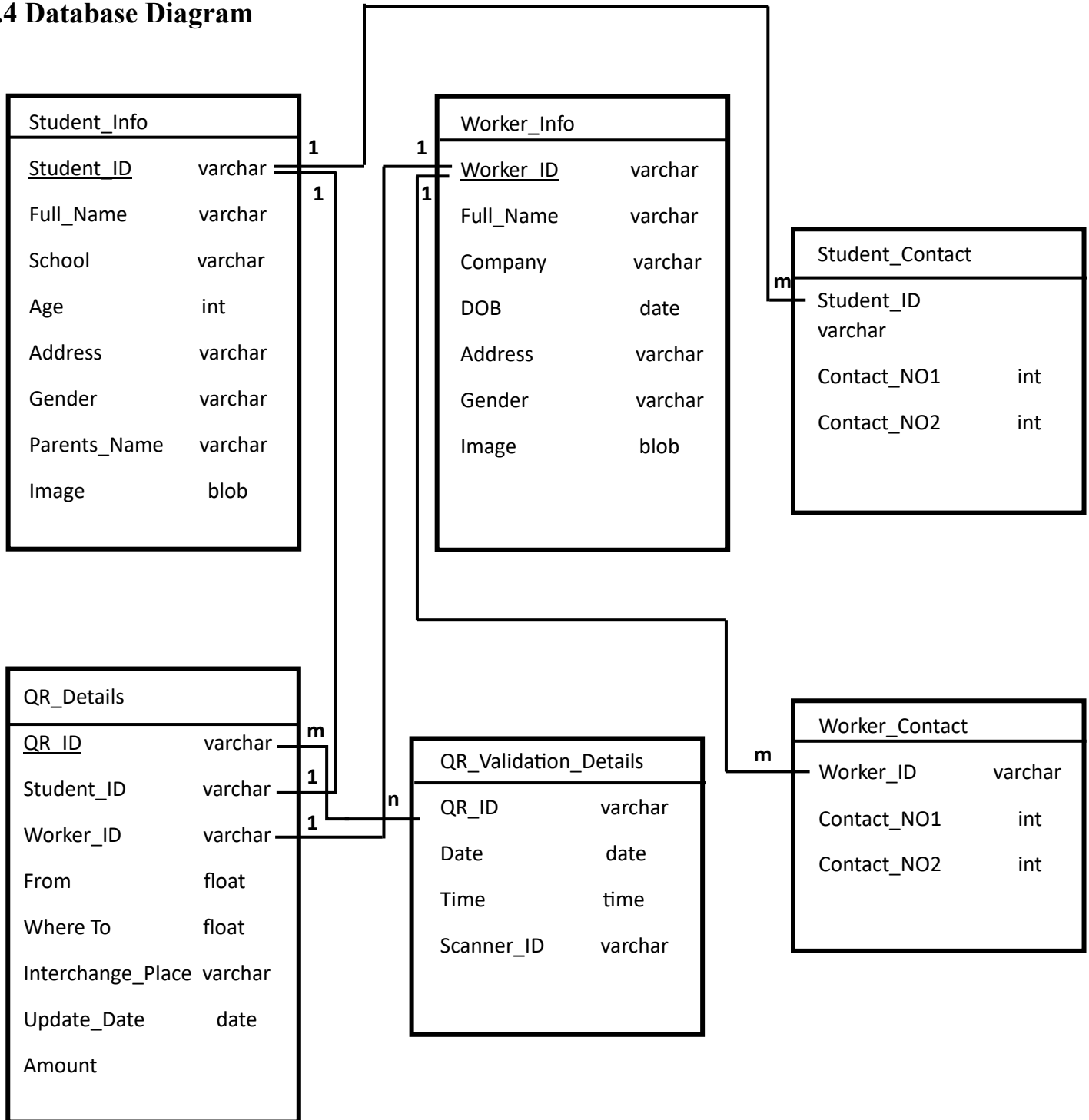
4.3 DFD Diagram

4.3.1 Level 0



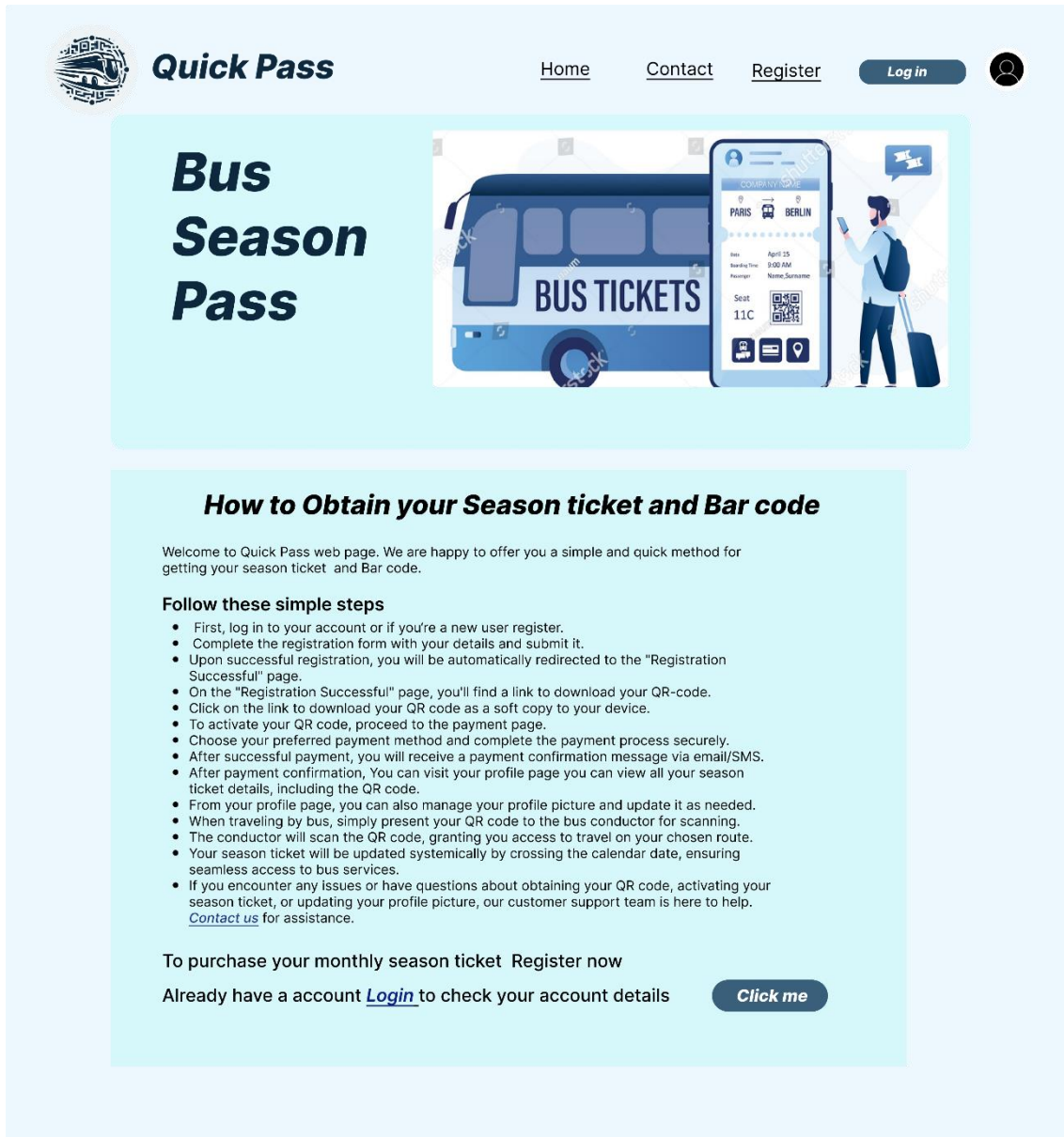


4.4 Database Diagram

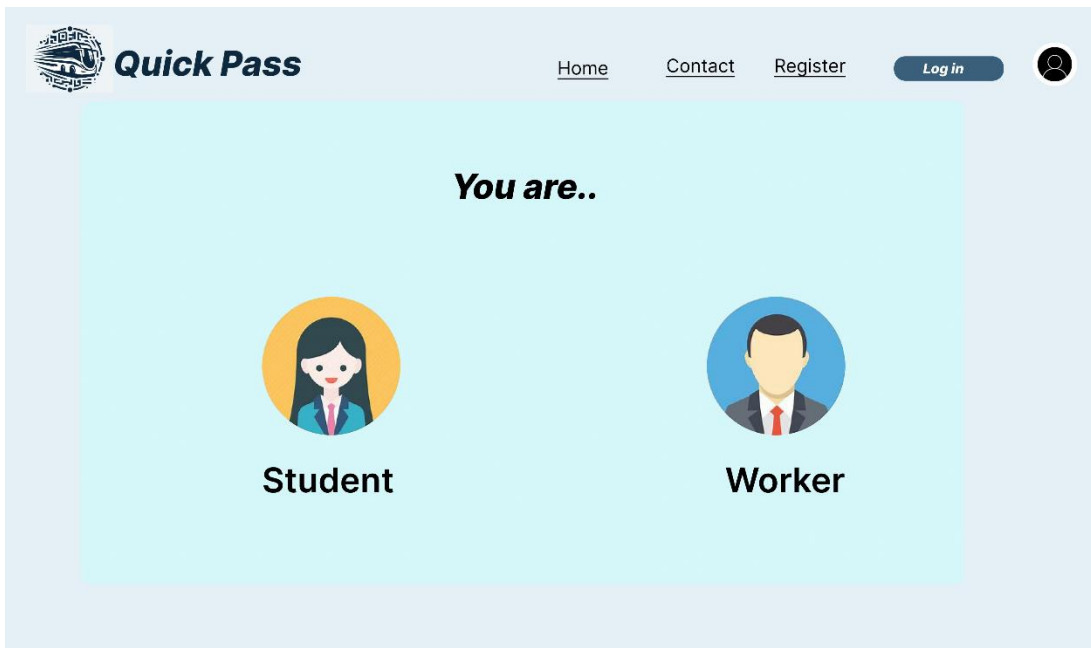


5.UI/UX Design

5.1 Home page

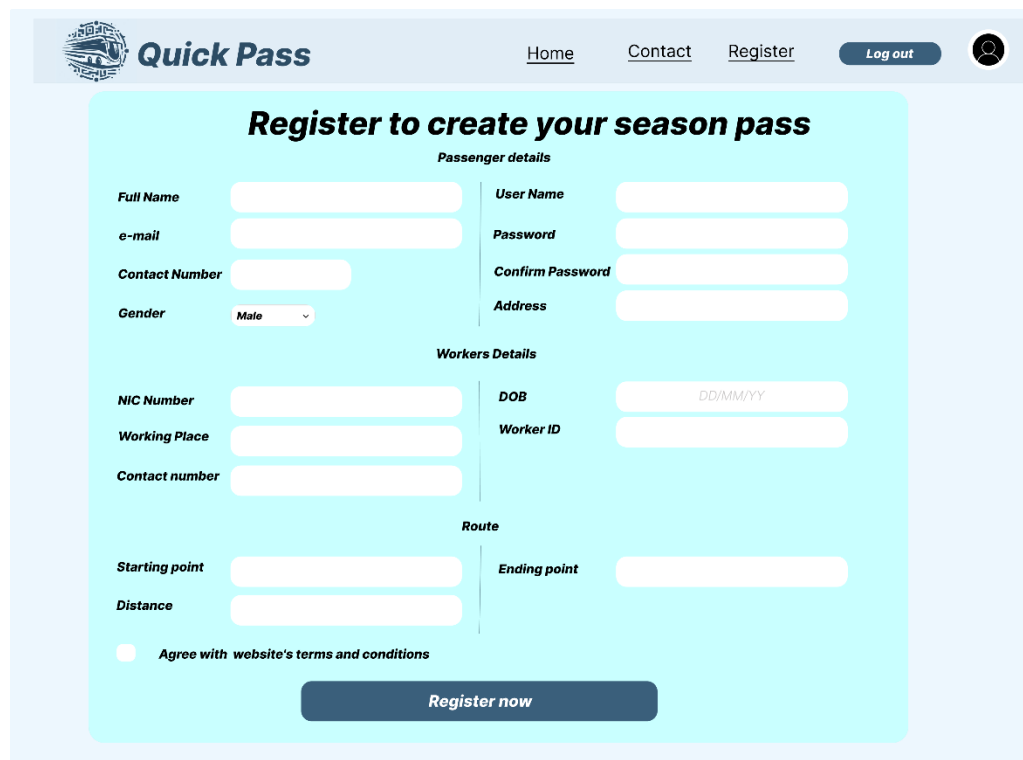


5.2 Passenger Type Page



The screenshot shows the 'Quick Pass' website header with a logo and navigation links: Home, Contact, Register, and a Log in button. A user profile icon is in the top right. The main content area has a light blue background with the text 'You are..' at the top. Below this are two circular icons: a female icon for 'Student' and a male icon for 'Worker'.

5.3 Workers Registration page



The screenshot shows the 'Quick Pass' website header with a logo and navigation links: Home, Contact, Register, and a Log out button. A user profile icon is in the top right. The main content area has a light blue background with the title 'Register to create your season pass'. Below the title are two sections: 'Passenger details' and 'Workers Details'. The 'Passenger details' section includes fields for Full Name, e-mail, Contact Number, Gender (a dropdown menu with 'Male' selected), User Name, Password, Confirm Password, and Address. The 'Workers Details' section includes fields for NIC Number, Working Place, Contact number, DOB (a date picker showing 'DD/MM/YY'), and Worker ID. Below these sections is a 'Route' section with fields for Starting point, Distance, and Ending point. At the bottom of the form is a checkbox labeled 'Agree with website's terms and conditions' and a 'Register now' button.

5.4 Student Registration page

**Quick Pass**[Home](#)[Contact](#)[Register](#)[Log out](#)

Register to create your season pass

Passenger details

Full Name	<input type="text"/>	User Name	<input type="text"/>
e-mail	<input type="text"/>	Password	<input type="password"/>
Contact Number	<input type="text"/>	Confirm Password	<input type="password"/>
Gender	<input type="text" value="Male"/>	Address	<input type="text"/>

Student Details

Student ID	<input type="text"/>	DOB	<input type="text" value="DD/MM/YY"/>
School	<input type="text"/>		

Parents Details

guardian name	<input type="text"/>	Address	<input type="text"/>
School	<input type="text"/>	NIC Number	<input type="text"/>



Route

Starting point	<input type="text"/>	Ending point	<input type="text"/>
Distance	<input type="text"/>		

☐ Agree with website's terms and conditions

[Register now](#)

5.5 Registration Successful page

**Quick Pass**[Home](#)[Contact](#)[Register](#)[Log out](#)

Registration Successful

Full Name :

Passenger ID :

Starting Point :

Ending Point :

Distance :


Pass ID :

Monthly Payment for your journey :

If you have any problem please feel free to [contact us](#)

To make online payment [Click here](#)

Qr code ID :





[Download QR Code](#)

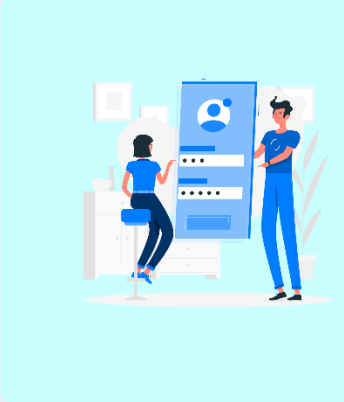
You have to pay monthly payment to activate QR code

make [payment](#) now

5.6 Log In page

**Quick Pass**

[Home](#) [Contact](#) [Register](#) 



Log In to your Account

Username

Password

☐ **Remember me**

[Forgotten Password?](#)

Log In

Create New Account

5.7 Update Ticket details with User profile page

**Quick Pass**

[Home](#) [Contact](#) [Register](#) [Log out](#) 

User profile



Name
Student /Worker

Passenger ID :

Phone Number :

Student ID/Worker ID :

NIC Number of worker/ Parent NIC Number :

Gender :

Address :

School/Work Place :

Date of Birth :

Season Ticket Details

Season Ticket ID :

Starting Point :

Whole journey distance :

Expired Date :

Ending Point :

Payment for whole Journey :

Payment Details

Passenger ID :

Pass ID :

Payment method :

Payment Date :

Payment was successfully done for ##### month.

Full Name :

Bar Code ID :

Amount :

Qr code details

Qr Code ID :

If There are any problem feel free to [contact us](#)

Qr Code is **activated**

Expired date :





Daily Use of the Qr code

JANUARY 2024

MON	TUE	WED	THU	FRI	SAT	SUN
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

5.8 Payment page

**Quick Pass**

[Home](#)[Contact](#)[Register](#)[Log out](#)

Full name





Email

Address

Name on card

Credit card numbr


EXP


Card accepted :    

CVV

[Confirm](#)

5.9 Contact Page

**Quick Pass**

[Home](#)[Contact](#)[Register](#)[Log out](#)


Contact US




Name :

E- mail :


Message :

[send](#)



 011-4567893
011-6578456 Bus station,
Colombo quickpassseason.com

5.10 Scanner Page



Quick Pass

- This Scanner is provide to bus conductors to scan passengers QR code

To activate Scanner

Enter Scanner Id :

Scan QR