



**Institute of Software Engineering**

## **Assignment**

on

MVC - Architecture

Module Code

ITS1013

Module

Database Programming with JDBC

Year

2020

Semester

01

Date

29/07/2020

Nature of the assignment	Individual Assignment
Assignment Submission Date	01/08/2020

## Objectives

- Gain basic knowledge of the MVC Architecture
- Become familiar with the basics of interacting with a database using SQL construct

## Assignment Requirements

- You have to focus on how to implement this system using your knowledge in Java Database connectivity with MVC architecture.
- You can use JavaSwing or javaFX to create graphical user interfaces.
- The requirements for the project are provided below for you to follow.
- You should submit the project on or before the due date.

In the modern world where parking space has become a very big problem, it has become very important to avoid the wastage of space in modern big companies and apartments etc. in places where more than 100 of vehicles need to be parked. Parking systems are useful in reducing wastage of space and traffic congestion.

The Sunrise Shopping Complex is one of a shopping complex in the Sri Lanka. They have a large parking area and they required a software system for manage their vehicle park. The Parking has two gates as IN and EXIT. When a vehicle come to the gate IN, the security officer will check following details.

- Availability of the parking slots according to the vehicle type.
- Identified it is pre registered vehicle or not pre registered by using vehicle number. If it is not a registered vehicle the security officer need to get below details and the system will save them to the database.

### Vehicle Informations

- Vehicle Type
- Vehicle Number
- Owner's Name

### Parking Information

Vehicle Type	Cost (Rs.)	Time	No of Slots
Car	50.00	Per Hour	40
Van	75.00	Per Hour	30
Bus	100.00	Per Hour	20
Lorry	150.00	Per Hour	10

The system should now be able to calculate the cost of parking for each vehicle. The cost will be calculated  $\text{departure time} - \text{arrival time} * \text{price of vehicle per hour}$  according to the vehicle type. There should be a different UI for the cashier, when the vehicle leaving the car park, cashier should be able to view the arrival time, departure time, total parking fee and the total parked time. Payment can be made in two different ways, cash or card.

Once the payment is done, the system should automatically save whether the payment is done, and by which method (card or cash) in the database. When the vehicle owner has made the payments, and is leaving, the security officer rechecks whether the owner has made the payment in order to open the gate. Security officer should also have a separated UI, in which he inputs the vehicle number, and will be displaying all the details (arrival time, departure time, is payment made).

Apart from that, the security officer should also be able to view the history (if the vehicle was parked before) of this vehicle being parked in this parking. Note that when it is being displayed, the vehicle number should not be repeated.

1. Draw a Usecase diagram to make above system.
2. Draw an ER Diagram of this scenario.
3. Create a java application to accomplish the depicted task.