Progress Presentation

Multi-factor transaction authorisation based on QR code

Presented By: FYP-23-S1-02

Understanding the Topic

What is Multi-factor transaction authorization?

- A security measure that requires users to provide multiple forms of authentication in order to authorize a transaction

- Provides an additional layer of security to prevent unauthorized access

Understanding the Topic

What is a QR code?

- A type of two-dimensional barcode that can be easily read by a smartphone camera or a QR code scanner

- They can also be used for authentication purposes

How can QR code be used for multi-factor transaction authorization?

- User will be able to scan the QR code with a trusted device/app to verify the transaction details

About our Project

- The goal is to implement a secure transaction authentication system with the use of QR code

- Add password and biometric authentication method

- The protocol will need to be executed between a web interface and an application on a mobile device (project requirement)

Research:

- What is a QR code and how does it work?

- How to make the QR scanner and generate QR

- How to create a validation system with QR

- Similar multi-factor transaction authorisation
    - OAuth2
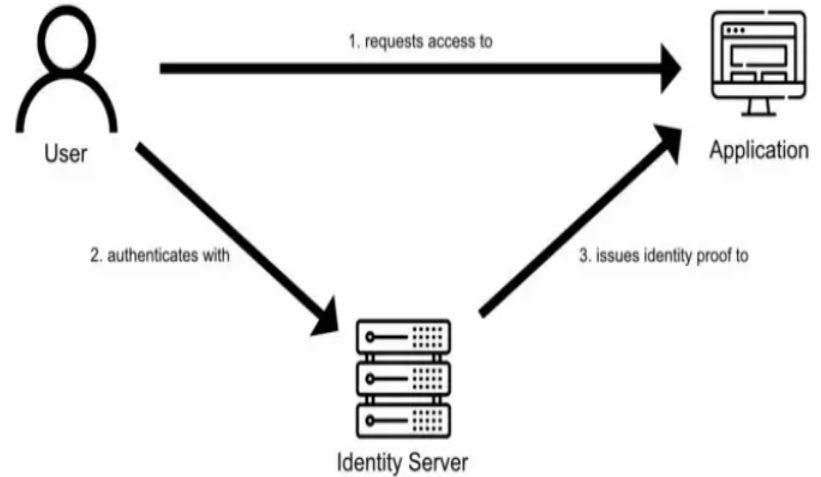
Idea: Hotel Booking Service Provider - Check Inn

Check Inn is a platform that will allow the Customers to make a booking via our website and allow them to validate themselves upon check in and simply scan a QR code to access their booked room

✓ One stop check in for **Customer**

✓ **Customer** gain exclusive deals by signing up

✓ **Hotel Operators** will join our platform in order to get personalised data of the customers who book a hotel via our platform
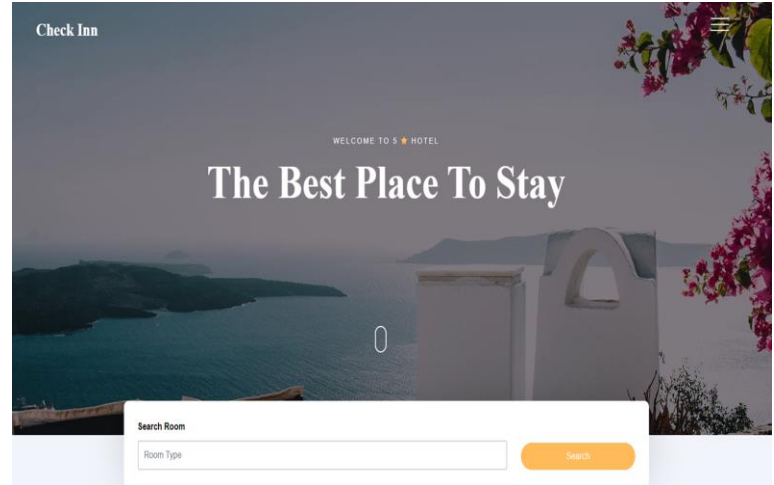
Idea: Hotel Booking Service Provider - Check Inn

How to book a room if you are a Customer?

- Access the website

- Login to account

- Select any available room/suites

- Customer enters his/her particulars to reserve the room

- Customer makes payment to reserve the room

- Customer's room booking is confirmed

✓ One stop destination to get best pricing

✓ Fast signup and creation for new account sign up

✓ View all various types of rooms and pricing available

✓ Flexible online payment and immediate confirmation

Idea: Hotel Booking Service Provider - Check Inn

How will the Customer check in after booking?

- Go to the hotel room which you booked

- Login to our mobile application

- Click on the scanner in the app and scan the QR code outside the hotel room

- Customer will be prompted to scan his/her biometrics

- Validate biometrics and booking

- Door unlocks after successful validation

✓ Fast and efficient way of checking in

✓ Remove the use of physical keys

✓ Addition of biometrics to secure the authorisation process

✓ QR Code used to unlock the room door and validate booking

✓ Customer can benefit from getting Hotel booking discounts

Idea: Hotel Booking Service Provider - Check Inn

How will the hotel operator get the QR code?

- Login to our website

- Click on "QR Codes"

- The page will display the hotel room numbers and the QR Codes.

- Hotel Operator can paste the QR codes outside the room

✓ Digitalise and do not need to provide physical key.

✓ Have a digital master access to unlock all room
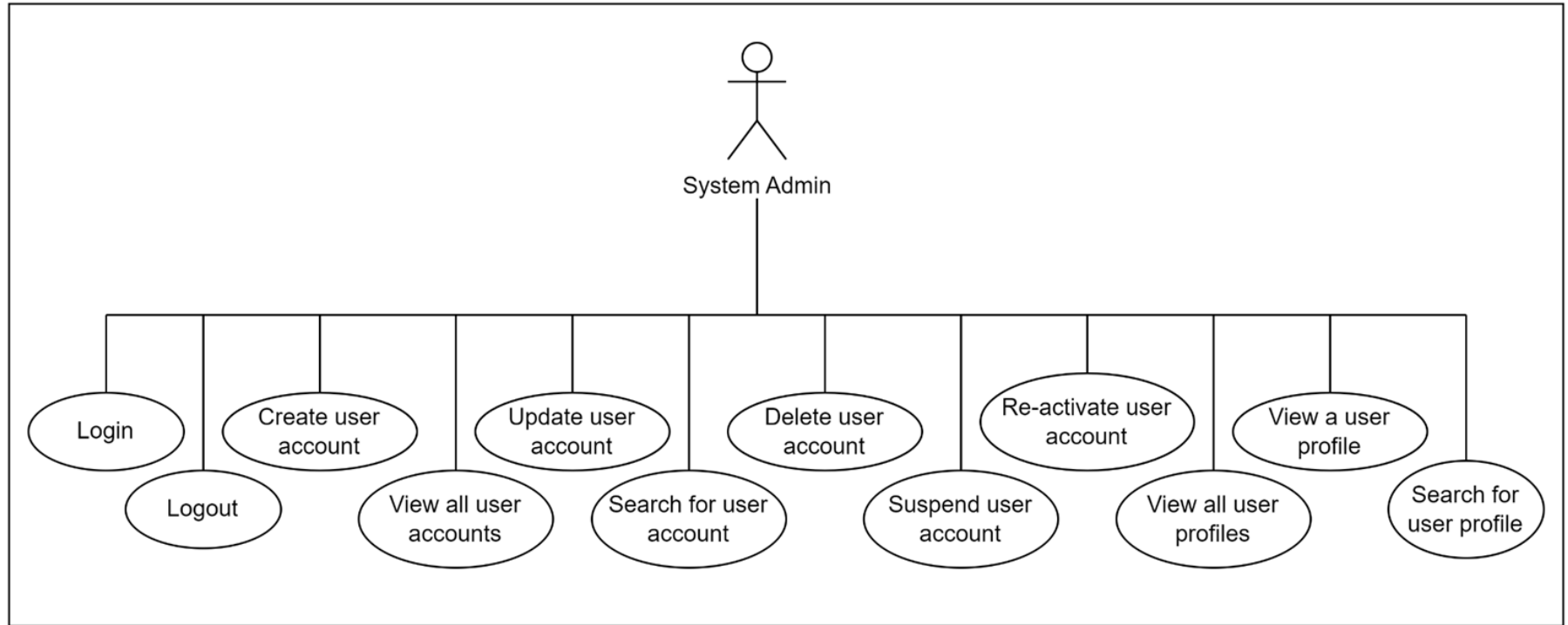
✓ Customer personal deta

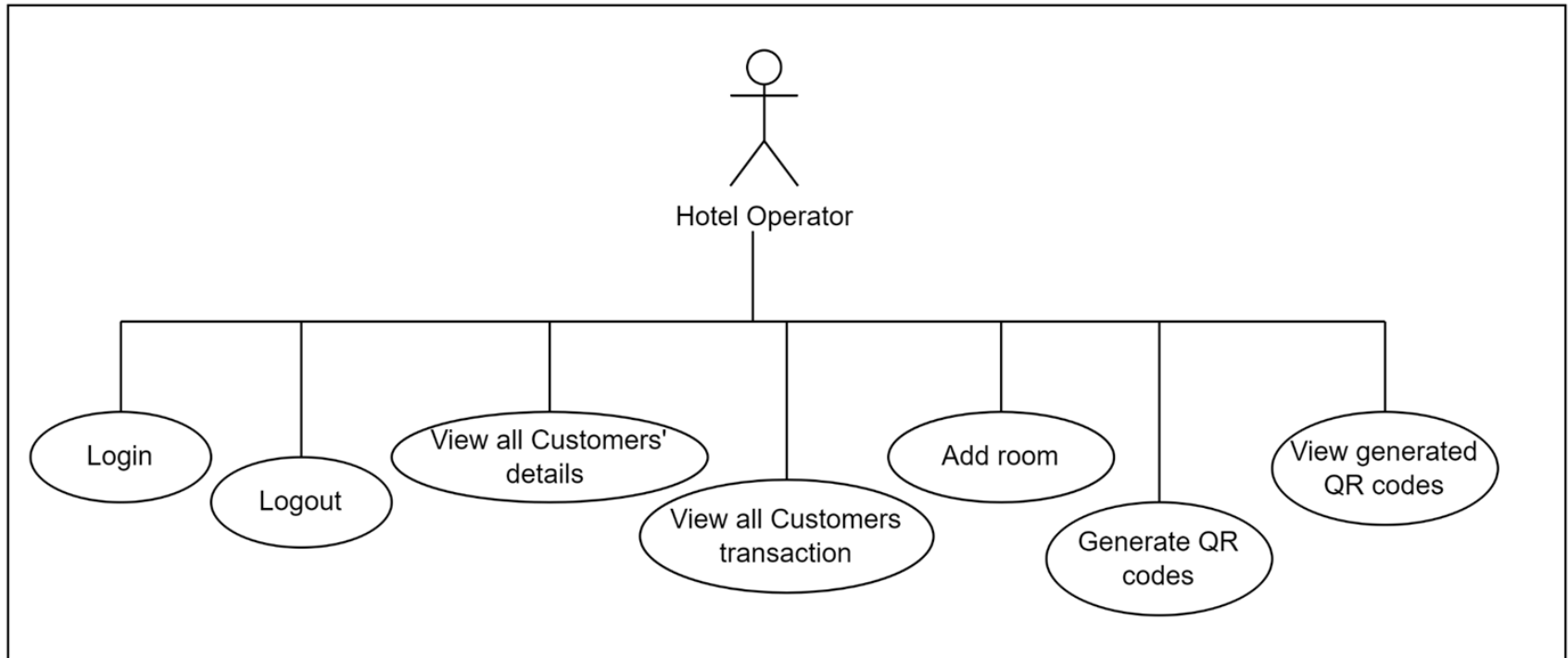✓ Minimise manpower

Special Features

- Data Security:
  - Role-Based Access: Stringent access control, only System Admins will have full rights
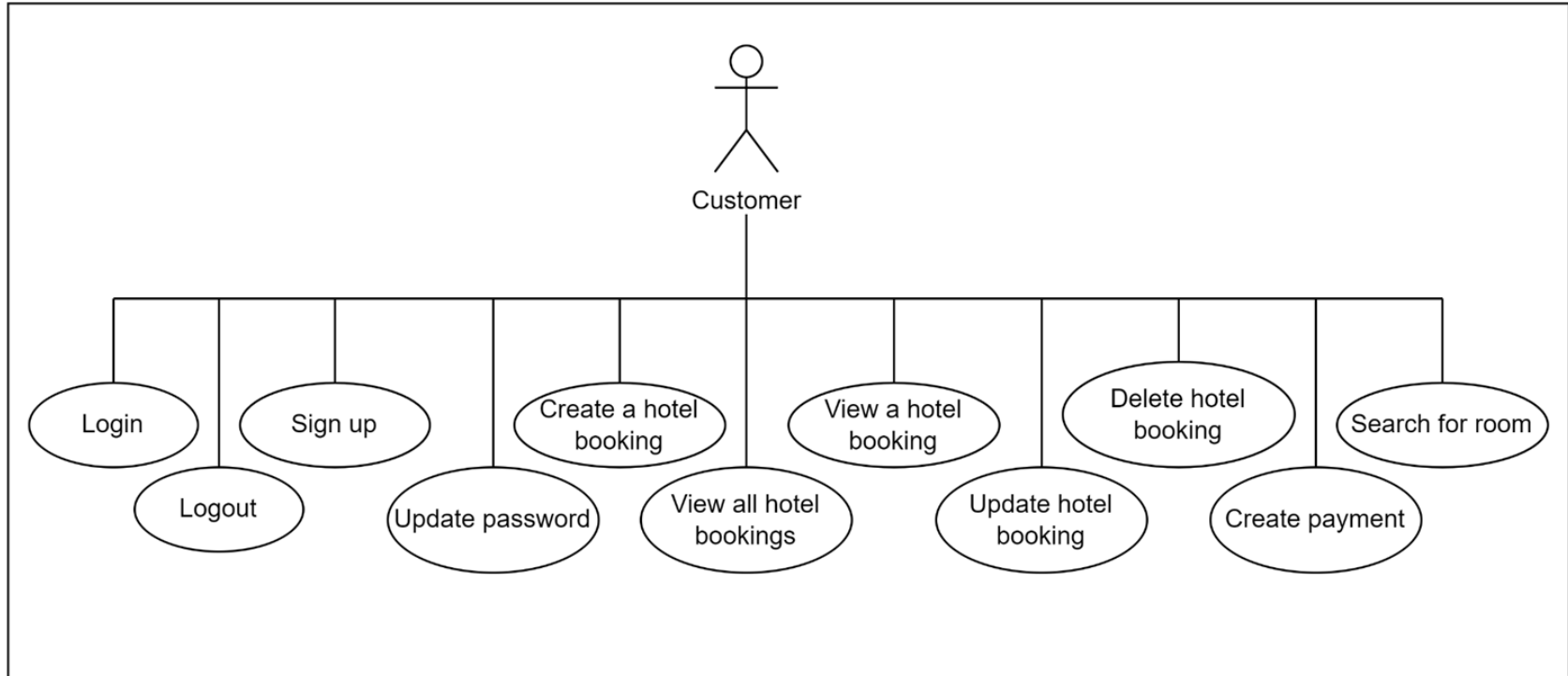 - Two Factor Authentication (2FA) - Biometrics
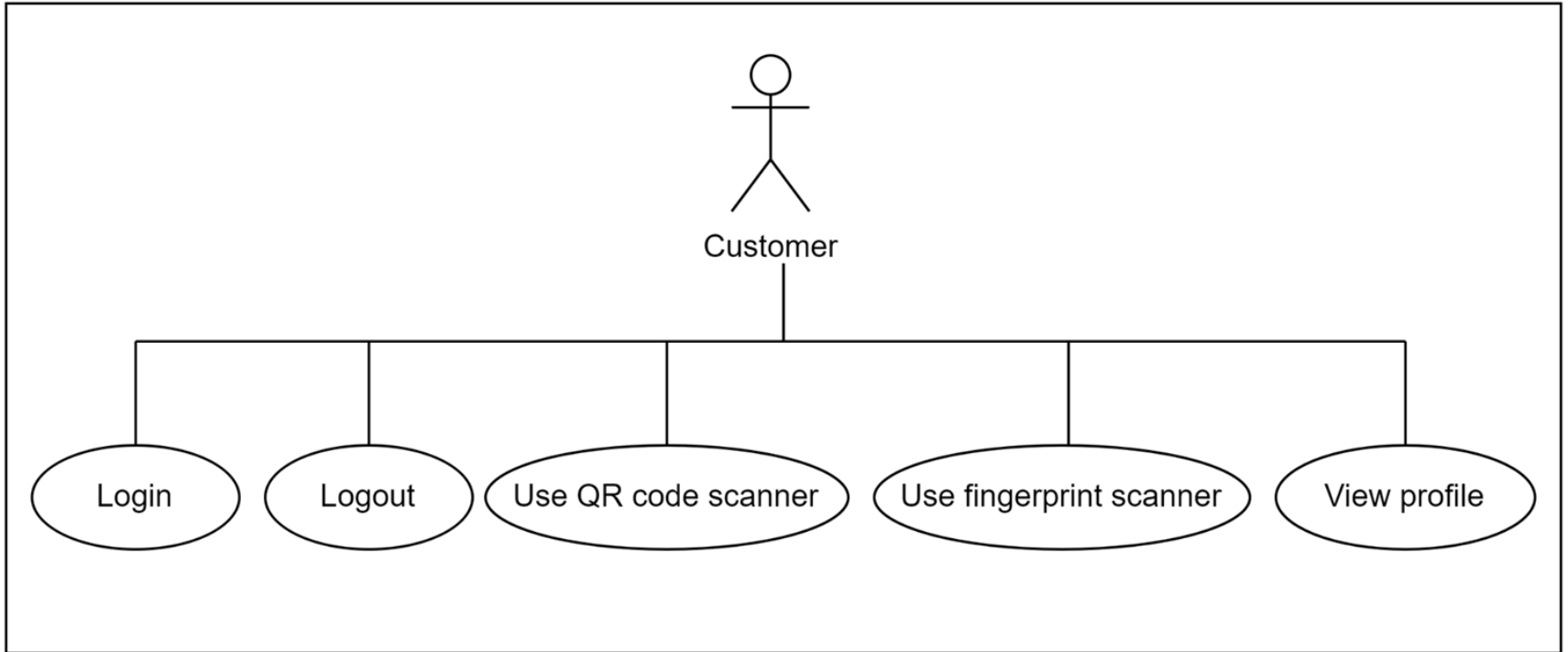
User Story and Use Cases for System Admin

User Story and Use Cases for Hotel Operator

User Story and Use Cases - Customer (Website)

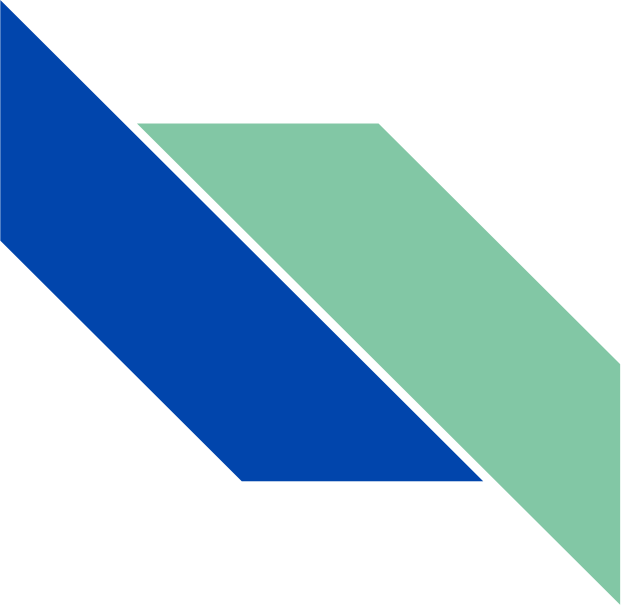# User Story and Use Cases - Customer (Mobile Application))

Time for Demonstration of
1) Administrative Website
2) CheckInn Website
3) CheckInn Android Application

Hotel Room Door

- A IOT device is installed in the wall and it is wired to an electric door strike lock.

- The IOT device is connected to the online server through the Wi-Fi network.

- The QR code will be pasted on the IOT device.

- Once the customer is authenticated to unlock the hotel room, it will update the database of the unlock door status from closed to open.

- Once the IOT device detects the open status from the database, it will send a signal to the electric door strike lock to unlock the door.

Any
questions?

Thank You