

### Sri Lanka Institute of Information Technology

# Cellular Phone Shop Management System (OSGI FRAMEWORK)

Software Architecture (SE3030) 2022

# CSSE\_WE\_12

Assignment 01

### **Submitted by:**

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### Introduction

This report provides an overview of the use of the OSGi framework for implementing a producer-consumer model, which involves the production and consumption of services. For this project, we have developed a producer-consumer model for the admin party of a Phone Shop Management System, which includes several sub-systems such as Billing Management, Stock Management, Admin Management, Employee Management and Supply Management. The producer-consumer model utilizes the OSGi framework, where the producer generates services, and the consumer subscribes to these generated services for its consumption.

### Requirement of the Assignment

Implementing a plugin project for a producer-consumer scenario. The implementations should be capable of publishing services and consuming the services by implementing the inner logics of the scenario.

### Scope of the Assignment

With the use of OSGi framework establishing communication between the producer and the consumer bundles in the "Cellular Store Management System". Designing and implementing the producer bundles that publishes the services and a consumer bundle that subscribes and receive the services from the service producer bundles.

### Goal of the Assignment

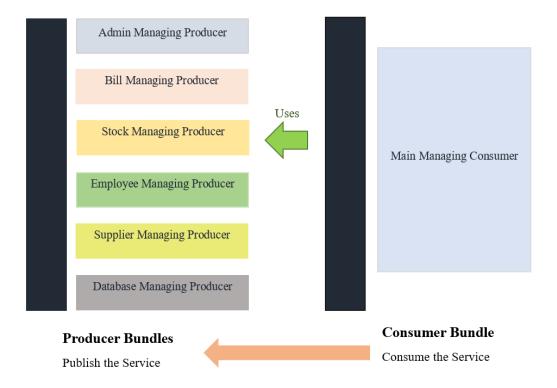
The goal of the assignment is to implement a producer-consumer scenario using OSGi framework, to demonstrate the use of OSGi services to establish communication between the producer and consumer bundles.

Moreover, gaining the practical experience in software architecture principles, ability to implement OSGi services by utilizing OSGi framework and to handle complex scenarios by applying critical thinking and problem-solving skills.

### Tools and Technologies

- Eclipse Enterprise IDE for development.
- Java as the programming language.
- OSGi as the framework.
- Eclipse Equinox as the open-source implementation of OSGi framework
- Apache Felix Gogo shell is a shell console used for interacting with OSGi bundle and to install and run the producer and consumer bundles in the OSGi framework.

### System Overview



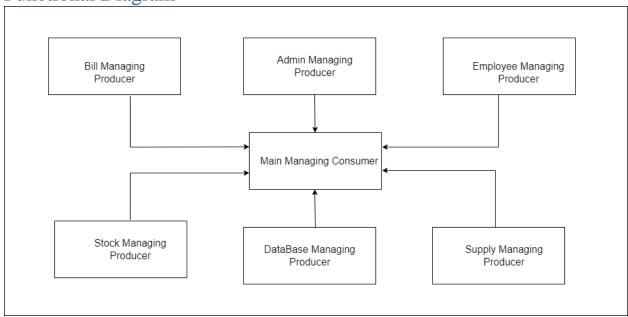
There are 5 Publisher components and 1 Consumer (Subscriber) component in this "Cellular Shop Management System".

This scenario illustrates the admin side of a Cellular Shop Management System.

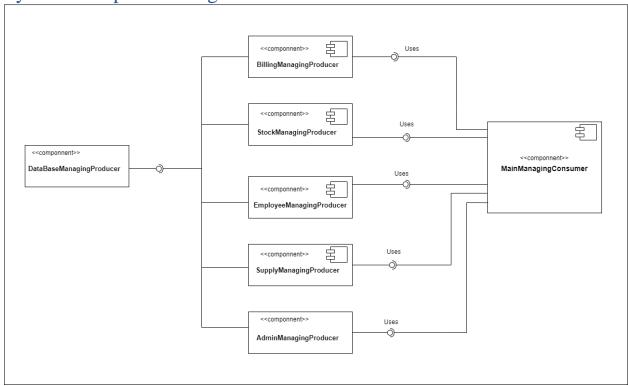
- ➤ Here the shop owner can assign admins to the shop, and he can add admins, update admin details, retrieve and search for admin details using the Admin Managing Producer bundle.
- Admins of this shop can perform main 4 functions as Bill Management, Stock Management, Employee Management and Supplier Management
- ➤ Bill management refers to the procedure where the admin can add bills, update bills, retrieve and search for bill details and delete bills.
- ➤ Stock management refers to the procedure where the admin can add stocks, update stocks, retrieve and search for stock details and delete stock details.
- Employee management refers to the procedure where the admin can add employees, update employees, retrieve and search for employee details and delete employees.
- ➤ Supplier management refers to the procedure where the admin can add suppliers, update supplier details, retrieve and search for supplier details and delete suppliers.

# Scenario Explanation

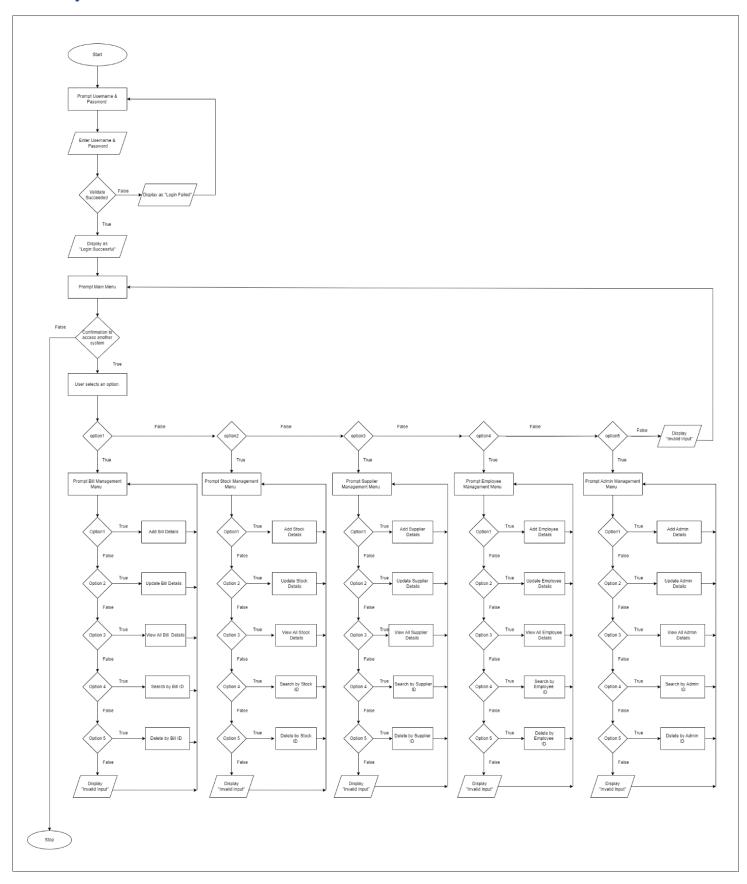
**Functional Diagram** 



System Component Diagram



## System Flow Chart



### **Bundle and Manifest Files**

### **Admin Managing Producer**

```
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                                                                                                                                                                                                 훪 Auth Manage Publisher 🗵
           Property of the Control of the Contr

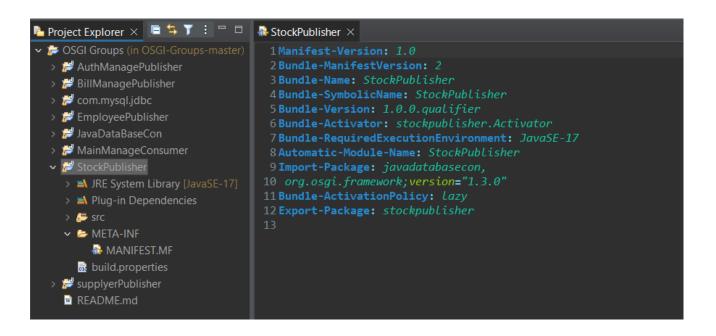
    Ä AuthManagePublisher

                                                                                                                                                                                                         3 Bundle-Name: AuthManagePublisher
4 Bundle-SymbolicName: AuthManagePublisher
                            > A JRE System Library [JavaSE-17]
                           > N Plug-in Dependencies
                                          > 🚜 authmanagepublisher
                                   META-INF
                                                  MANIFEST.MF
                                                                                                                                                                                                         9 Automatic-Module-Name: AuthManagePublisher
                                      build.properties
                > 📂 BillManagePublisher
                                                                                                                                                                                                     12 Bundle-ActivationPolicy: lazy
                > 📂 com.mysql.jdbc
                > 📂 EmployeePublisher
                > 📂 JavaDataBaseCon
                > 📈 MainManageConsumer
                > 📈 StockPublisher
                > 📂 supplyerPublisher
                           README.md
```

### Bill Managing Producer

```
🖺 Project Explorer 🗴 🗏 ≒ 🏋 ᠄ 🗀 🗖
                                  ♣ BillManagePublisher ×
1 Manifest-Version: 1.0
                                    2 Bundle-ManifestVersion: 2
    AuthManagePublisher
                                    3 Bundle-Name: BillManagePublisher
  🗸 📈 BillManagePublisher
    > A JRE System Library [JavaSE-17]
    > Negendencies
                                    6 Export-Package: billmanagepublisher
    🕶 📂 META-INF
                                    8 Bundle-RequiredExecutionEnvironment: JavaSE-17
        № MANIFEST.MF
      build.properties
  > 📈 com.mysql.jdbc
  > 📂 EmployeePublisher
  > 📈 JavaDataBaseCon
  > 📈 MainManageConsumer
  > # StockPublisher
  > 📈 supplyerPublisher
    README.md
```

### **Stock Managing Producer**



### **Employee Managing Producer**

```
🖺 Project Explorer 🗴 📮 ≒ 🍸 ᠄ 🗀 🗖
                                       ♣ EmployeePublisher ×

▼ F OSGI Groups (in OSGI-Groups-master)

   > 📈 AuthManagePublisher
                                         3 Bundle-Name: EmployeeManagement
   > 📂 BillManagePublisher
   > 📈 com.mysql.jdbc
   🗸 📈 EmployeePublisher
     > A JRE System Library [JavaSE-17]
                                         7 Bundle-RequiredExecutionEnvironment: JavaSE-17
     > A Plug-in Dependencies
     > 👺 src

✓ ► META-INF

                                        11 Bundle-ActivationPolicy: lazy
          MANIFEST.MF
       a build.properties
   > 📈 JavaDataBaseCon
   > WainManageConsumer
   > 📂 StockPublisher
   > 📂 supplyerPublisher

■ README.md
```

### **Supplier Managing Producer**

```
Project Explorer × □ ≒ ▼ □ □
                                      🖟 supplyerPublisher 🔀

    F OSGI Groups (in OSGI-Groups-master)

                                        1 Manifest-Version: 1.0
   > 📈 AuthManagePublisher
                                        2 Bundle-ManifestVersion: 2
   > 📂 BillManagePublisher
  > 📂 com.mysql.jdbc
   > 📂 EmployeePublisher
                                        6 Export-Package: supplyerpublisher
   > 📂 JavaDataBaseCon
                                        7 Bundle-Activator: supplyerpublisher.Activator
   > 📂 MainManageConsumer
                                        8 Bundle-RequiredExecutionEnvironment: JavaSE-17
   > 📂 StockPublisher
                                        9 Automatic-Module-Name: supplyerPublisher

    supplyerPublisher

                                       10 Import-Package: javadatabasecon,
                                       11 org.osgi.framework; version="1.3.0"
     > A JRE System Library [JavaSE-17]
                                       12 Bundle-ActivationPolicy: Lazy
     > A Plug-in Dependencies
     > 🧀 src

✓ ► META-INF

          🚯 MANIFEST.MF
       build.properties
     README.md
```

### **Database Managing Producer**

```
🦺 Project Explorer 🗴 🗏 ≒ 🍸 ᠄ 🗀 🗀
                                      💀 Java Data Base Con 🗵

    E OSGI Groups (in OSGI-Groups-master)

                                        1 Manifest-Version: 1.0
  > 📂 AuthManagePublisher
                                        2 Bundle-ManifestVersion: 2
                                        3 Bundle-Name: JavaDataBaseCon
  > 📂 BillManagePublisher
                                        4 Bundle-SymbolicName: JavaDataBaseCon
  > 📈 com.mysql.jdbc
  > 📂 EmployeePublisher

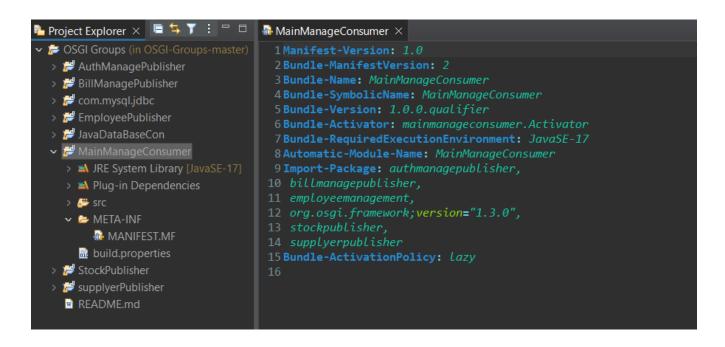
▼ IavaDataBaseCon

     > 👺 src
                                        8 Bundle-RequiredExecutionEnvironment: JavaSE-17
     > A JRE System Library [JavaSE-17]
     > A Referenced Libraries
                                       11 org.osgi.framework; version="1.3.0"
     > A Plug-in Dependencies
                                       12 Bundle-ActivationPolicy: lazy
     > 🗁 lib

✓ ► META-INF

          MANIFEST.MF
       build.properties
  > 📈 MainManageConsumer
  > 📂 StockPublisher
  > 📂 supplyerPublisher
     README.md
```

### Main Managing Consumer



### All Commands of Bundle Install and Run in OSGi

### Compilation

#### 1. Compile Database connection

C:\OSGi\felix-framework-4.0.3\bin>javac -cp C:\OSGi\felix-framework-4.0.3\bin\felix.jar JavaDataBaseCon\javadatabasecon\\*.java

C:\OSGi\felix-framework-4.0.3\bin>javac -cp C:\OSGi\felix-framework-4.0.3\bin\felix.jar JavaDataBaseCon\javadatabasecon\\*.java.

#### 2. Compile Auth Manage Publisher

C:\OSGi\felix-framework-4.0.3\bin>javac -cp C:\OSGi\felix-framework-4.0.3\bin\felix .jar AuthManagePublisher\authmanagepublisher\\*.java\_

C:\OSGi\felix-framework-4.0.3\bin>javac -cp C:\OSGi\felix-framework-4.0.3\bin\felix.jar AuthManagePublisher\authmanagepublisher\\*.java

#### 3. Compile Bill Manage Publisher

C:\OSGi\felix-framework-4.0.3\bin>javac -cp C:\OSGi\felix-framework-4.0.3\bin\felix
.jar BillManagePublisher\billmanagepublisher\\*.java\_

C:\OSGi\felix-framework-4.0.3\bin>javac -cp C:\OSGi\felix-framework-4.0.3\bin\felix.jar BillManagePublisher\billmanagepublisher\\*.java

#### 4. Compile Employee Publisher

C:\OSGi\felix-framework-4.0.3\bin>javac -cp C:\OSGi\felix-framework-4.0.3\bin\felix .jar EmployeePublisher\employeepublisher\\*.java\_

C:\OSGi\felix-framework-4.0.3\bin>javac -cp C:\OSGi\felix-framework-4.0.3\bin\felix.jar EmployeePublisher\employeepublisher\\*.java

#### 5. Compile Stock Publisher

C:\OSGi\felix-framework-4.0.3\bin>javac -cp C:\OSGi\felix-framework-4.0.3\bin\felix .jar StockPublisher\stockpublisher\\*.java\_

C:\OSGi\felix-framework-4.0.3\bin>javac -cp C:\OSGi\felix-framework-4.0.3\bin\felix.jar StockPublisher\stockpublisher\\*.java

#### 6. Compile Supplier Publisher

C:\OSGi\felix-framework-4.0.3\bin>javac -cp C:\OSGi\felix-framework-4.0.3\bin\felix .jar supplyerPublisher\suppyerpublisher\\*.java\_

C:\OSGi\felix-framework-4.0.3\bin>javac -cp C:\OSGi\felix-framework-4.0.3\bin\felix.jar supplyerPublisher\suppyerpublisher\\*.java

#### 7. Compile MainManageConsumer

C:\OSGi\felix-framework-4.0.3\bin>javac -cp C:\OSGi\felix-framework-4.0.3\bin\felix .jar MainManageConsumer\mainmanageconsumer\\*.java\_

C:\OSGi\felix-framework-4.0.3\bin>javac -cp C:\OSGi\felix-framework-4.0.3\bin\felix.jar MainManageConsumer\mainmanageconsumer\\*.java

#### Create JAR with MANIFEST

#### 1. Create JDBC.jar from the Manifest

C:\OSGi\felix-framework-4.0.3\bin\com.mysql.jdbc\META-INF>jar cfm JDBC.jar MANIFEST .mf\_

C:\OSGi\felix-framework-4.0.3\bin\com.mysql.jdbc\META-INF>jar cfm JDBC.jar MANIFEST.mf

#### 2. Create AuthManagePublisher.jar from the Manifest

C:\OSGi\felix-framework-4.0.3\bin\AuthManagePublisher>jar cfm authmanagepublisher.jar MANIFEST.mf

C:\OSGi\felix-framework-4.0.3\bin\AuthManagePublisher>jar cfm authmanagepublisher.jar MANIFEST.mf

#### 3. Create Bill manage publisher

C:\OSGi\felix-framework-4.0.3\bin\BillManagePublisher\billmanagepublisher>jar cfm billmanagepublisher.jar MANIFEST.mf

C:\OSGi\felix-framework-4.0.3\bin\BillManagePublisher\billmanagepublisher>jar cfm billmanagepublisher.jar MANIFEST.mf

#### 4. Create Employee Manage publisher

C:\OSGi\felix-framework-4.0.3\bin\EmployeePublisher>jar cfm empliyeemanagement.jar MANIFEST.mf

 $\label{lem:coso} C:\OSGi\felix-framework-4.0.3\bin\EmployeePublisher>jar\ cfm\ empliyeemanagement.jar\ MANIFEST.mf$ 

#### 5. Create Main Manage Consumer

C:\OSGi\felix-framework-4.0.3\bin\MainManageConsumer>jar cfm mainmanageconsumer.jar MANIFEST.mf\_

C:\OSGi\felix-framework-4.0.3\bin\MainManageConsumer>jar cfm mainmanageconsumer.jar MANIFEST.mf

#### 6. Create stock publisher

C:\OSGi\felix-framework-4.0.3\bin\StockPublisher>jar cfm stockpublisher.jar MANIFEST.mf

C:\OSGi\felix-framework-4.0.3\bin\StockPublisher>jar cfm stockpublisher.jar MANIFEST.mf

#### 7. Create supplier publisher

C:\OSGi\felix-framework-4.0.3\bin\supplyerPublisher>jar cfm suplierpuiblisher.jar MANIFEST.mf\_

C:\OSGi\felix-framework-4.0.3\bin\supplyerPublisher>jar cfm suplierpuiblisher.jar MANIFEST.mf

### Login to felix:-

```
C:\OSGi\felix-framework-4.0.3>java -jar bin/felix.jar
WARNING: An illegal reflective access operation has occurred
WARNING: Illegal reflective access by org.apache.felix.framework.util.SecureAction (file:/C:/OSGi/felix-framework-4.0.3/bin/felix.jar) to method java.net.UR
LClassLoader.addURL(java.net.URL)
WARNING: Please consider reporting this to the maintainers of org.apache.felix.framework.util.SecureAction
WARNING: ble ---illegal-access=varn to enable warnings of further illegal reflective access operations
WARNING: All illegal access operations will be denied in a future release
Welcome to Apache Felix Gogo
g!
```

#### Install OSGi

#### 1. Install AuthManager

g! install file:/C/OSGi/felix-framework-4.0.3/bin/AuthManagePublisher/authmanagepublisher.jar\_

#### 2. Install BillManagePublishe

g! install file:/C/OSGi/felix-framework-4.0.3/bin/BillManagePublisher/billmanagepublisher.jar\_

#### 3. Install EmployeeManager

g! install file:/C/OSGi/felix-framework-4.0.3/bin/EmployeePublisher/employeepublisher.jar

#### 4. Install StockPublisher

g! install file:/C/OSGi/felix-framework-4.0.3/bin/StockPublisher/stockpublisher.jar

#### 5. Install SupplierPublisher

g! install file:/C/OSGi/felix-framework-4.0.3/bin/SupplyerPublisher/suplierpublisher.jar\_

#### 6. Install MainManageConsumer

g! install file:/C/OSGi/felix-framework-4.0.3/bin/MainManageConsumer/mainmanageconsumer.jar\_

# Sample Behavior and Outputs

```
id
                    Bundle
        State
0
        ACTIVE
                    org.eclipse.osgi 3.18.200.v20221116-1324
                    Fragments=682
                    org.eclipse.equinox.simpleconfigurator_1.4.200.v20221111-1340
1
        ACTIVE
        ACTIVE
                    AuthManagePublisher_1.0.0.qualifier
        ACTIVE
                    BillManagePublisher_1.0.0.qualifier
4
        ACTIVE
                    EmployeePublisher_1.0.0.qualifier
        ACTIVE
                    JavaDataBaseCon_1.0.0.qualifier
                    MainManageConsumer_1.0.0.qualifier
        RESOLVED
                    StockPublisher_1.0.0.qualifier
        ACTIVE
        ACTIVE
                    bcpg_1.72.0
9
        ACTIVE
                    bcprov_1.72.0
```

### Login

```
Auth Manage Publisher service started
Database Publisher service started
Connected!
Bill Manage Publisher service started
Connected!
Employee Publisher Started
Connected!
Start Subscriber Service
Stock publisher started Connected!
Supplier Publisher Started
Connected!
.....Login Page
Enter Username:
lochani
Enter Password:
Login Successfull
Welcome to the Wireles waves Admin Panel
 -----Home Page-----
1 - Bill Management System
  - Stcock Management System
  - Supplier Management System
  - Employee Management System
  - Admin Management System
Enter the number of the system you want to access:
```

### Admin Management System

### Add Admin

```
----Admin Management System------
1 - Add Admin
2 - Update Admin
3 - View All Admins
4 - Search Admin by ID
5 - Delete Admin
Enter the number of the operation you want to perform:
Enter User ID:
4
Enter Username:
janani
Enter Email:
janani@gmail.com
Enter Password:
janani
Enter Phone:
0710414545
User Inserted Successfully
```

### **Update Admin**

```
-----Admin Management System------
1 - Add Admin
 - Update Admin
 - View All Admins
4 - Search Admin by ID
5 - Delete Admin
Enter the number of the operation you want to perform:
Update User by ID from Database
Enter User ID:
ID
     User Name
                          janani@gmail.com
                                                        0710414545
      janani
Enter New User Name:
jananim
Enter New User Email:
jananim@gmail.com
Enter New User Password:
jananim
Enter New User Phone:
0710418045
User Updated Successfully
```

### Retrieve All Admins

```
-----Admin Management System------
1 - Add Admin
2 - Update Admin
3 - View All Admins
4 - Search Admin by ID
5 - Delete Admin
Enter the number of the operation you want to perform:
Loading All Users from Database
ID
     User Name
                          Email
     lochani
                         lochani@gmail.com
                                                       0701235448
     mayadunna
                         mayadunna@gmail.com
                                                       0777383828
                                                       0710418045
      jananim
                          jananim@gmail.com
```

### Delete Admin

```
1 - Add Admin
2 - Update Admin
3 - View All Admins
4 - Search Admin by ID
5 - Delete Admin

Enter the number of the operation you want to perform:
5
.....

Delete User by ID from Database
....

Enter User ID:
4
User Deleted Successfully
```

### Search Admin

### Bill Management System

```
1 - Bill Management System
2 - Stock Management System
3 - Supplier Management System
4 - Employee Management System
5 - Admin Management System

Enter the number of the system you want to access:
1

------Bill Management System------

1 - Add Bill
2 - Update Bill
3 - View All Bills
4 - Search Bill by ID
5 - Delete Bill

Enter the number of the operation you want to perform:
```

### Add Bills

```
-----Bill Management System------
1 - Add Bill
2 - Update Bill
3 - View All Bills
4 - Search Bill by ID
5 - Delete Bill
Enter the number of the operation you want to perform:
Enter Customer Name:
Janani Mayadunna
Enter Phone Model:
SM-458
Enter Phone Brand:
Samsung
Enter Phone IMEI:
45687123954
Enter Phone Price:
85000
Enter Discount:
10
Total: 84990.0
Bill Inserted
```

### **Update Bills**

```
Enter the number of the operation you want to perform:
Enter Bill ID : 10
                                     Phone Brand
   Customer Name
                       Phone Model
                                                   Phone TMFT
                                                                  Phone Price Discount
                                                                                     Total
     Janani Mayadunna
                                                   45687123954
                                                                  85000.00 10.00
                                                                                     84990.00
                       SM-458
                                     Samsung
wich field you want to update ?
1. Customer Name
2. Phone Model
3. Phone Brand
4. Phone IMEI
5. Phone Price & Discount
Enter your choice : 2
Enter new Phone Model :
SM-5555
Bill updated successfully
```

### View All Bills

```
-----Bill Management System-----
  - Add Bill
  - Update Bill
  - View All Bills
  - Search Bill by ID
5 - Delete Bill
Enter the number of the operation you want to perform:
:.....
Loading All Bills from Database
ID
                         Phone Model
                                                       Phone IMEI
                                                                       Phone Price Discount
     Customer Name
                                        Phone Brand
                                                                                            Total
                                                        34234234324
                                                                                            19900.00
      abishek perera
                         SM-12312
                                        Samsung
                                                                       20000.00 100.00
      Lochani Ranasinghe
                         HW-132323
                                        Huawie
                                                        343433333
                                                                       50000.00
                                                                                 500.00
                                                                                            49500.00
     Sahan Perera
                         IP-123123
                                                        234234324
                                                                       500000.00 50.00
                                                                                            499950.00
                                         Apple
10
     Janani Mayadunna
                         SM-5555
                                                        45687123954
                                                                       85000.00 10.00
                                                                                           84990.00
                                        Samsung
```

### Search Bills

```
-----Bill Management System-----
   - Add Bill
   - Update Bill
   - View All Bills
   - Search Bill by ID
5 - Delete Bill
Enter the number of the operation you want to perform:
Get Bill by ID from Database
Enter Bill ID: 3
                          Phone Model
                                          Phone Brand
                                                         Phone IMEI
                                                                        Phone Price Discount
    Customer Name
                                                                                              Total
      Lochani Ranasinghe HW-132323
                                         Huawie
                                                                        50000.00 500.00
                                                                                              49500.00
```

### **Delete Bills**

```
1 - Add Bill
2 - Update Bill
3 - View All Bills
4 - Search Bill by ID
5 - Delete Bill

Enter the number of the operation you want to perform:
5
......

Delete Bill by Id from Database
.....

Enter Bill ID : 7
1 bill(s) deleted successfully
```

### Stock Management System

### Add Stocks

### View All Stocks

```
-----Stock Management System-----
1 - Add Stock
2 - Update Stock
3 - View All Stocks
4 - Search Stock by ID
5 - Delete Stock
Enter the number of the operation you want to perform:
Retrieving All Stocks
Stock ID Stock Brand Stock Model Quantity Unit Price
                  Samsung 25
         A71
                                       85000.0
         Apple
                   14
                                      550000.0
                   H456
         Huawei
                           75
                                       65400.0
```

### **Update Stocks**

```
-----Stock Management System------
1 - Add Stock
2 - Update Stock
3 - View All Stocks
 - Search Stock by ID
5 - Delete Stock
Enter the number of the operation you want to perform:
Enter ID of the stock needs updating : 3
... Searching The Stock To Update...
Stock ID Stock Brand Stock Model Quantity Unit Price
                             75
                                         65400.0
          Huawei H456
Which data needs updating?
1 - Stock Name
2 - Stock Model
3 - Quantity
4 - Unit Price
Enter your choice : 2
Enter new Stock Model : H777
Stock updated successfully
```

### Search Stocks

### **Delete Stocks**

### **Employee Management System**

### Add Employees

```
1 - Add Employee
2 - Update Employee
3 - View All Employees
4 - Search Employee by ID
5 - Delete Employee

Enter the number of the operation you want to perform:

Add Employee info

Enter Employee ID : 2
Enter Employee Name : Michelle
Enter Employee Email : michelle@wireless.com
Enter Employee Address : 173, Traquill terrace, Rajagiriya
Enter Employee Telephone: 0770416548
Enter Employee Type : Cashier

Employee Added Successfully

Employee Added Successfully
```

### **Update Employee**

```
Enter the number of the operation you want to perform:
                Update Employee Info
Enter Employee ID : 1
                                      Existing Employee Details
Employee ID : 1
Employee Name : sunera
Employee Email : sunera@gmail.com
Employee Address : 123, peralanda, ragama
Employee telNumber: 0777504303
Employee Type : Boss
Which field do you want to update?
1. Employee Name
2. Employee Email
3. Employee Address
4. Employee Telephone
5. Employee Type
Enter Employee Type : Owner
 Updated Employee Details
Employee ID : 1
Employee Name : sunera
Employee Email : sunera@gmail.com
Employee Address : 123, peralanda, ragama
Employee Telephone: 0777504303
Employee Type : Owner
```

### View All Employees

```
-----Employee Management System------
  - Add Employee
  - Update Employee
  - View All Employees
  - Search Employee by ID
  - Delete Employee
Enter the number of the operation you want to perform:
                                             All Employee Info
Employee ID
                    Employee Name Employee Email
                                                              Employee Address
                                                                                                         Employee Telephone Employee Type
                                         sunera@gmail.com 123, peralanda, ragama
michelle@wireless.com173, Traquill terrace, Rajagiriya
                                                                                                         0777504303
                                                                                                                              0wner
                                                                                                         0770416548
                                                                                                                               Cashier
```

### Search Employees

```
-----Employee Management System------
1 - Add Employee
  - Update Employee
  - View All Employees
   - Search Employee by ID
5 - Delete Employee
Enter the number of the operation you want to perform:
                  Employee Info
Enter Employee ID : 3
                                    Existing Employee Details
Employee ID : 3
Employee Name : Michelle
Employee Email : michelle@wireless.com
Employee Address : 173, Trage
Employee telNumber: 0770416548
Employee Type : Cashier
Do you want the tabular view? (y/n)
Employee Name EmployeeEmail
                                      Employee Address
                                                                               Employee Telephone Employee Type
Michelle michelle@wireless.com173, Traquill terrace, Rajagiriya 0770416548
                                                                                                  Cashier
```

### Delete Employees

```
1 - Add Employee
2 - Update Employee
3 - View All Employees
4 - Search Employee by ID
5 - Delete Employee

Enter the number of the operation you want to perform:
5

Delete an Employee

Enter Employee ID : 3

Employee with the Employee ID: 3 Deleted Successfully
```

### Supply Management System

### Add Supplier

### **Update Supplier**

```
-----Supplier Management System------
1 - Add Supplier
2 - Update Supplier
3 - View All Suppliers
4 - Search Supplier by ID
5 - Delete Supplier
Enter the number of the operation you want to perform:
.................
Update Supplier
Enter Supplier ID : 2
ID
     Supplier Name
                         Mobile Number
                                        Company Name
                                                       Address
2
     Jason Perera
                         0118746924
                                        Jason Pvt Ltd
                                                      New Kandy rd, Malabe
Which field you want to update?
1. Supplier Name
2. Mobile Number
3. Company Name
4. Address
Enter your choice : 3
Enter new Company Name : J Holdings
Supplier Updated Successfully
```

### **View All Suppliers**

```
-----Supplier Management System------
1 - Add Supplier
 - Update Supplier
 - View All Suppliers
4 - Search Supplier by ID
5 - Delete Supplier
Enter the number of the operation you want to perform:
Loading All Suppliers from Database
ID
     Supplier Name
                       Mobile Number
                                    Company Name
                                                  6th floor, Red cross building, Colombo 7
     Q holdings
                       0110418076
                                    Q holdings
     Jason Perera
                       0118746924
                                    Jason Pvt Ltd New Kandy rd, Malabe
```

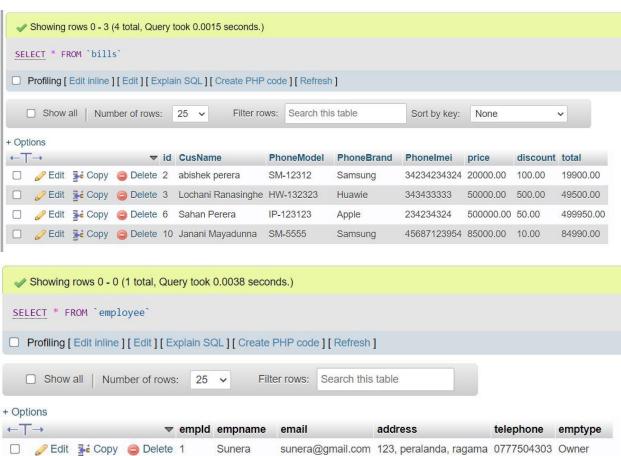
### **Search Suppliers**

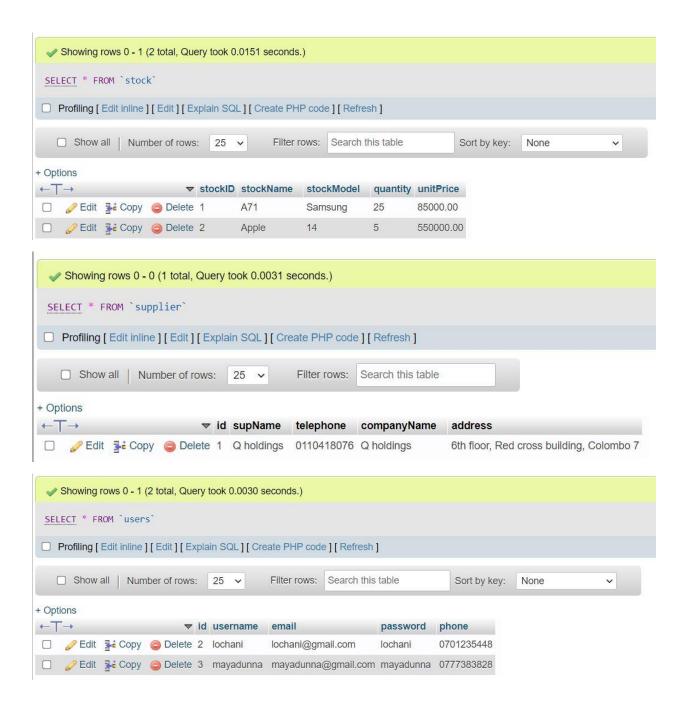
```
-----Supplier Management System------
1 - Add Supplier
2 - Update Supplier
3 - View All Suppliers
4 - Search Supplier by ID
5 - Delete Supplier
Enter the number of the operation you want to perform:
Get Supplier by Id
Enter Supplier ID : 2
ID
     Supplier Name
                         Mobile Number
                                         Company Name
                                                        Address
     Jason Perera
                          0118746924
                                         J Holdings
                                                        New Kandy rd, Malabe
```

### **Delete Suppliers**

# MySQL Database







# **Individual Contribution**

Registration No	Student Name	Individual Contribution
IT21013096	Perera A.S.A	Implement Admin Managing Producer. Implement Bill Managing Producer. Contributed to implement the database connection. Contributed for the final assignment report.
IT21026898	Mayadunna J. B	Implement Stock Managing Producer. Contributed to implement the database connection. Contributed for the final assignment report.
IT21022838	Ranasinghe H.R.A.L.N	Implement Employee Managing Producer. Contributed to implement the database connection. Contributed for the final assignment report.
IT21018282	Udunuwara U.K.C	Implement Supplier Managing Producer. Contributed to implement the database connection. Contributed for the final assignment report.

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