Sri Lanka Institute of Information Technology

Restaurant Management System

Software Architecture (SE3030)

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Introduction

Terrace is a cutting-edge online restaurant system that promises to streamline restaurant everyday operations and deliver a superior customer experience. This platform is made to be simple to use and convenient for customers as well as restaurant staff.

For restaurant operations, Terrace's four main features—Store Management, Order Management, Delivery Management, and Employee Management—are essential. The admin may quickly manage the inventory with the Store Management function by monitoring the stock that is available, adding products, amending item data, and removing things from the store. This aids the restaurant in monitoring its supply levels and making wise restocking choices.

Customers can choose things based on their preferences and generate the bill using the Order Management tool. Customers' ordering procedures are made easier by this feature, which shortens the time it takes to place an order. Customers also get additional discounts based on how many orders they've placed, which encourages customer loyalty.

Customers can enter the delivery distance and select Cash on Delivery as their payment method using the Delivery Management tool. The delivery process is simplified and made hassle-free by the automatic generation of the delivery cost based on this data.

Finally, the Employee Management function enables restaurant managers to handle duties pertaining to staff members, like creating salary sheets, monitoring bonuses depending on leave taken, and registering new employees. The management of employees is made simpler by this function, which makes it simpler for restaurant managers to keep track of and handle employee-related responsibilities.

In conclusion, Terrace is a fantastic online restaurant ordering system that offers a seamless user experience for both patrons and staff. Restaurants can effectively manage their operations and offer a better client experience thanks to its four main functions: store management, order management, delivery management, and employee management.
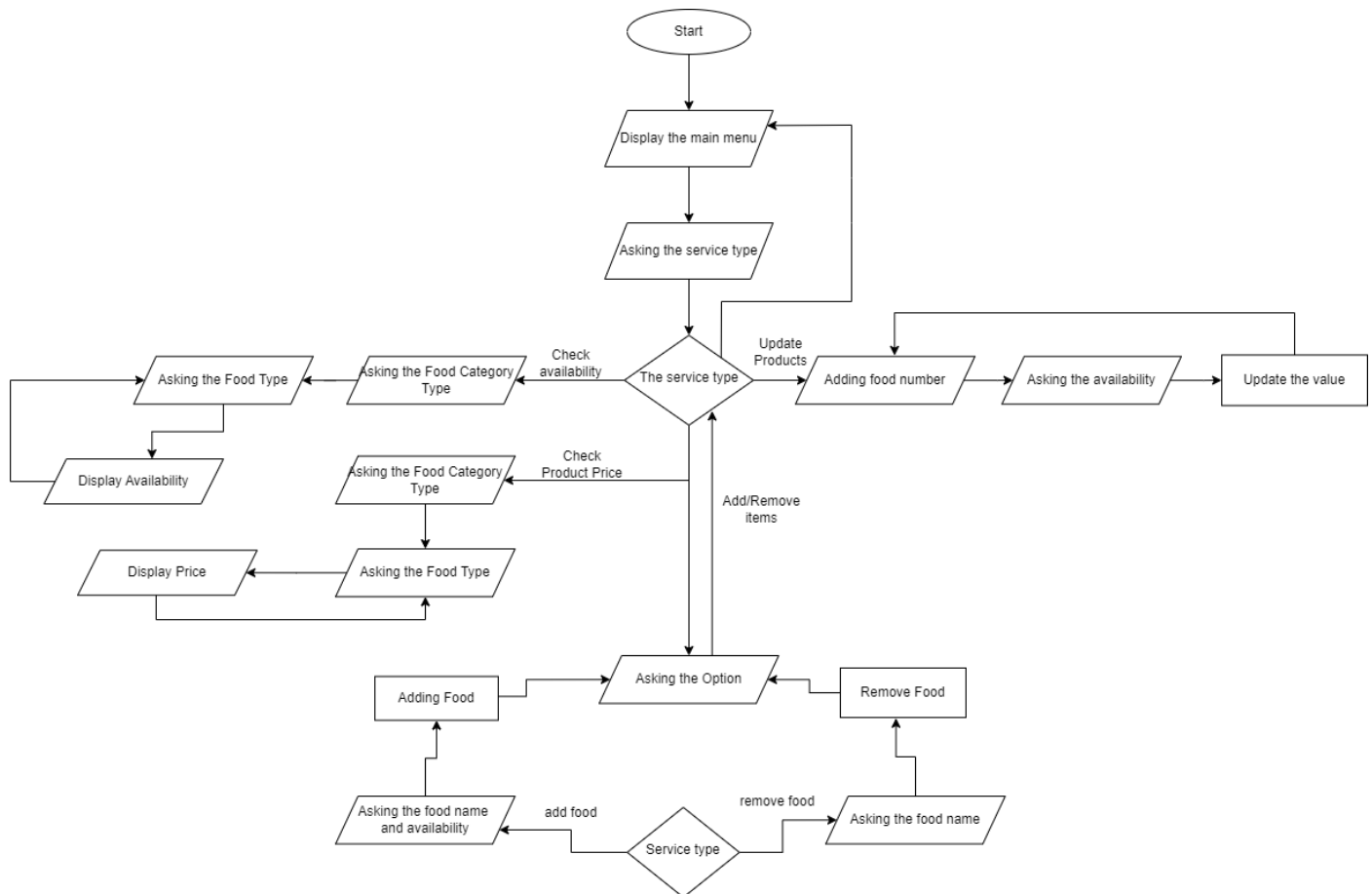
Store Management Service

Flow Chart

Figure 1.1.1 System overflow diagram for store management

Manifest Implementation

Publisher : Store Service Publisher

```
StoreServicePublisher ⊠
 1 Manifest-Version: 1.0
 2 Bundle-ManifestVersion: 2
 3 Bundle-Name: StoreServicePublisher
 4 Bundle-SymbolicName: StoreServicePublisher
 5 Automatic-Module-Name: StoreServicePublisher
 6 Bundle-Version: 1.0.0.qualifier
 7 Bundle-Activator: com.mtit.storeservice.StoreServicePublisherActivator
 8 Export-Package: com.mtit.storeservice
 9 Import-Package: org.osgi.framework;version="1.3.0"
10 Bundle-RequiredExecutionEnvironment: JavaSE-1.8
11
```

Figure 1.2.Error! Use the Home tab to apply 0 to the text that you want to appear here..1 Store Publisher Manifest file

Publisher : Store Price Publisher

```
PricePublisher ⊠
 1 Manifest-Version: 1.0
 2 Bundle-ManifestVersion: 2
 3 Bundle-Name: PricePublisher
 4 Bundle-SymbolicName: PricePublisher
 5 Bundle-Version: 1.0.0.qualifier
 6 Bundle-Activator: osgi_pricepublisher.PricePublisherActivator
 7 Bundle-RequiredExecutionEnvironment: JavaSE-1.8
 8 Automatic-Module-Name: PricePublisher
 9 Import-Package: org.osgi.framework;version="1.3.0"
10 Bundle-ActivationPolicy: lazy
11 Export-Package: osgi_pricepublisher
12
```

Figure 1.2.2. Price Publisher Manifest File

Subscriber : Store Service Subscriber

```
StoreServiceSubscriber ⊠
 1 Manifest-Version: 1.0
 2 Bundle-ManifestVersion: 2
 3 Bundle-Name: StoreServiceSubscriber
 4 Bundle-SymbolicName: StoreServiceSubscriber
 5 Automatic-Module-Name: StoreServiceSubscriber
 6 Bundle-Version: 1.0.0.qualifier
 7 Bundle-Activator: osgi_storeservicesubscriber.StoreServiceSubscriberActivator
 8 Bundle-RequiredExecutionEnvironment: JavaSE-1.8
 9 Import-Package: com.mtit.storeservice,
10   org.osgi.framework;version="1.3.0",
11   osgi_pricepublisher
12
```

Figure 1.2.3 Store Subscriber Manifest file

Starting/ Stopping Providers

```
osgi> stop 2
Store Service Publish Genetrate - Stopped

osgi> start 2
Store Service Publisher Generate - Started
osgi>
```

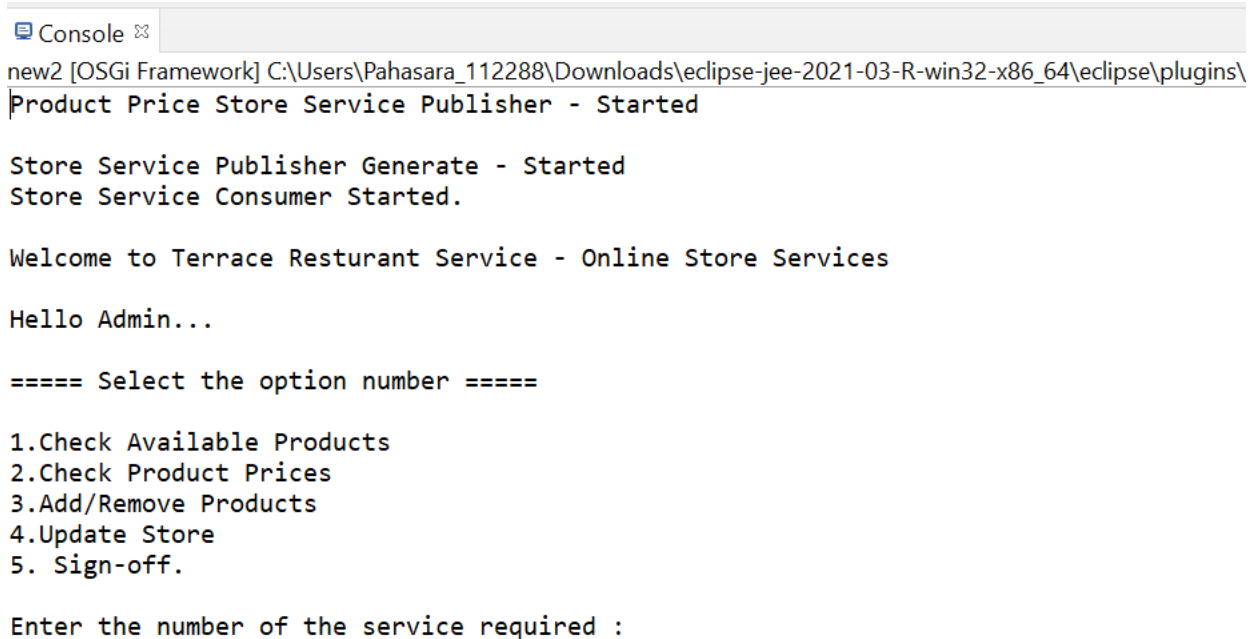*Figure 1.3.1 Store Publisher start and stop*

```
osgi> stop 2
Product Price Store Service - Stopped

osgi> start 2
Product Price Store Service Publisher - Started

osgi>
```

Figure 1.3.2 Price Publisher start and stop

🖳 Console ⌗

new2 [OSGi Framework] C:\Users\Pahasara_112288\Downloads\eclipse-jee-2021-03-R-win32-x86_64\eclipse\plugins\

```
Product Price Store Service Publisher - Started

Store Service Publisher Generate - Started
Store Service Consumer Started.

Welcome to Terrace Resturant Service - Online Store Services

Hello Admin...

===== Select the option number =====

1.Check Available Products
2.Check Product Prices
3.Add/Remove Products
4.Update Store
5. Sign-off.

Enter the number of the service required :
```
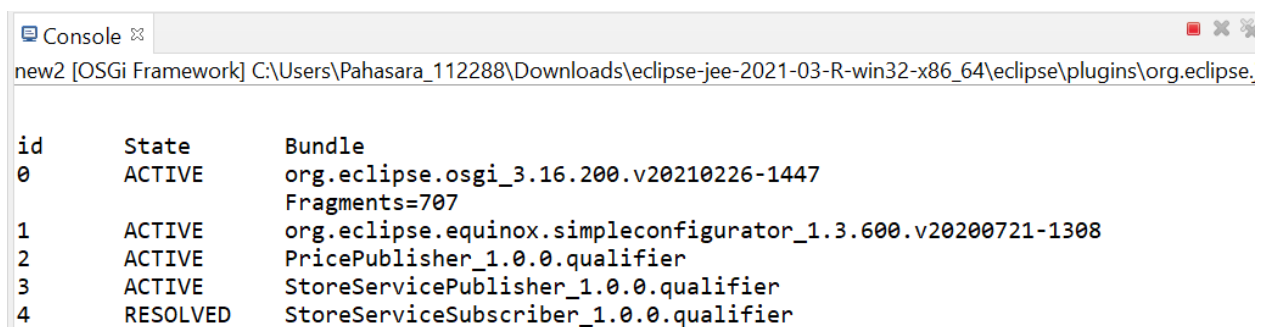
Figure 1.3.3. Store Subscriber start and stop

🖳 Console ⌗

new2 [OSGi Framework] C:\Users\Pahasara_112288\Downloads\eclipse-jee-2021-03-R-win32-x86_64\eclipse\plugins\org.eclipse.

```
id      State       Bundle
0       ACTIVE      org.eclipse.osgi_3.16.200.v20210226-1447
                    Fragments=707
1       ACTIVE      org.eclipse.equinox.simpleconfigurator_1.3.600.v20200721-1308
2       ACTIVE      PricePublisher_1.0.0.qualifier
3       ACTIVE      StoreServicePublisher_1.0.0.qualifier
4       RESOLVED    StoreServiceSubscriber_1.0.0.qualifier
```

Figure 1.3.4 Store Service bundles, when all are 'Active'

Functional behavior and outputs (screenshots)

```
Hello Admin...

===== Select the option number =====

1.Check Available Products
2.Check Product Prices
3.Add/Remove Products
4.Update Store
5. Sign-off.

Enter the number of the service required : 1
===== Food Category =====

1) Rice
2)Kottu


Enter the Food Category :
1
===== Enter the Rice number =====

01.Chicken Rice
02.Beef Rice
03.Mix Rice


Enter the number:
2
*Available*

===== Enter the Rice number =====

01.Chicken Rice
02.Beef Rice
03.Mix Rice
```

Figure 1.4.1 Output of food check availability

```
Welcome to Terrace Resturant Service - Online Store Services

Hello Admin...

===== Select the option number =====

1.Check Available Products
2.Check Product Prices
3.Add/Remove Products
4.Update Store
5. Sign-off.

Enter the number of the service required : 2
===== Food Category =====

1) Rice
2)Kottu


Enter the Food Category :
1
===== Enter the Rice number =====

01.Chicken Rice
02.Beef Rice
03.Mix Rice


Enter the number:
2
Rs.900.0
```

Figure 1.4.2 Output of check product prices

```
Welcome to Terrace Resturant Service - Online Store Services

Hello Admin...

===== Select the option number =====

1.Check Available Products
2.Check Product Prices
3.Add/Remove Products
4.Update Store
5. Sign-off.

Enter the number of the service required : 3
===== Select the Option =====

1) Add Food
2) Remove Food
3) Back

Enter the numebr(add/remove):
1
Enter the Food you want to add :
Vegetable

Enter the Availability (Available / Does not Available)
Available
Mix Rice
Chicken Rice
Beef Rice
Vegetable
```

Figure 1.4.3 Output of add food

```
Hello Admin...

===== Select the option number =====

1.Check Available Products
2.Check Product Prices
3.Add/Remove Products
4.Update Store
5. Sign-off.

Enter the number of the service required : 3
===== Select the Option =====

1) Add Food
2) Remove Food
3) Back

Enter the numebr(add/remove):
2
===== Currently available Food in the store =====

Mix Rice
Chicken Rice
Beef Rice
Vegetable
Enter the Food name you want to remove :
Vegetable
Mix Rice
Chicken Rice
Beef Rice
```

Figure 1.4.4 Output of remove food.

```
welcome to Terrace Resturant Service - Online Store Services

Hello Admin...

===== Select the option number =====

1.Check Available Products
2.Check Product Prices
3.Add/Remove Products
4.Update Store
5. Sign-off.

Enter the number of the service required : 4
===== Select the Option =====


1) Update Food
2)Exit

Enter the number:
1
Mix Rice - Available
Chicken Rice - Available
Beef Rice - Available
Poke - Available

Enter the Food Name:
Poke
Enter the Availability (Available / Does not Available):
NotAvailable
Mix Rice - Available
Chicken Rice - Available
Beef Rice - Available
Poke - NotAvailable
===== Select the Option =====
```

Figure 1.4.5 Output of change prices

```
Welcome to Terrace Resturant Service - Online Store Services

Hello Admin...

===== Select the option number =====

1.Check Available Products
2.Check Product Prices
3.Add/Remove Products
4.Update Store
5. Sign-off.

Enter the number of the service required : 5
Good byee..
osgi>
```

Figure 1.4.6 Output of Sign-out

Order Management Service

Flow Chart

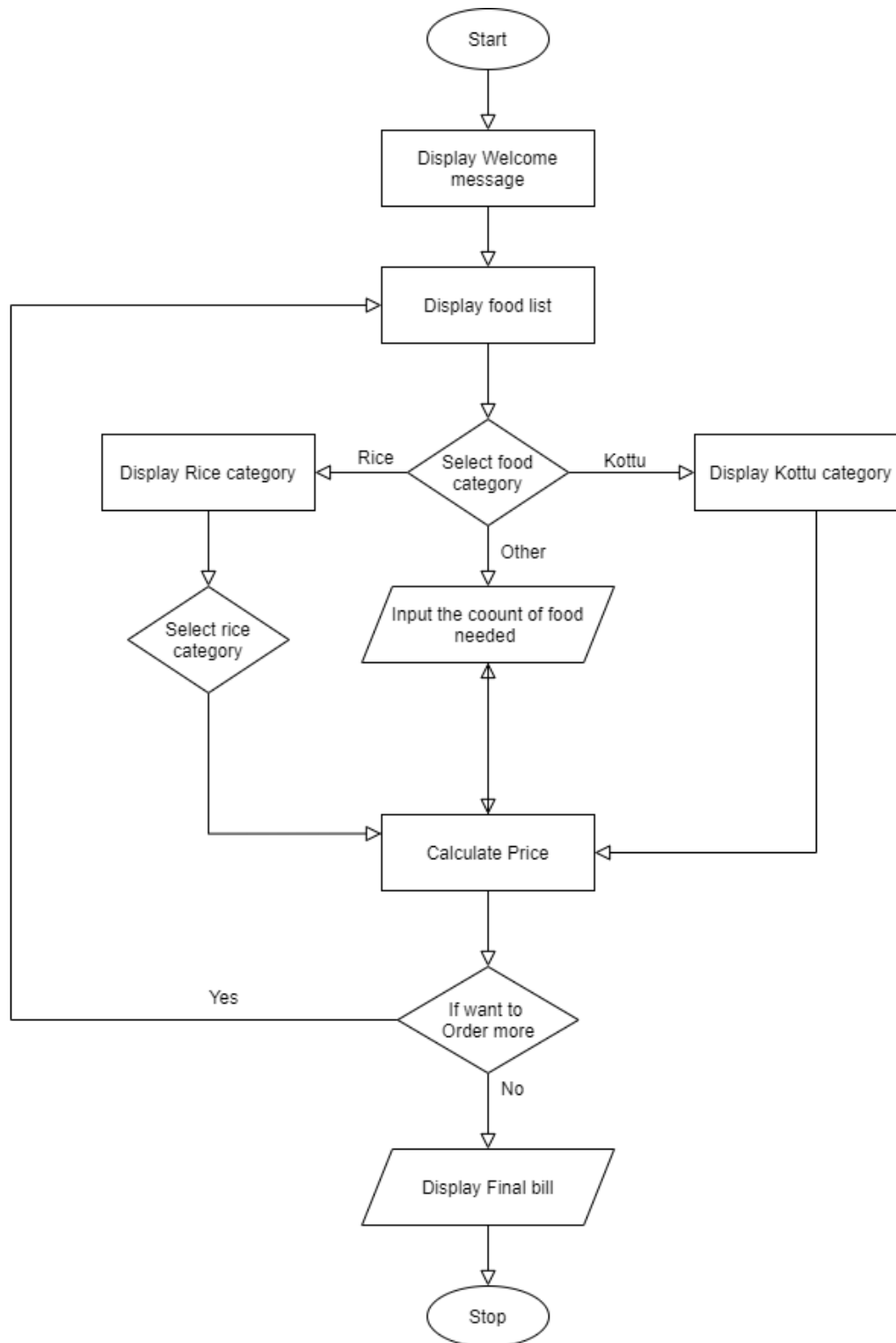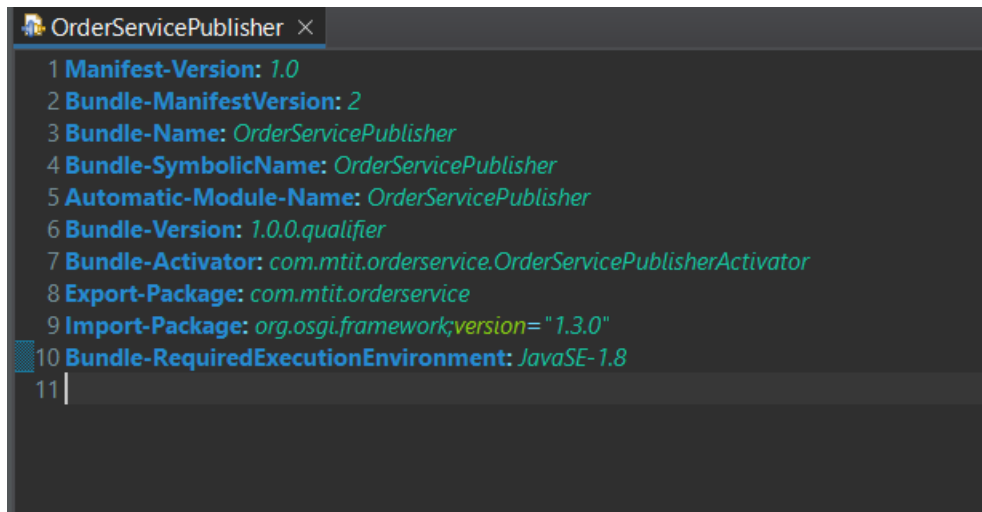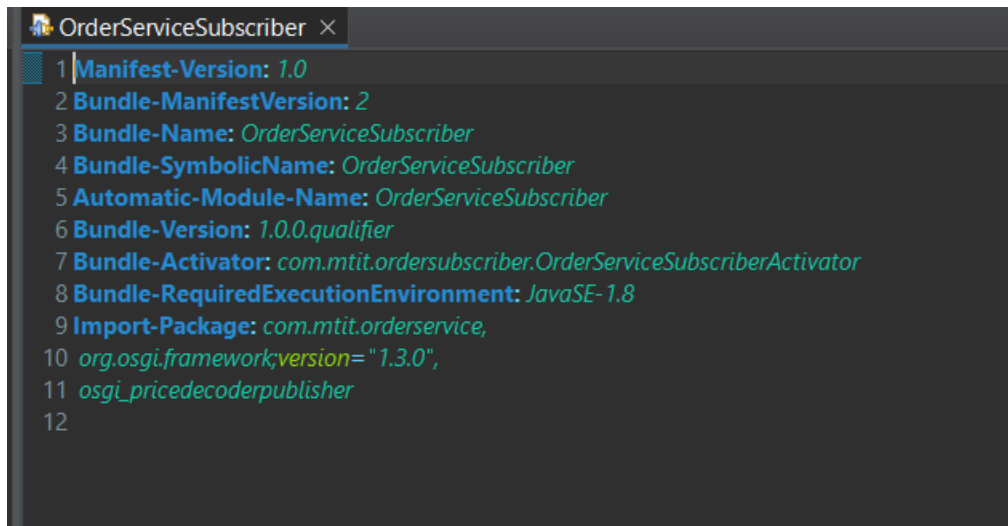*Figure 2.1.1 Order Management overflow Diagram*

Manifest Implementation

Publisher : Order Service Publisher

```
OrderServicePublisher ×
 1 Manifest-Version: 1.0
 2 Bundle-ManifestVersion: 2
 3 Bundle-Name: OrderServicePublisher
 4 Bundle-SymbolicName: OrderServicePublisher
 5 Automatic-Module-Name: OrderServicePublisher
 6 Bundle-Version: 1.0.0.qualifier
 7 Bundle-Activator: com.mtit.orderservice.OrderServicePublisherActivator
 8 Export-Package: com.mtit.orderservice
 9 Import-Package: org.osgi.framework;version="1.3.0"
10 Bundle-RequiredExecutionEnvironment: JavaSE-1.8
11
```

Figure 2.2.1Order Publisher Manifest file

Subscriber : Order Service Subscriber

```
OrderServiceSubscriber ×
 1 Manifest-Version: 1.0
 2 Bundle-ManifestVersion: 2
 3 Bundle-Name: OrderServiceSubscriber
 4 Bundle-SymbolicName: OrderServiceSubscriber
 5 Automatic-Module-Name: OrderServiceSubscriber
 6 Bundle-Version: 1.0.0.qualifier
 7 Bundle-Activator: com.mtit.ordersubscriber.OrderServiceSubscriberActivator
 8 Bundle-RequiredExecutionEnvironment: JavaSE-1.8
 9 Import-Package: com.mtit.orderservice,
10  org.osgi.framework;version="1.3.0",
11  osgi_pricedecoderpublisher
12
```

Figure 2.2.2 Order Subscriber Manifest file

Starting/ Stopping Providers

```
osgi> stop 2
Order Generator Service - Stopped

osgi> start 2
Order Generator Service Publisher - Started
osgi>
```

Figure 2.3.1 Order Publisher Start and stop

```
Problems   Target Platform State   Console ×
all [OSGi Framework] C:\Program Files\eclipse\plugins\org.eclipse.justj.openjdk.hots
Order Generator Service Publisher - Started
Price Decoder Service Publisher - Started

Order Service Consumer Started.
Welcome to TERRACE Restaurent Service - Online Order Service

Check your choice below

1. Rice
2. Kottu
3. Hoppers
4. Parata
5. String hoppers


Select a food category :
```
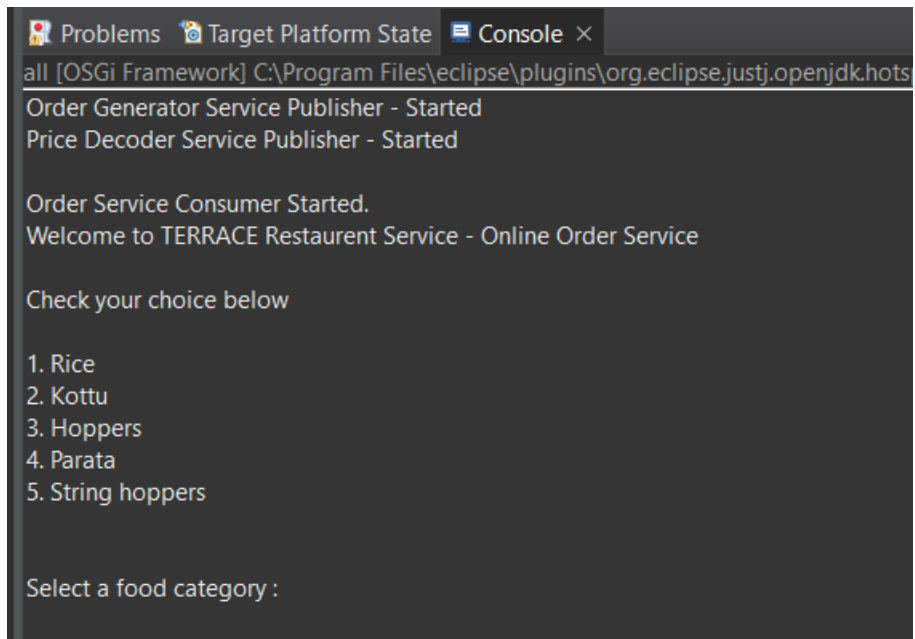
Figure 2.3.2 Order Service Subscriber start

Functional behavior and outputs (screenshots)

```
Order Generator Service Publisher - Started
Price Decoder Service Publisher - Started

Order Service Consumer Started.
Welcome to TERRACE Restaurent Service - Online Order Service

Check your choice below

1. Rice
2. Kottu
3. Hoppers
4. Parata
5. String hoppers


Select a food category : 1
1. Rice & curry
2. Fried rice
3. Mix rice
Enter the number : 1
1. Vegetable
2. Egg
3. Fish
4. Chicken

Enter the number : 1
Do you want order more?
n
Total Bill Amount : 200
```

Figure 2.4.1 Output of order vegetable rice and curry category

```
Order Service Consumer Started.
Welcome to TERRACE Restaurent Service - Online Order Service

Check your choice below

1. Rice
2. Kottu
3. Hoppers
4. Parata
5. String hoppers


Select a food category : 2

1. Vegetable Kottu
2. Egg Kottu
3. Fish Kottu
4. Chicken Kottu
5. Beef Kottu
6. Cheese Kottu

Enter the number : 4
Do you want order more?
n
Total Bill Amount : 480
```

Figure 2.4.2 Output of Select Chicken Kottu

```
Order Service Consumer Started.
Welcome to TERRACE Restaurent Service - Online Order Service

Check your choice below

1. Rice
2. Kottu
3. Hoppers
4. Parata
5. String hoppers


Select a food category : 4

How much do you want?
10
Do you want order more?
n
Total Bill Amount : 700
```

Figure 2.4.3 Output of Selecting other food category

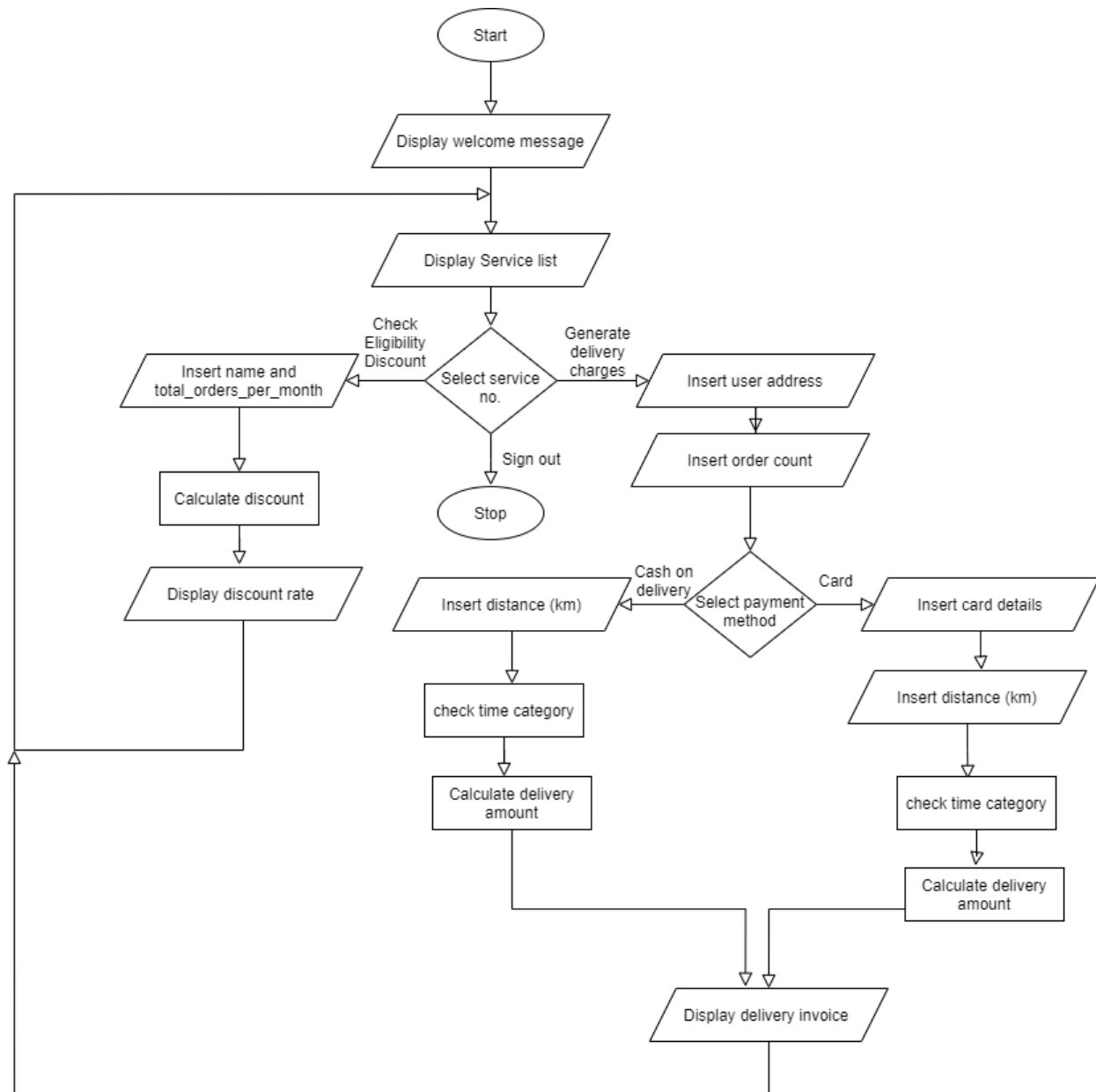# Delivery Management Service

Flow Chart

Figure 3.1.1 Delivery Management overflow diagram

Manifest Implementation

Publisher : Delivery Service Publisher


```
 1 Manifest-Version: 1.0
 2 Bundle-ManifestVersion: 2
 3 Bundle-Name: DeliveryPublisher
 4 Bundle-SymbolicName: DeliveryPublisher
 5 Bundle-Version: 1.0.0.qualifier
 6 Bundle-Activator: com.mtit.deliverypublisher.DeliveryPublisherActivator
 7 Export-Package: com.mtit.deliverypublisher
 8 Import-Package: org.osgi.framework;version="1.3.0"
 9 Bundle-RequiredExecutionEnvironment: JavaSE-17
10
11
```

Figure 3.2.1 Delivery Service Publisher Manifest file

Subscriber : Delivery Service Subscriber


```
 1 Manifest-Version: 1.0
 2 Bundle-ManifestVersion: 2
 3 Bundle-Name: DeliverySubscriber
 4 Bundle-SymbolicName: DeliverySubscriber
 5 Automatic-Module-Name: DeliverySubscriber
 6 Bundle-Activator: com.mtit.deliverysubscriber.DeliverySubscriberActivator
 7 Bundle-Version: 1.0.0.qualifier
 8 Bundle-RequiredExecutionEnvironment: JavaSE-17
 9 Import-Package: com.mtit.deliverypublisher,
10  org.osgi.framework;version="1.3.0"
11 Export-Package: com.mtit.deliverysubscriber
12
```

Figure 3.2.2 Delivery Service Subscriber Manifest file

Starting/ Stopping Providers


```
osgi> start 2
Delivery Publisher - Started
osgi>
osgi>
```

Figure 3.3.1 Delivery Service Publisher start


```
osgi> stop 2
Delivery Publisher - Stopped

osgi>
```

Figure 3.3.2 Delivery Service Publisher stop

```
osgi> start 3
Delivery Service Consumer Started.

--------- Welcome to Terrace Restaurant - Delivery Service ---------


-------------------------------------
               SERVICE LIST
-------------------------------------


       [1]. Generate Delivery Charges
       [2]. Check Eligibility Discounts
       [3]. Sign-off


-------------------------------------

Enter the number of the service required :
```

Figure 3.3.3 Delivery Service Subscriber start

```
osgi> stop 3
--- Good Bye ---

osgi>
osgi>
osgi>
```

Figure 3.3.4 Delivery Service Subscriber stop

```
■ Console ×
New_configuration [OSGi Framework] C:\Program Files\Java\jdk-17.0.2\bin\javaw.exe  (Mar 19, 2023, 7:02:39 PM)

id       State        Bundle
0        ACTIVE       org.eclipse.osgi_3.17.100.v20211104-1730
                      Fragments=724
1        ACTIVE       org.eclipse.equinox.simpleconfigurator_1.4.0.v20210315-2228
2        ACTIVE       DeliveryPublisher_1.0.0.qualifier
3        ACTIVE       DeliverySubscriber_1.0.0.qualifier
4        ACTIVE       biz.aQute.bndlib_5.1.2.202007211702
5        ACTIVE       ch.qos.logback.classic_1.2.3.v20200428-2012
                      Fragments=615
6        ACTIVE       ch.qos.logback.core_1.2.3.v20200428-2012
7        RESOLVED     ch.qos.logback.slf4j_1.2.3.v20200428-2012
                      Master=952
8        ACTIVE       com.fasterxml.jackson.core.jackson-annotations_2.12.1.v20210128-1726
9        ACTIVE       com.fasterxml.jackson.core.jackson-core_2.12.1.v20210128-1726
10       ACTIVE       com.fasterxml.jackson.core.jackson-databind_2.12.1.v20210128-1726
11       ACTIVE       com.google.gson_2.8.8.v20211029-0838
12       ACTIVE       com.google.guava_30.1.0.v20210127-2300
13       ACTIVE       com.google.guava_27.1.0.v20190517-1946
14       ACTIVE       com.google.guava_21.0.0.v20170206-1425
15       ACTIVE       com.google.javascript_0.0.20160315.v20161124-1903
16       ACTIVE       com.google.protobuf_2.4.0.v201105131100
17       ACTIVE       com.hierynomus.sshj_0.24.0
18       ACTIVE       com.ibm.icu_67.1.0.v20200706-1749
19       ACTIVE       com.jcraft.jsch_0.1.55.v20190404-1902
20       ACTIVE       com.jcraft.jzlib_1.1.3
21       ACTIVE       com.sun.el_2.2.0.v201303151357
22       ACTIVE       com.sun.jna_5.8.0.v20210503-0343
23       ACTIVE       com.sun.jna_4.5.1.v20190425-1842
24       ACTIVE       com.sun.jna.platform_5.8.0.v20210406-1004
25       ACTIVE       com.sun.jna.platform_4.5.1.v20190425-1842
```

Figure 3.3.5 Bundle Start

```
 Console ×
New_configuration [OSGi Framework] C:\Program Files\Java\jdk-17.0.2\bin\javaw.exe  (Mar 19, 2023, 7:02:39 PM)

id      State       Bundle
0       ACTIVE      org.eclipse.osgi_3.17.100.v20211104-1730
                    Fragments=724
1       ACTIVE      org.eclipse.equinox.simpleconfigurator_1.4.0.v20210315-2228
2       RESOLVED    DeliveryPublisher_1.0.0.qualifier
3       RESOLVED    DeliverySubscriber_1.0.0.qualifier
4       ACTIVE      biz.aQute.bndlib_5.1.2.202007211702
5       ACTIVE      ch.qos.logback.classic_1.2.3.v20200428-2012
                    Fragments=615
6       ACTIVE      ch.qos.logback.core_1.2.3.v20200428-2012
7       RESOLVED    ch.qos.logback.slf4j_1.2.3.v20200428-2012
                    Master=952
8       ACTIVE      com.fasterxml.jackson.core.jackson-annotations_2.12.1.v20210128-1726
9       ACTIVE      com.fasterxml.jackson.core.jackson-core_2.12.1.v20210128-1726
10      ACTIVE      com.fasterxml.jackson.core.jackson-databind_2.12.1.v20210128-1726
11      ACTIVE      com.google.gson_2.8.8.v20211029-0838
12      ACTIVE      com.google.guava_30.1.0.v20210127-2300
13      ACTIVE      com.google.guava_27.1.0.v20190517-1946
14      ACTIVE      com.google.guava_21.0.0.v20170206-1425
15      ACTIVE      com.google.javascript_0.0.20160315.v20161124-1903
16      ACTIVE      com.google.protobuf_2.4.0.v201105131100
17      ACTIVE      com.hierynomus.sshj_0.24.0
18      ACTIVE      com.ibm.icu_67.1.0.v20200706-1749
19      ACTIVE      com.jcraft.jsch_0.1.55.v20190404-1902
20      ACTIVE      com.jcraft.jzlib_1.1.3
21      ACTIVE      com.sun.el_2.2.0.v201303151357
22      ACTIVE      com.sun.jna_5.8.0.v20210503-0343
23      ACTIVE      com.sun.jna_4.5.1.v20190425-1842
24      ACTIVE      com.sun.jna.platform_5.8.0.v20210406-1004
25      ACTIVE      com.sun.jna.platform_4.5.1.v20190425-1842
```

Figure 3.3.6 Bundle stop

SOFTWARE ARCHITECTURE-

Functional behavior and outputs (screenshots)

```
--------- Welcome to Terrace Restaurant - Delivery Service ---------


---------------------------------------
                SERVICE LIST
---------------------------------------


        [1]. Generate Delivery Charges
        [2]. Check Eligibility Discounts
        [3]. Sign-off


---------------------------------------
Enter the number of the service required : 1


---------------------------------------
                USER DETAILS
---------------------------------------


1. Enter your Address :  Colombo

---------------------------------------
               SELECT ORDER COUNT
---------------------------------------
        [1] - Order count ( 0 - 1 )
        [2] - Order count ( 2 - 4 )
        [3] - Order count ( over 4 )

---------------------------------
2.Enter the items count you ordered  : 1
```

Figure 3.4.1 Output of generate delivery charges

```
----------------------------------------
              SELECT PAYMENT METHOD
----------------------------------------


        [1] - Cash on delivery
        [2] - Online card payments

----------------------------------------
3. Select payment method    : 1

4. Enter the distance(KM) :   20

----------------------------------------
        Delivery Invoice
----------------------------------------
        Distance-based delivery fee : 1800.0
        Cash On Delivery charges : 20.0
        Peak hour surcharge : 0.0
        Card discount (-) : 0.0
        Total delivery fee : 1820.0

---------Thank You !-----------
```

Figure 3.4.2 Output 2 of generate delivery charges

```
--------- Welcome to Terrace Restaurant - Delivery Service ---------


--------------------------------------
            SERVICE LIST
--------------------------------------


    [1]. Generate Delivery Charges
    [2]. Check Eligibility Discounts
    [3]. Sign-off

--------------------------------------
Enter the number of the service required : 2

---------------------------------
1. Enter your name : Shehani
2. Enter total Number of Orders for the Month : 5

Sorry Shehani, you have not eligible for a discount this month. Thank you for your contribution and we hope to see you again soon.
```

Figure 3.4.3 Output of check eligibility discount

```
Delivery Publisher - Started
Delivery Service Consumer Started.

--------- Welcome to Terrace Restaurant - Delivery Service ---------


-----------------------------------------
                 SERVICE LIST
-----------------------------------------


        [1]. Generate Delivery Charges
        [2]. Check Eligibility Discounts
        [3]. Sign-off


-----------------------------------------

Enter the number of the service required : 3
Good byee..
osgi>
```

Figure 3.4.4 Output of Sign-out

Employee Management Service

Flow Chart
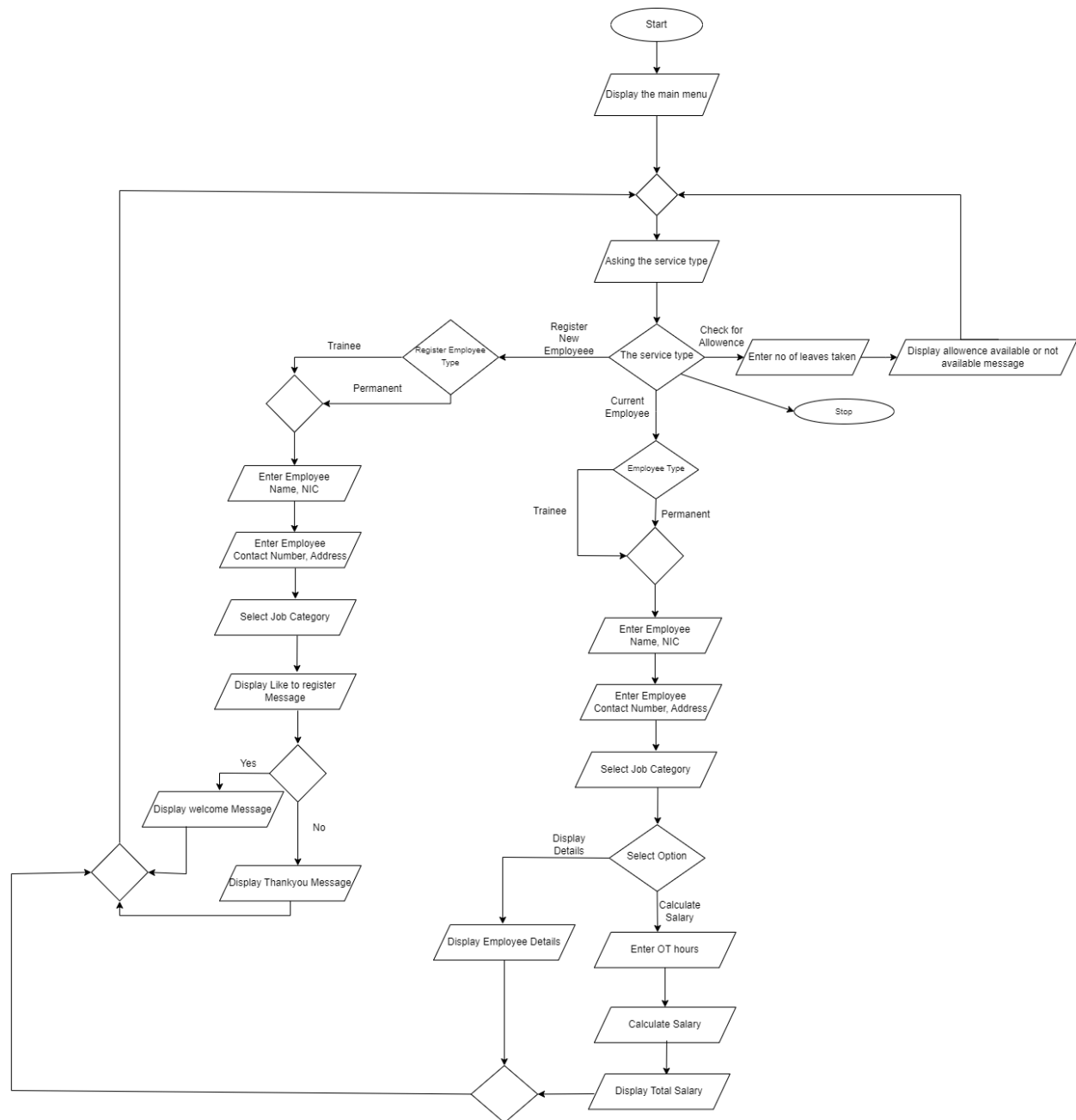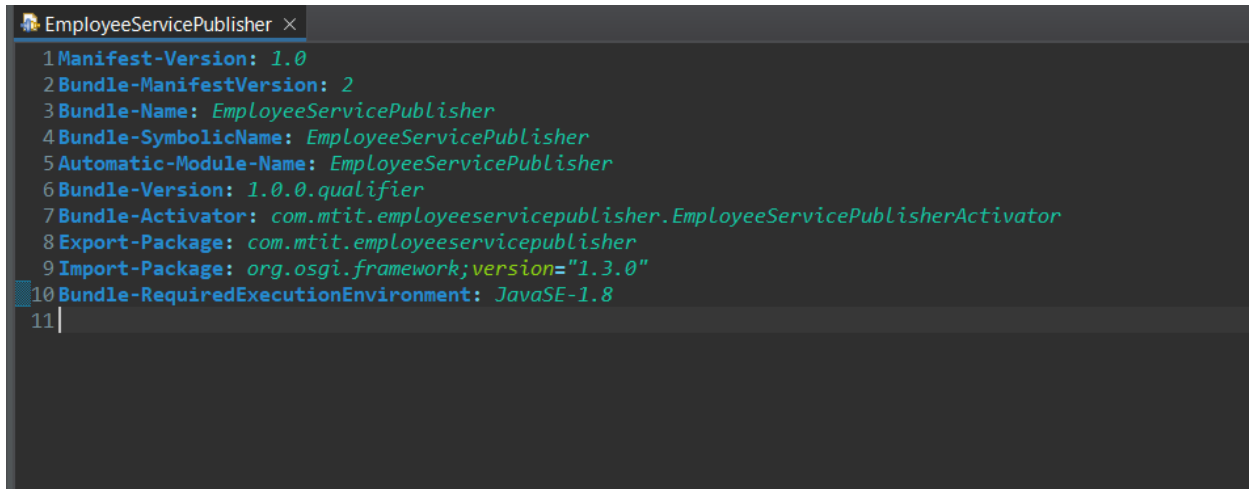
Figure 4.1.1 Employee Management overflow diagram
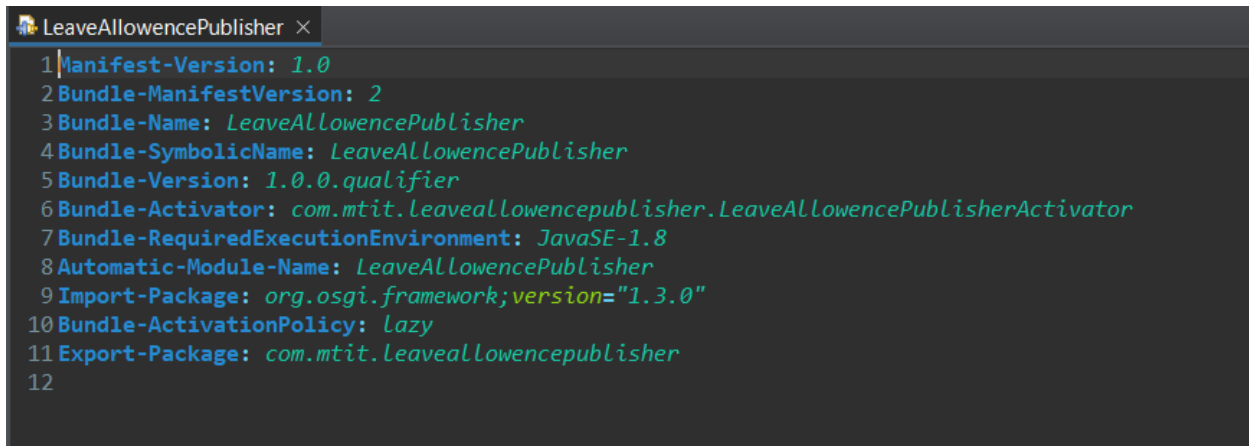
Manifest Implementation

Publisher : Employee Service Publisher

```
1 Manifest-Version: 1.0
2 Bundle-ManifestVersion: 2
3 Bundle-Name: EmployeeServicePublisher
4 Bundle-SymbolicName: EmployeeServicePublisher
5 Automatic-Module-Name: EmployeeServicePublisher
6 Bundle-Version: 1.0.0.qualifier
7 Bundle-Activator: com.mtit.employeeservicepublisher.EmployeeServicePublisherActivator
8 Export-Package: com.mtit.employeeservicepublisher
9 Import-Package: org.osgi.framework;version="1.3.0"
10 Bundle-RequiredExecutionEnvironment: JavaSE-1.8
11
```

Figure 4.2.1 Employee Service Publisher Manifest file

Publisher : Leave Allowence Publisher

```
1 Manifest-Version: 1.0
2 Bundle-ManifestVersion: 2
3 Bundle-Name: LeaveAllowencePublisher
4 Bundle-SymbolicName: LeaveAllowencePublisher
5 Bundle-Version: 1.0.0.qualifier
6 Bundle-Activator: com.mtit.leaveallowencepublisher.LeaveAllowencePublisherActivator
7 Bundle-RequiredExecutionEnvironment: JavaSE-1.8
8 Automatic-Module-Name: LeaveAllowencePublisher
9 Import-Package: org.osgi.framework;version="1.3.0"
10 Bundle-ActivationPolicy: lazy
11 Export-Package: com.mtit.leaveallowencepublisher
12
```

Figure 4.2.2 Leave Allowance Publisher Manifest file

Subscriber : Employee Service Subscriber

```
EmployeeServiceSubscriber ×
1 Manifest-Version: 1.0
2 Bundle-ManifestVersion: 2
3 Bundle-Name: EmployeeServiceSubscriber
4 Bundle-SymbolicName: EmployeeServiceSubscriber
5 Automatic-Module-Name: EmployeeServiceSubscriber
6 Bundle-Version: 1.0.0.qualifier
7 Bundle-Activator: com.mtit.employeeservicesubscriber.EmployeeServiceSubscriberActivator
8 Bundle-RequiredExecutionEnvironment: JavaSE-1.8
9 Import-Package: com.mtit.employeeservicepublisher,
10  com.mtit.leaveallowencepublisher,
11  org.osgi.framework;version="1.3.0"
12
```

Figure 4.2.3 Employee Service Subscriber Manifest

Starting/ Stopping Providers

```
osgi> start 2

Employee Service Publisher - Started
```

Figure 4.3.1 Employee Service Publisher Start

```
osgi> start 4
Leave Allowence Service Publisher - Started
```

Figure 4.3.2 Leave Allowance publisher start

```
osgi> Start 3
Employee Service Consumer Started.
Welcome to Terrace Restaurent Service - Online Employee Services

SERVICE LIST

1. Register a New Employee.
2. Current Employee.
3. Check for Allowences.
4. Sign-off.

Enter the number of the service required :
```

Figure 4.3.3 Employee Service Subscriber start

```
osgi> stop 2
Employee Service - Stopped
```

Figure 4.3.4 Employee service Publisher stop

```
osgi> stop 3
Employee Service Consumer is going Offline..
```

Figure 4.3.5 Employe Service Subscriber Stop

```
osgi> stop 4
Leave Allowence Service - Stopped
```

Figure 4.3.6 Leave Allowance Publisher stop.

```
"Framework is launched."

id      State      Bundle
0       ACTIVE     org.eclipse.osgi_3.17.0.v20210823-1805
                   Fragments=723
1       ACTIVE     org.eclipse.equinox.simpleconfigurator_1.4.0.v20210315-2228
2       ACTIVE     EmployeeServicePublisher_1.0.0.qualifier
3       ACTIVE     EmployeeServiceSubscriber_1.0.0.qualifier
4       ACTIVE     LeaveAllowencePublisher_1.0.0.qualifier
5       ACTIVE     biz.aQute.bndlib_5.3.0.202102221516
6       ACTIVE     ch.qos.logback.classic_1.2.3.v20200428-2012
```

Figure 4.3.7 Output when all "Active"

Functional behavior and outputs (screenshots)

```
SERVICE LIST

1. Register a New Employee.
2. Current Employee.
3. Check for Allowences.
4. Sign-off.

Enter the number of the service required : 1

1. Trainee Employee
2. Permanent Employee

Select Employee Type : 2

Enter your name: Kamal
Enter your NIC: 976546786v
Enter your contact number: 0776547897
Enter your address: Colombo 4
Select job category (A, B, C, D, E):
A. Manager (Basic Salary: 100000)
B. Supervisor (Basic Salary: 80000)
C. Chef (Basic Salary: 70000)
D. Waiter (Basic Salary: 50000)
E. DeliveryRider (Basic Salary: 50000)
A
Job name: Manager
Basic salary: 100000.00
Do you want to register? (Y/N): Y
Registration completed successfully.
Warmly welcome to the Terrace family!


Employee Service Consumer Started.
Welcome to Terrace Restaurent Service - Online Employee Services
```

Figure 4.4.1 Output of Employee Registration

```
1. Register a New Employee.
2. Current Employee.
3. Check for Allowences.
4. Sign-off.

Enter the number of the service required : 2

1. Trainee Employee
2. Permanent Employee

Select Employee Type : 2

Enter your name             : Sunil
Enter your NIC              : 991278097v
Enter your contact number   : 0771234567
Enter your address          : Pettah

Select job category (A, B, C, D, E):
A. Manager (Basic Salary: 100000)
B. Supervisor (Basic Salary: 80000)
C. Chef (Basic Salary: 70000)
D. Waiter (Basic Salary: 50000)
E. DeliveryRider (Basic Salary: 50000)
A

Select an option:
1. Calculate salary
2. View employee data


1

Enter OT hours: 5

Your Basic Salary      : 100000.0
Your OT Balance        : 5000.0
Your Total Salary      : 105000.0
```

Figure 4.4.2 Output of Calculate salary

```
SERVICE LIST

1. Register a New Employee.
2. Current Employee.
3. Check for Allowences.
4. Sign-off.

Enter the number of the service required : 3
Enter your name: Sunimal
Enter No. of leave obtained for the month: 4

Congratulations Sunimal. You are eligible to recive a bonous of 3000.0
```

Figure 4.4.3 Output of Check Allowance

```
1. Register a New Employee.
2. Current Employee.
3. Check for Allowences.
4. Sign-off.

Enter the number of the service required : 2

1. Trainee Employee
2. Permanent Employee

Select Employee Type : 2

Enter your name               : Nimal
Enter your NIC                : 901278098v
Enter your contact number     : 0776789086
Enter your address            : Kadawatha

Select job category (A, B, C, D, E):
A. Manager (Basic Salary: 100000)
B. Supervisor (Basic Salary: 80000)
C. Chef (Basic Salary: 70000)
D. Waiter (Basic Salary: 50000)
E. DeliveryRider (Basic Salary: 50000)
B

Select an option:
1. Calculate salary
2. View employee data

2
**************Employee Details****************

        Name            : Nimal
        NIC             : 901278098v
        Contact Number  : 0776789086
        Address         : Kadawatha
        Basic Salary    : 80000.0
```

Figure 4.4.4 Output of View Employee

```
SERVICE LIST

1. Register a New Employee.
2. Current Employee.
3. Check for Allowences.
4. Sign-off.

Enter the number of the service required : 4
Good Byee..
```

Figure 4.4.5 Output of Sign-off