Sri Lanka Institute of Information Technology

B.Sc. (Hons) in Information Technology

IT4020 – Modern Topics in IT

Assignment 01

Consumer/Producer Implementation with OSGi Framework

Group ID: MTIT_097

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Introduction

"**Dream Destinations**" is the travel guide company. This travel guide company is a business that provides services to help travelers plan and navigate their trips. These services can include providing information on travel destinations, transportation, activities, and cultural experiences. Travel guide companies may also offer customized itineraries and tour packages that cater to specific interests and budgets.

The goal of this travel guide company is to make travel planning easier and more efficient for travelers, so they can have a more enjoyable and stress-free experience. They may employ experienced travel advisors and local experts who have extensive knowledge of different destinations and can provide personalized recommendations based on the traveler's preferences.
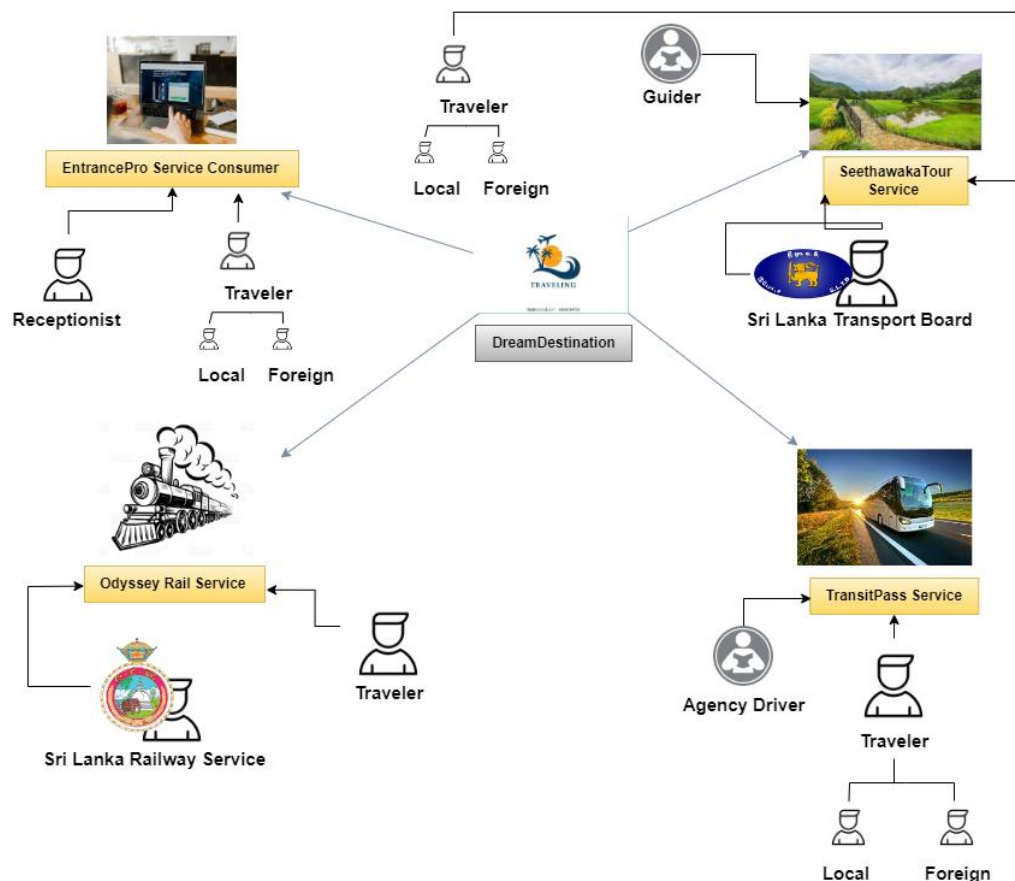
There are 4 consumers, and 4 producers in this situation.

- Entrance Pro Service is the Producer/publisher and Seethawaka travels is the consumer.
- Transits pass service is the producer/publisher and Transits pass is the consumer.
- Odyssey Rail Service is the producer and Odyssey Rail is the consumer.
- Seethwaka tours service is the producer and Seethawaka Tour is the consumer.

1) **EntrancePro Service** - Travelers can choose the desired sort of admission cost after the required entry fee for the tour is computed once they join the agency (domestic, foreign, child, adult). Variations in the entrance cost follow.

2) **Transit Pass Service** - Passengers are given the option of using an air-conditioned or non-air-conditioned bus to get to the train's starting point after calculating their entry ticket (Maradana station). The cost will vary depending on whether air conditioning is considered.

3) **OdysseyRail Service** - After boarding the Odyssey train, the cost is determined by the number of seats and cabin class (First Class, Second Class or Third Class).

4) **Seethawaka Tour Service** – By imposing a price for entering the park and offer a discount at the conclusion depending on the tourists (foreigners, locals). To transport these travelers, we are focusing on SLTB service.

EntrancePro Service is the producer/publisher, and the consumer/subscriber is Receptionist. (IT20213930)
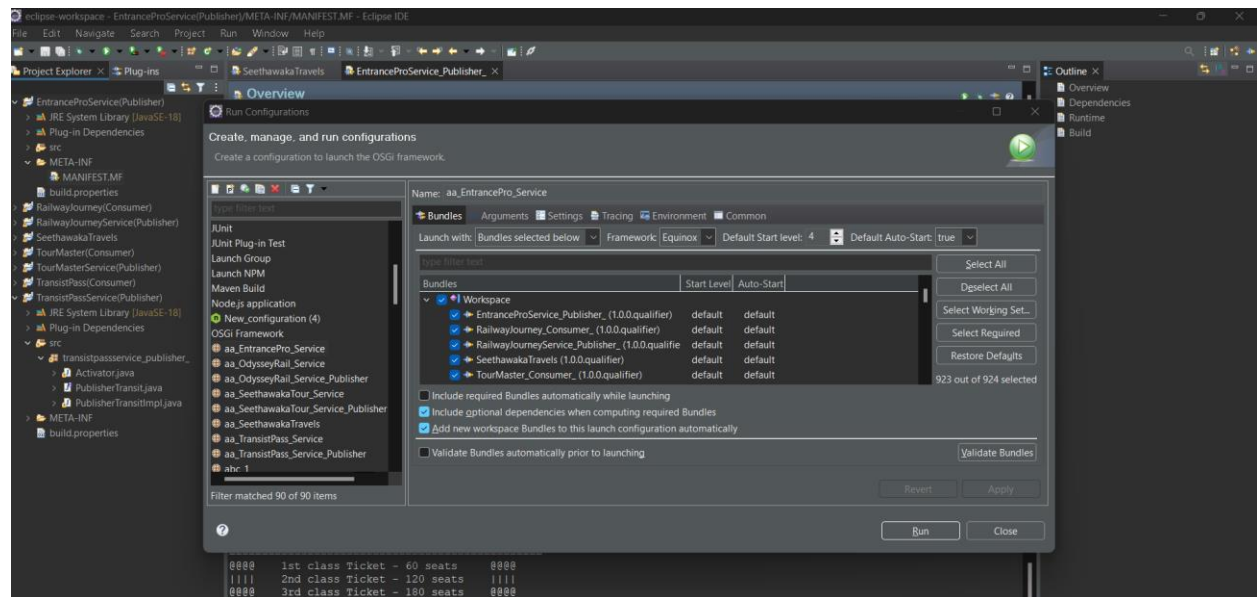
Manifest Implementation
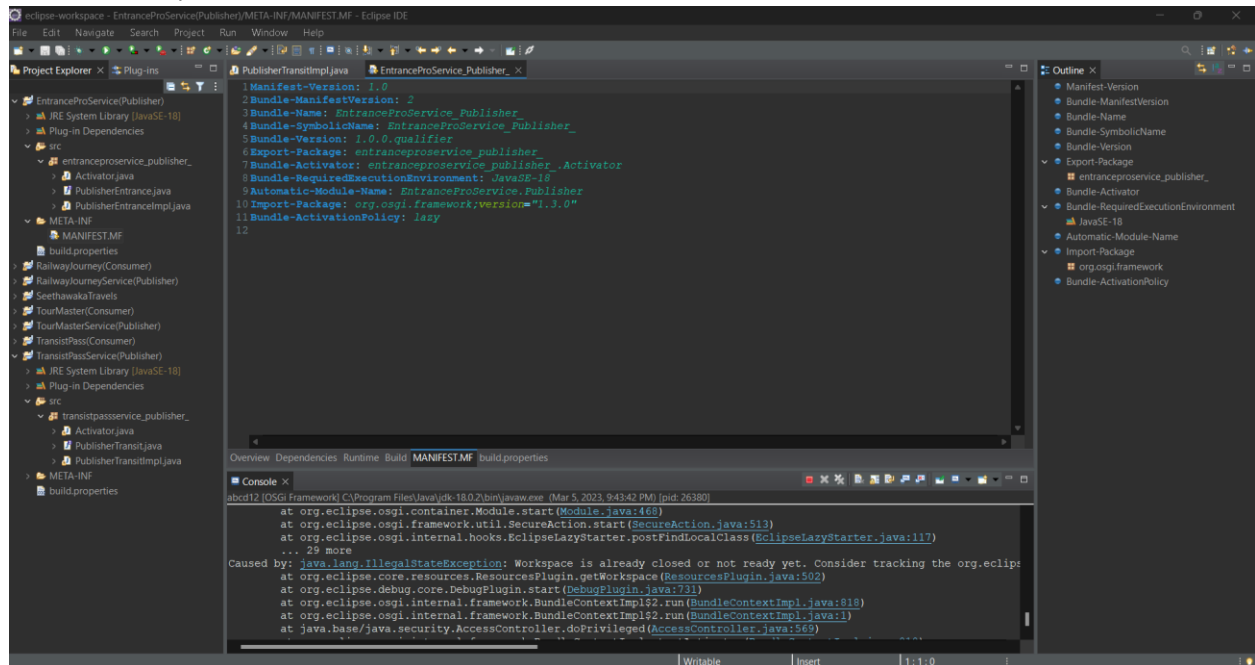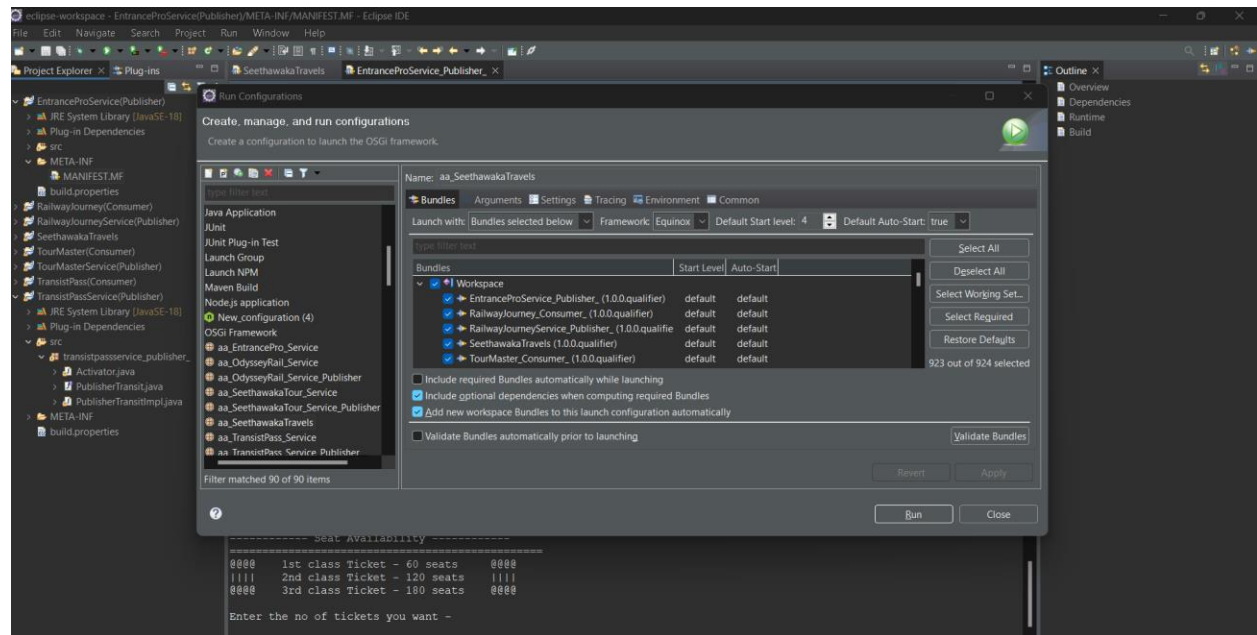

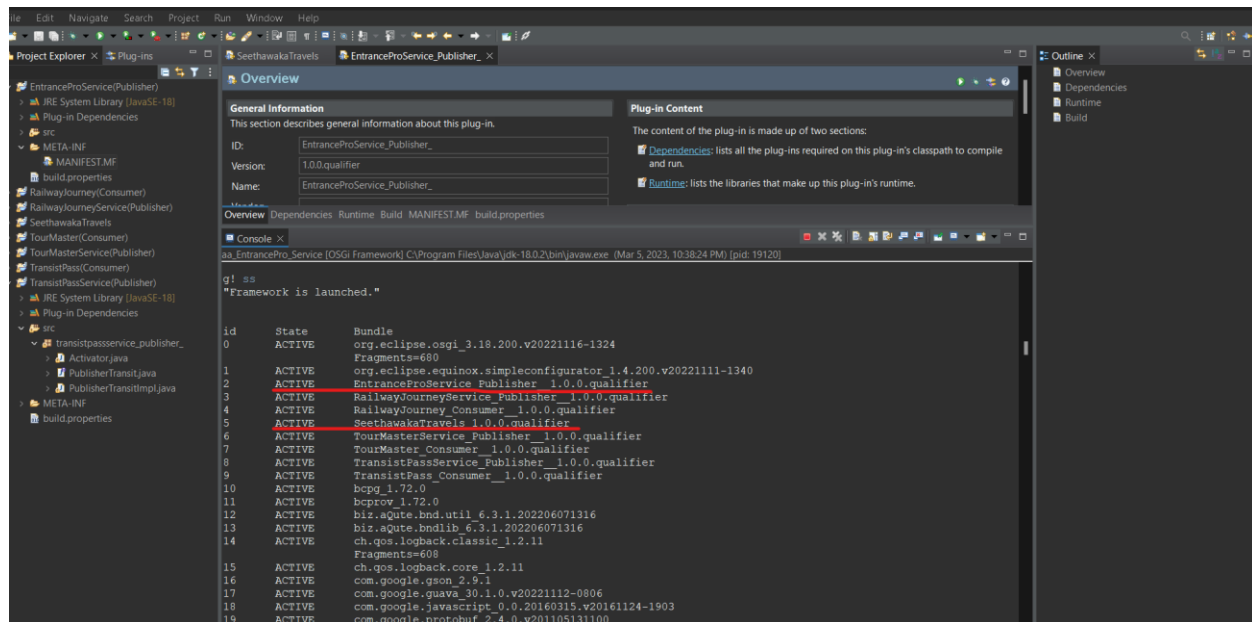**EntrancePro Service (Publisher)**
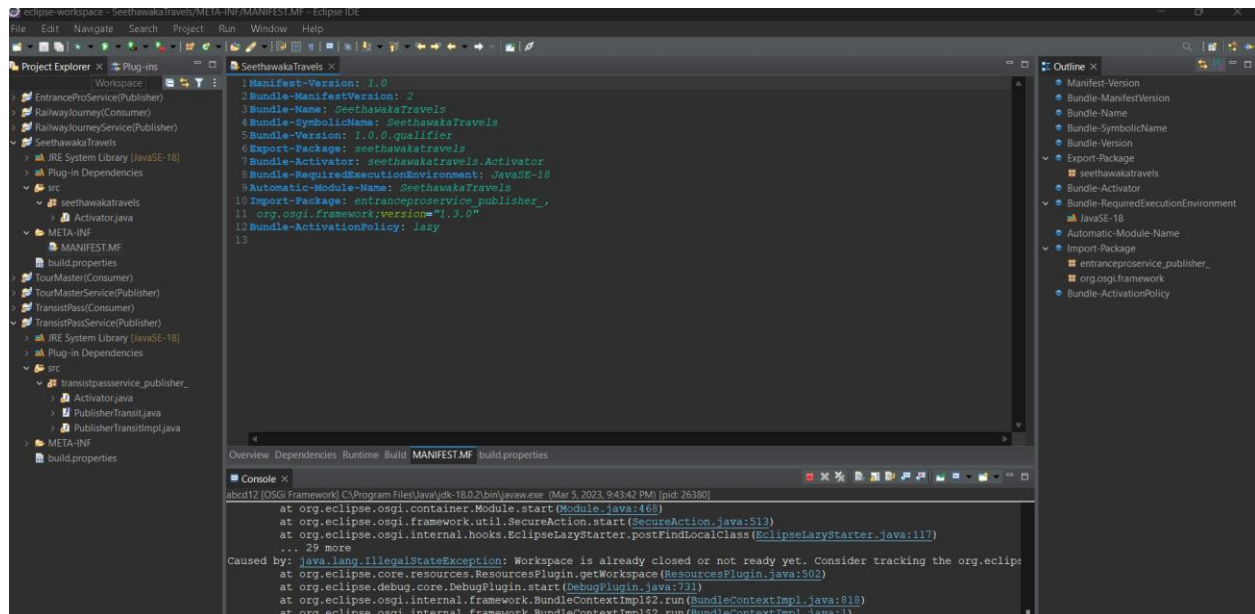
Receptionist (Subscriber)

Bundles

EntrancePro Service (Publisher)

Receptionist (Subscriber)

Behavior & Outputs

```
The train reaches Homagama at 08.27 am
 --- WELCOME TO SeethawakaTravels Agency ---
------------- Entrance Charges -------------
@@@@    Entrance ticket for children (Below 12 years old) - Local (1)    -       RS.250/=        @@@@
||||    Entrance ticket for elders (Above 12 years old) - Local (2)      -       Rs.350/=        ||||
@@@@    Entrance ticket for children (Below 12 years old) - Foreign (3) -        Rs.1000/=       @@@@
||||    Entrance ticket for elders (Above 12 years old) - Foreign (4)    -       Rs.1500/=       ||||

Enter no of seat you want :
5
Enter the type of ticket :
1
Your have selected the Local Child Ticket
Ticket Price Rs. 250/=
Enter the type of ticket :
1
Your have selected the Local Child Ticket
Ticket Price Rs. 250/=
Enter the type of ticket :
2
Your have selected the Local Elder Ticket
Ticket Price Rs. 350/=
Enter the type of ticket :
2
Your have selected the Local Elder Ticket
Ticket Price Rs. 350/=
Enter the type of ticket :
2
Your have selected the Local Elder Ticket
Ticket Price Rs. 350/=
=========================================================
Your amount is Rs. 1550
You have ordered more than 4 tickets. Therfore you received 10% discount.
Therefore your total amount is Rs. 1395
TourMaster Server Start
```
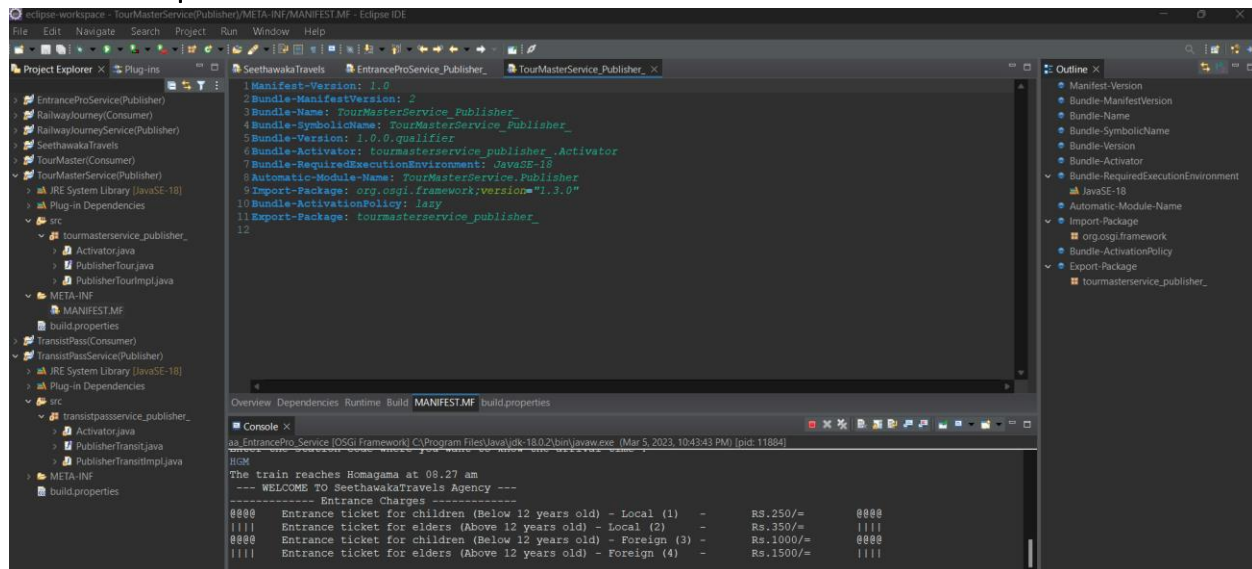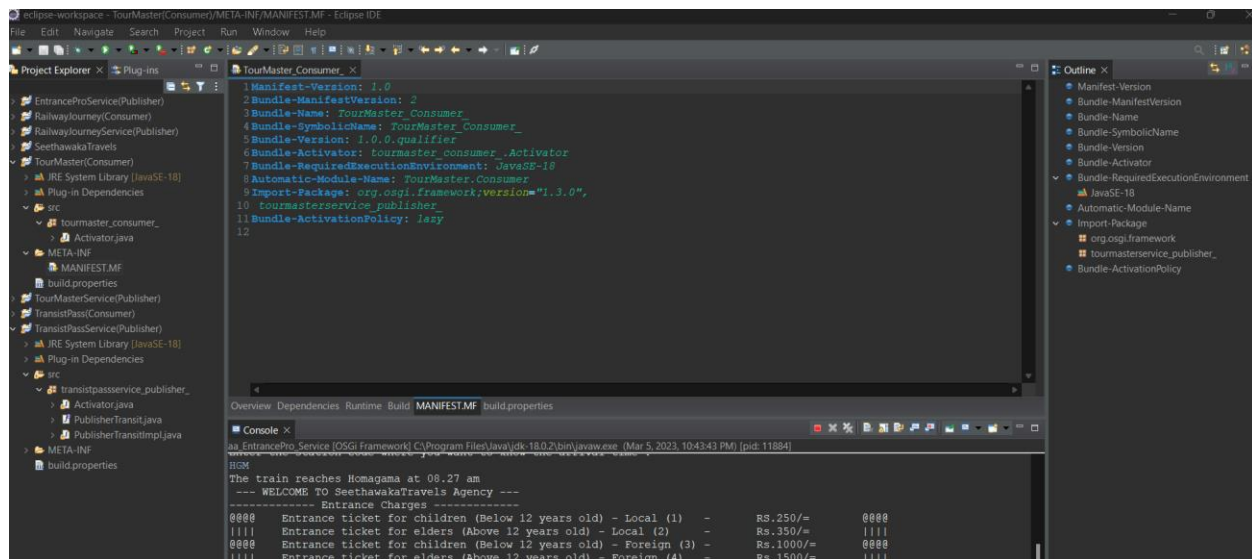
SeethawakaTour Service is the producer/publisher, and the consumer/subscriber is Guiider. (IT20147532)
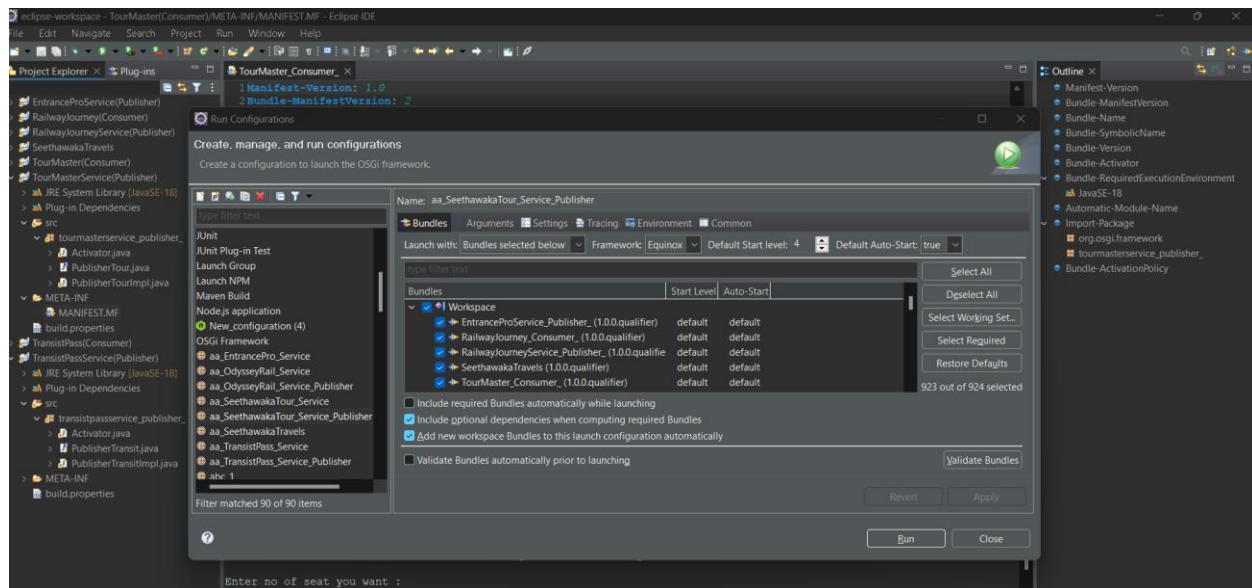
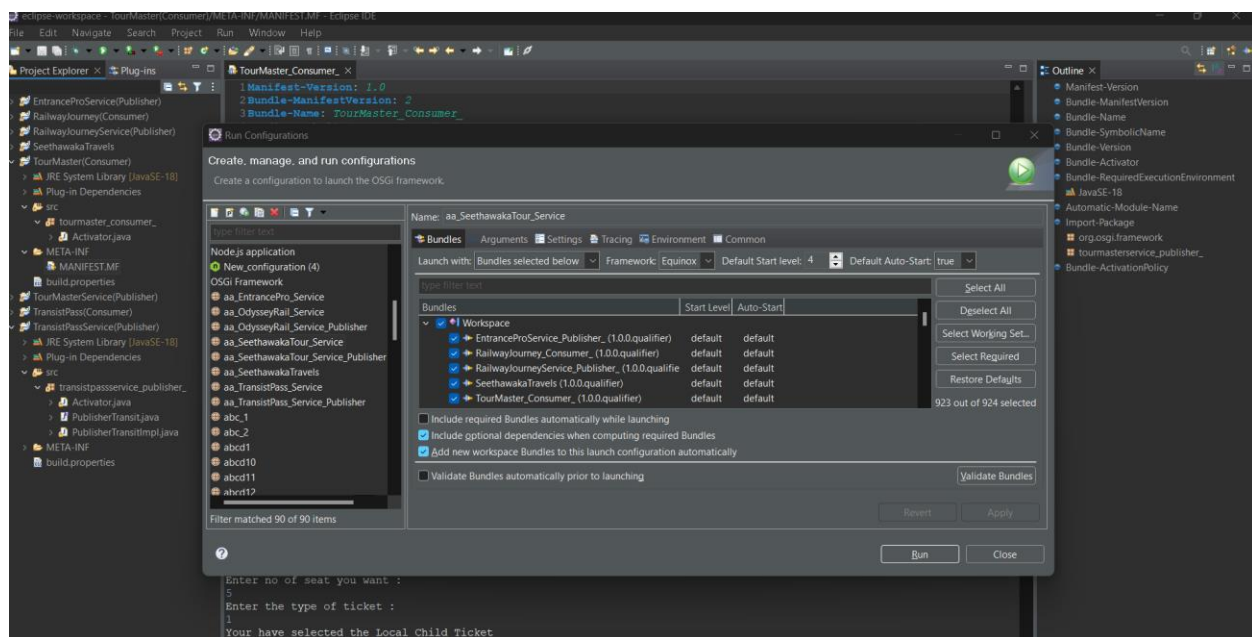## Manifest Implementation

TourMaster Service (Publisher)

Guider (Subscriber)

Bundles

TourMaster Service (Publisher)

Guider (Subscriber)
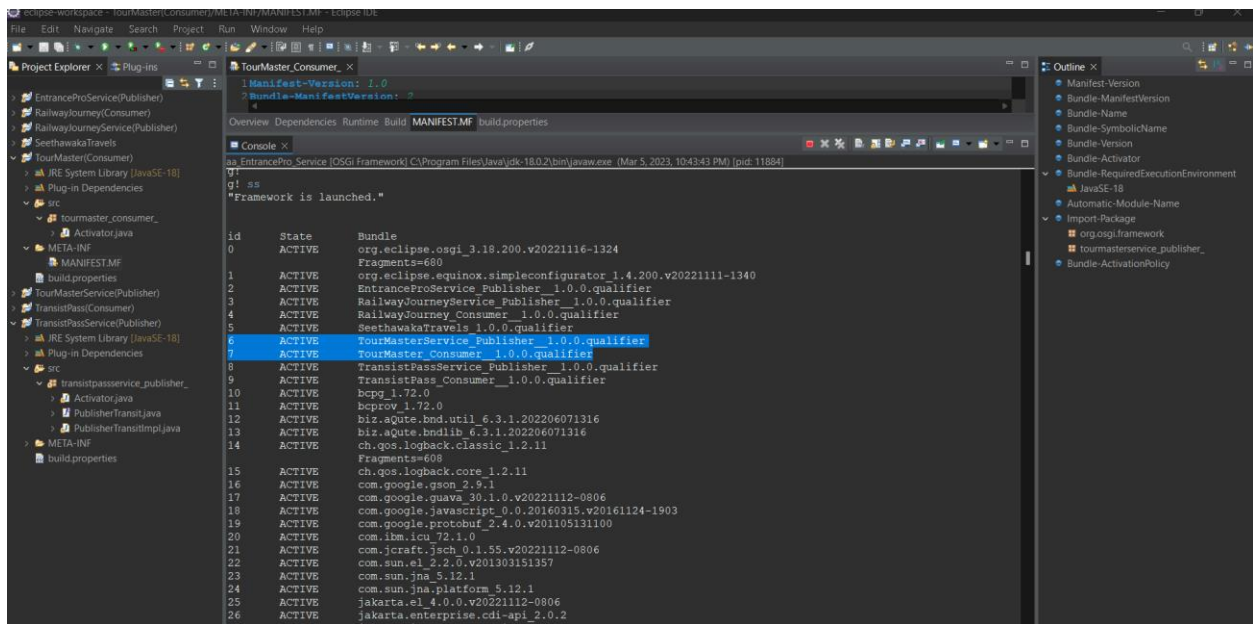
Behavior & Outputs

```
g!
g! start 6
TourMaster Server Start
g!
g! start 7
 --- WELCOME TO SeethawakaTravels Beautiful Tour ---
```

```
 --- WELCOME TO SeethawakaTravels Beautiful Tour ---
-- Tour Charges --
@@@@    Entrance ticket for children (Below 12 years old) - Local (1)   - Rs.100/=      @@@@
||||    Entrance ticket for elders (Above 12 years old) - Local (2)     - Rs.150/=      ||||
@@@@    Entrance ticket for children (Below 12 years old) - Foreign (3) - Rs.1000/=     @@@@
||||    Entrance ticket for elders (Above 12 years old) - Foreign (4)   - Rs.1500/=     ||||

Enter no of tickets you want :
3
Enter the type of ticket :
3
Your have selected the Foreign Child Ticket
Ticket Price Rs. 1000/=
Enter the type of ticket :
3
Your have selected the Foreign Child Ticket
Ticket Price Rs. 1000/=
Enter the type of ticket :
4
Your have selected the Foreign Elder Ticket
Ticket Price Rs. 1500/=
========================================================
== Your total amount is = 3500
```

OdysseyRail Service is the producer/publisher, and the consumer/subscriber is Traveler. (IT20209070)

Manifest Implementation
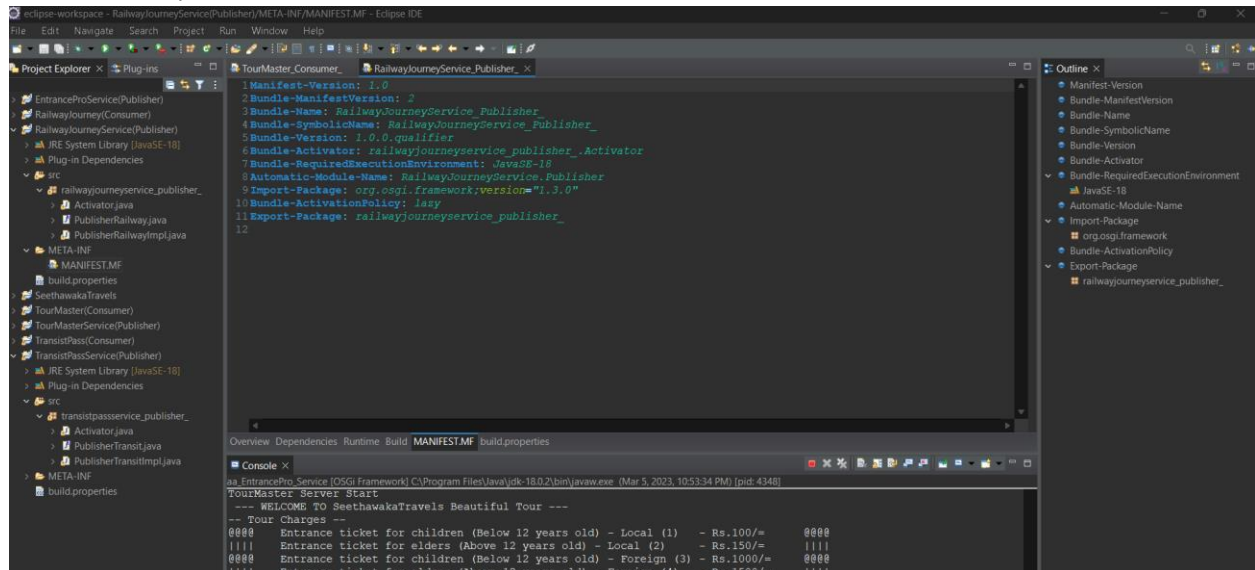
OdessyRail Service (Publisher)
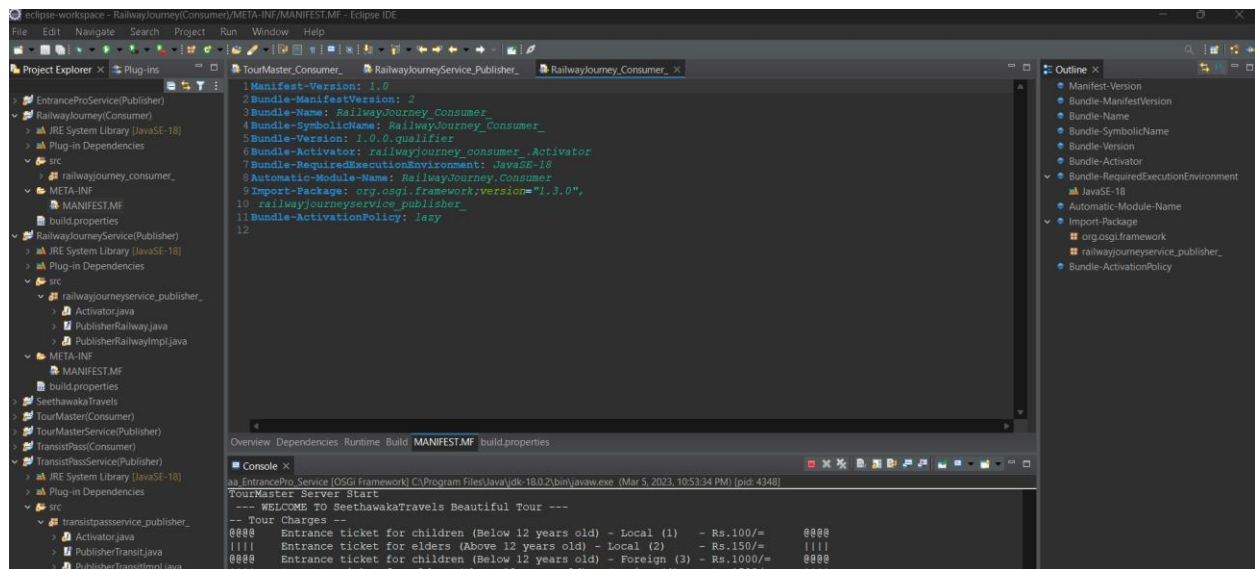
Traveler (Subscriber)

Bundles

OdessyRail Service (Publisher)

Traveler (Subscriber)

```
g! ss
"Framework is launched."


id      State       Bundle
0       ACTIVE      org.eclipse.osgi_3.18.200.v20221116-1324
                    Fragments=680
1       ACTIVE      org.eclipse.equinox.simpleconfigurator_1.4.200.v20221111-1340
2       ACTIVE      EntranceProService_Publisher__1.0.0.qualifier
3       ACTIVE      RailwayJourneyService_Publisher__1.0.0.qualifier
4       ACTIVE      RailwayJourney_Consumer__1.0.0.qualifier
5       ACTIVE      SeethawakaTravels_1.0.0.qualifier
6       ACTIVE      TourMasterService_Publisher__1.0.0.qualifier
7       ACTIVE      TourMaster_Consumer__1.0.0.qualifier
8       ACTIVE      TransistPassService_Publisher__1.0.0.qualifier
9       ACTIVE      TransistPass_Consumer__1.0.0.qualifier
10      ACTIVE      bcpg_1.72.0
11      ACTIVE      bcprov_1.72.0
12      ACTIVE      biz.aQute.bnd.util_6.3.1.202206071316
13      ACTIVE      biz.aQute.bndlib_6.3.1.202206071316
14      ACTIVE      ch.qos.logback.classic_1.2.11
                    Fragments=608
15      ACTIVE      ch.qos.logback.core_1.2.11
16      ACTIVE      com.google.gson_2.9.1
17      ACTIVE      com.google.guava_30.1.0.v20221112-0806
18      ACTIVE      com.google.javascript_0.0.20160315.v20161124-1903
19      ACTIVE      com.google.protobuf_2.4.0.v201105131100
20      ACTIVE      com.ibm.icu_72.1.0
21      ACTIVE      com.jcraft.jsch_0.1.55.v20221112-0806
22      ACTIVE      com.sun.el_2.2.0.v201303151357
23      ACTIVE      com.sun.jna_5.12.1
24      ACTIVE      com.sun.jna.platform_5.12.1
25      ACTIVE      jakarta.el_4.0.0.v20221112-0806
26      ACTIVE      jakarta.enterprise.cdi-api_2.0.2
27      ACTIVE      jakarta.interceptor-api_1.2.5
28      ACTIVE      jakarta.servlet_5.0.0.v20221112-0806
```

Behavior & Outputs

```
g! stop 3
Stop RailwayJoureny Server

g! stop 4
service Stop

g!
g! start 3
RailwayJourney Server Start
g!
g! start 4
 --- WELCOME TO SeethawakaTravels Train Joureny ---
-- Train Journey Charges --
@@@@    1st Class (Air Conditioning) Ticket Price - Rs.500 (1)   @@@@
||||    2nd Class Ticket Price - Rs.300 (2)      ||||
@@@@    3rd Class Ticket Price - Rs.200 (3)      @@@@
============================================
----------- Seat Availability ------------
============================================
@@@@    1st class Ticket - 60 seats      @@@@
||||    2nd class Ticket - 120 seats     ||||
```
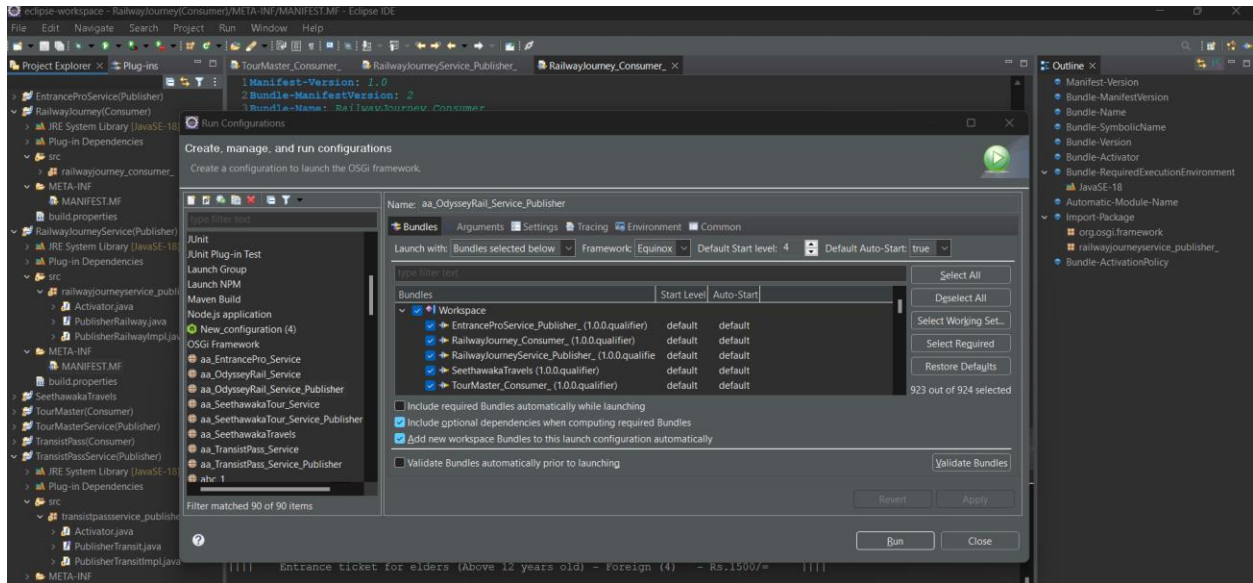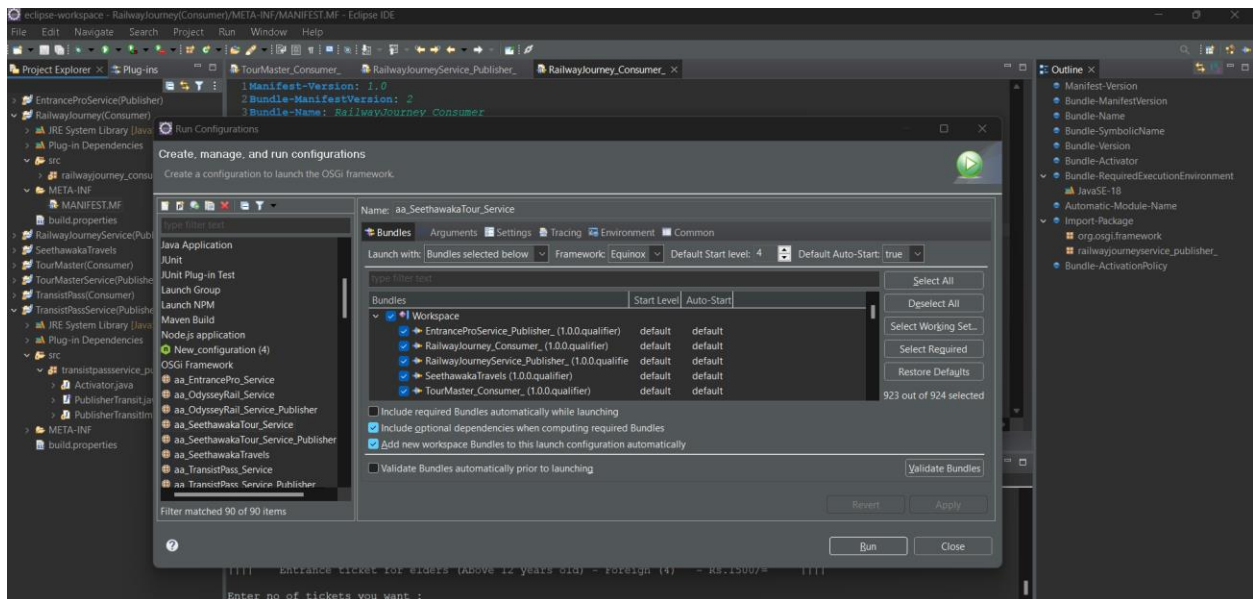
```
RailwayJourney Server Start
 --- WELCOME TO SeethawakaTravels Train Joureny ---
-- Train Journey Charges --
@@@@    1st Class (Air Conditioning) Ticket Price - Rs.500 (1)  @@@@
||||    2nd Class Ticket Price - Rs.300 (2)     ||||
@@@@    3rd Class Ticket Price - Rs.200 (3)     @@@@
=============================================
------------ Seat Availability ------------
=============================================
@@@@    1st class Ticket - 60 seats     @@@@
||||    2nd class Ticket - 120 seats    ||||
@@@@    3rd class Ticket - 180 seats    @@@@

Enter the no of tickets you want -
3
Enter the type of the ticket you want -
1
1st Class Ticket - Rs.500/=
Enter the type of the ticket you want -
2
2nd Class Ticket - Rs.300/=
Enter the type of the ticket you want -
3
3rd Class Ticket) - Rs.200/=
The total amount is 1000
# Colombo to Awissawella
# Station Name            Code
=========================================
# ColomboFort           FOT
# Maradana              MDA
# Baseline Road         BSR
# Narahenpita           NRH
# Nugegoda              NUG
# Maharagama            MHR
# Kottawa               KOT
# Makumbura             MAK
# Homagama              HGM
# Meegoda               MEG
# Padukka               PDK
# Waga                  WAG
# Kosgama               KOS
# Awissawella           AWS

Enter the station code where you want to know the arrival time :

WAG
The train reaches Waga at 09.07 am
```
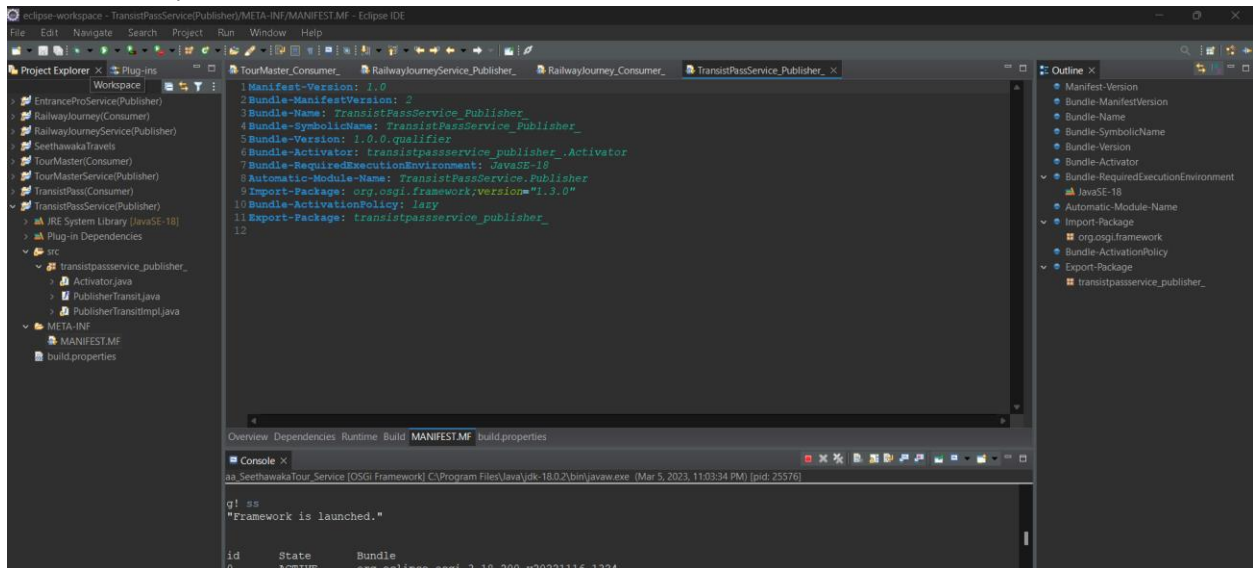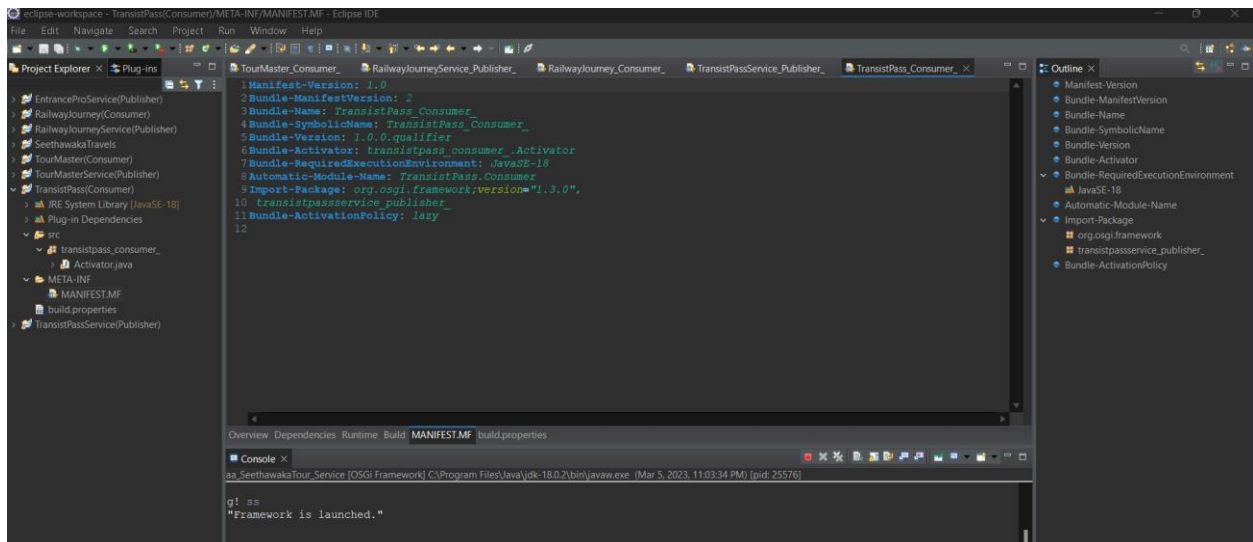
TransitPass Service is the producer/publisher, and the consumer/subscriber is Traveler. (IT20137632)
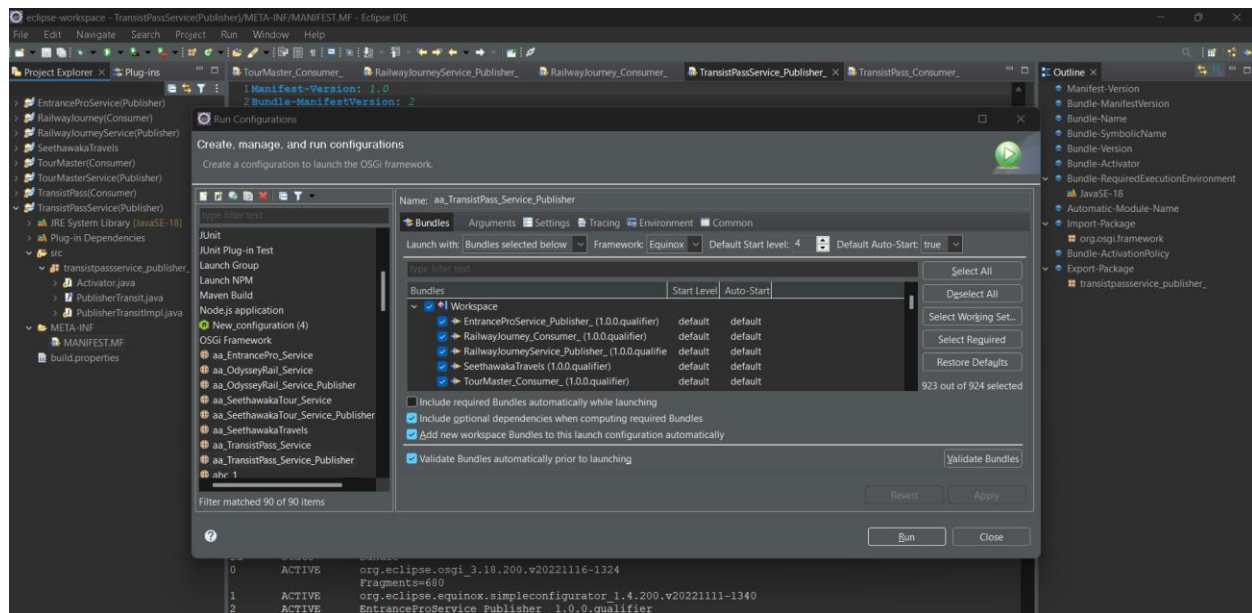
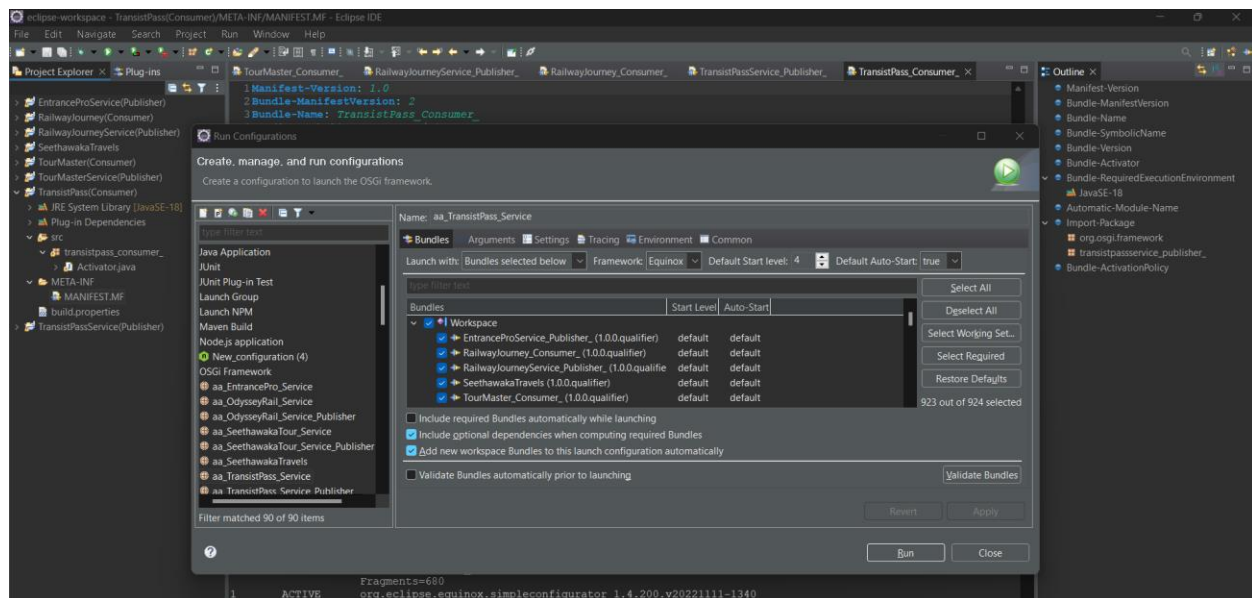Manifest Implementation

TransitPass Service (Publisher)

Driver (Subscriber)

Bundles

TransitPass Service (Publisher)

Driver (Subscriber)

```
g! ss
"Framework is launched."


id      State       Bundle
0       ACTIVE      org.eclipse.osgi_3.18.200.v20221116-1324
                    Fragments=680
1       ACTIVE      org.eclipse.equinox.simpleconfigurator_1.4.200.v20221111-1340
2       ACTIVE      EntranceProService_Publisher__1.0.0.qualifier
3       ACTIVE      RailwayJourneyService_Publisher__1.0.0.qualifier
4       ACTIVE      RailwayJourney_Consumer__1.0.0.qualifier
5       ACTIVE      SeethawakaTravels_1.0.0.qualifier
6       ACTIVE      TourMasterService_Publisher__1.0.0.qualifier
7       ACTIVE      TourMaster_Consumer__1.0.0.qualifier
8       ACTIVE      TransistPassService_Publisher__1.0.0.qualifier
9       ACTIVE      TransistPass_Consumer__1.0.0.qualifier
10      ACTIVE      bcpg_1.72.0
11      ACTIVE      bcprov_1.72.0
12      ACTIVE      biz.aQute.bnd.util_6.3.1.202206071316
13      ACTIVE      biz.aQute.bndlib_6.3.1.202206071316
14      ACTIVE      ch.qos.logback.classic_1.2.11
                    Fragments=608
15      ACTIVE      ch.qos.logback.core_1.2.11
16      ACTIVE      com.google.gson_2.9.1
17      ACTIVE      com.google.guava_30.1.0.v20221112-0806
18      ACTIVE      com.google.javascript_0.0.20160315.v20161124-1903
19      ACTIVE      com.google.protobuf_2.4.0.v201105131100
20      ACTIVE      com.ibm.icu_72.1.0
21      ACTIVE      com.jcraft.jsch_0.1.55.v20221112-0806
22      ACTIVE      com.sun.el_2.2.0.v201303151357
23      ACTIVE      com.sun.jna_5.12.1
24      ACTIVE      com.sun.jna.platform_5.12.1
25      ACTIVE      jakarta.el_4.0.0.v20221112-0806
26      ACTIVE      jakarta.enterprise.cdi-api_2.0.2
27      ACTIVE      jakarta.interceptor-api_1.2.5
28      ACTIVE      jakarta.servlet_5.0.0.v20221112-0806
29      ACTIVE      jakarta.servlet-api_4.0.0
```

Behavior & Outputs

```
g! stop 8
Stop TransistPass Server

g!
g! stop 9
service Stop

g!
g! start 8
TransistPass Server Start
g!
g! start 9
 --- WELCOME TO SeethawakaTravels Bus Service ---
-- Transist Charges --
@@@@    A/C Bus ticket for children (Below 12 years old)      - Local (1)      - Rs.200        @@@@
||||    A/C Bus ticket for elders (Above 12 years old) - Local (2)             - Rs.600        ||||
@@@@    A/C Bus ticket for children (Below 12 years old) - Foreign (3)         - Rs.1500       @@@@
||||    A/C Bus ticket for elders (Above 12 years old) - Foreign (4)           - Rs.2000       ||||
@@@@    Non A/C Bus ticket for Children (Below 12 Years old) - Local (5)        - Rs.250        @@@@
```

```
 --- WELCOME TO SeethawakaTravels Bus Service ---
-- Transist Charges --
@@@@    A/C Bus ticket for children (Below 12 years old)      - Local (1)    - Rs.200      @@@@
||||    A/C Bus ticket for elders (Above 12 years old) - Local (2)           - Rs.600      ||||
@@@@    A/C Bus ticket for children (Below 12 years old) - Foreign (3)        - Rs.1500     @@@@
||||    A/C Bus ticket for elders (Above 12 years old) - Foreign (4)          - Rs.2000     ||||
@@@@    Non A/C Bus ticket for Children (Below 12 Years old) - Local (5)       - Rs.250      @@@@
||||    Non A/C Bus ticket for elders (Above 12 Years old) - Local(6)          - Rs.150      ||||

Enter the no of tickets you want :
3
Enter the type of the ticket you want..
4
A/C Bus ticket for foreign elders (Above 12 years old) - Rs.2000/=
Enter the type of the ticket you want..
4
A/C Bus ticket for foreign elders (Above 12 years old) - Rs.2000/=
Enter the type of the ticket you want..
3
A/C Bus ticket for foreign children (Below 12 years old) - Rs.1500/=
Total amount : 5500
```