



Sri Lanka Institute of Information Technology Sri Lanka

B.Sc. (Hons) in Information Technology

MODERN TOPICS IN INFORMATION TECHNOLOGY

(IT4020)

Assignment Report 2022

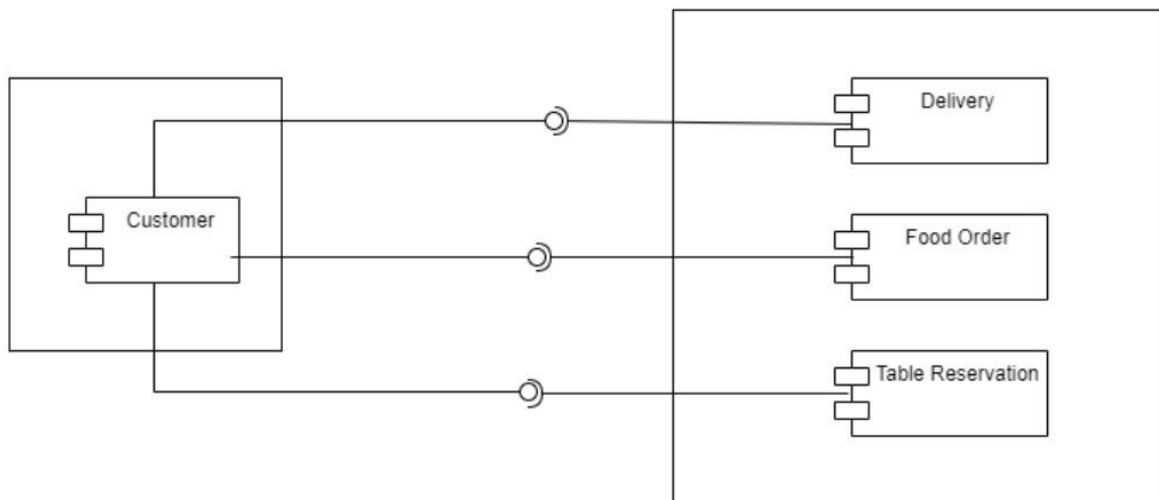
Assignment 01

| Name | Student ID |
|------------|--------------------------|
| IT19093192 | Amarasekara D M D |
| IT19164540 | Jagoda P.T |
| IT19235516 | Vimukthi S.M.Y.R |
| IT19243290 | Wickramasinghe T.W.M.K.L |

INTRODUCTION

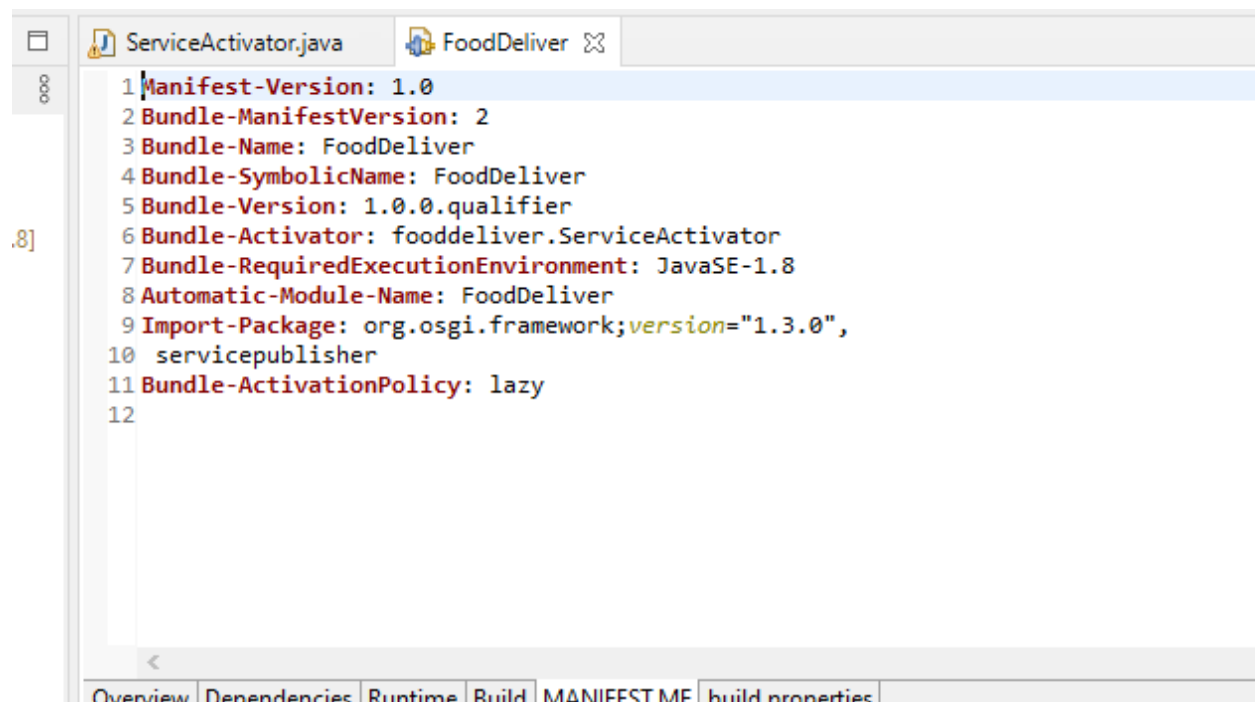
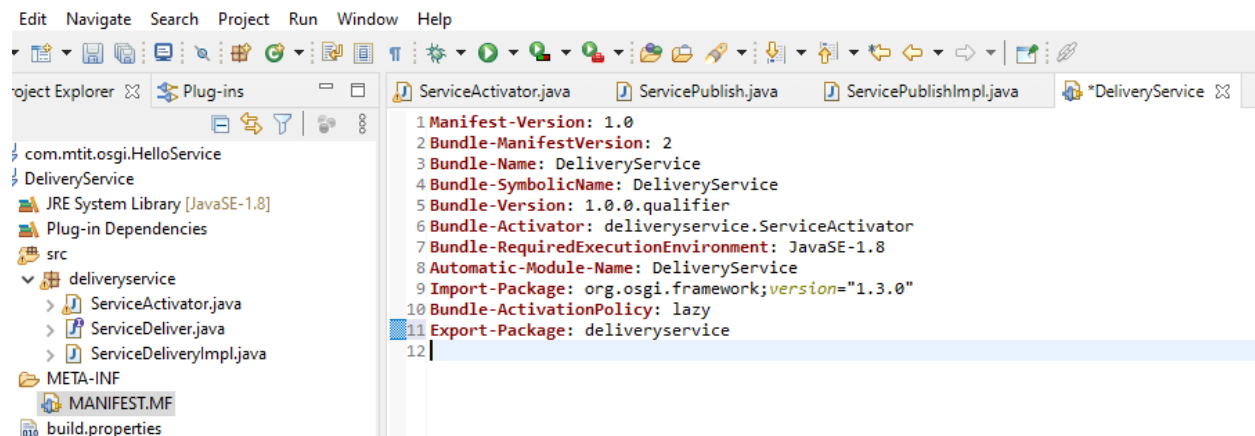
We have done a Food Restaurant System according to OSGi framework. Delivery Service, Food Ordering Service, Customer and Table Reservation service are the producers/services of this system. The consumer/subscriber of the system is Customer.

SYSTEM DIAGRAM



MANIFEST IMPLEMENTATION

Delivery Service (Producer/Service)



Food Ordering Service (Producer/Service)

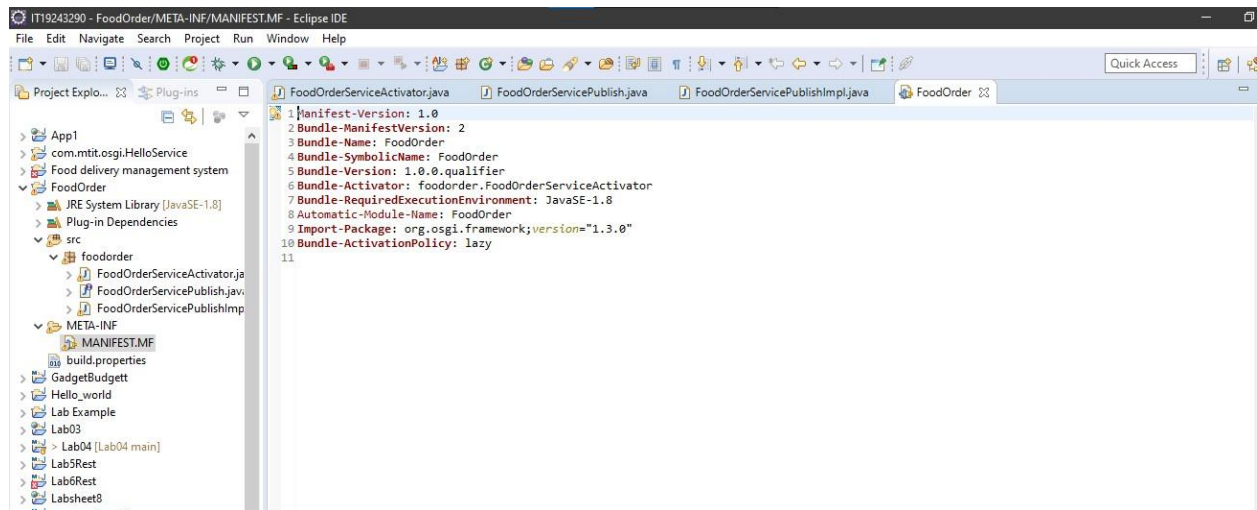
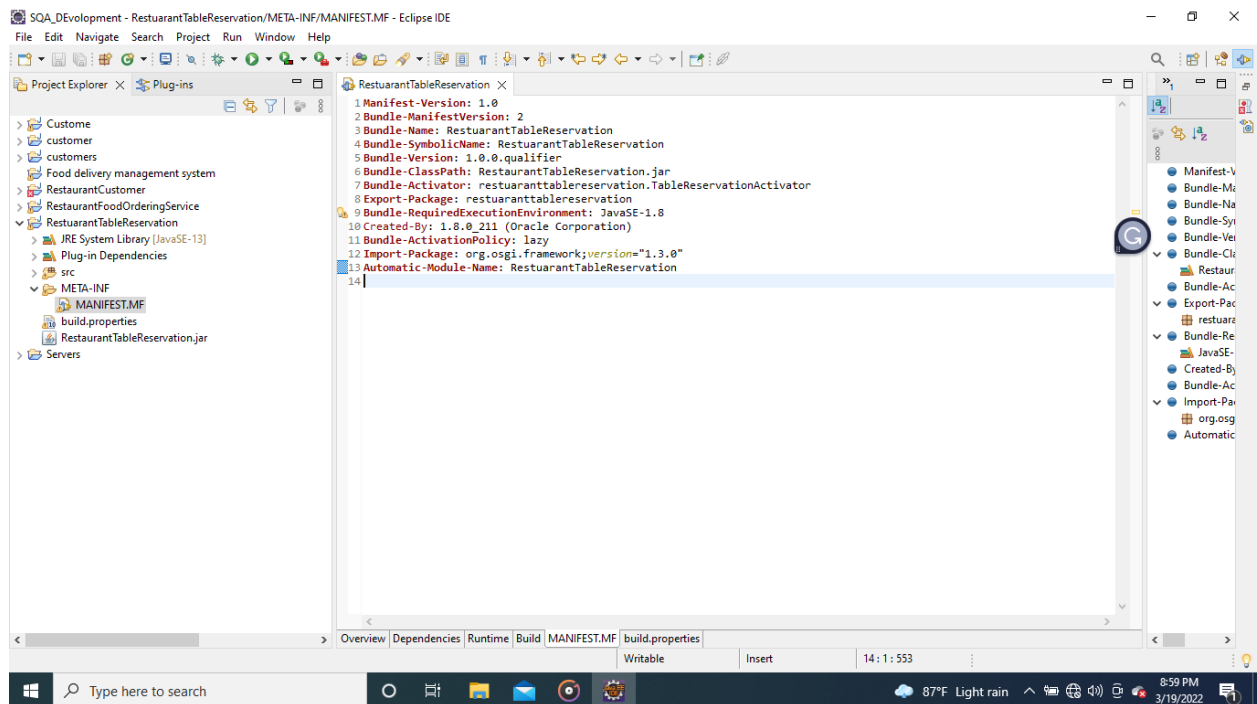
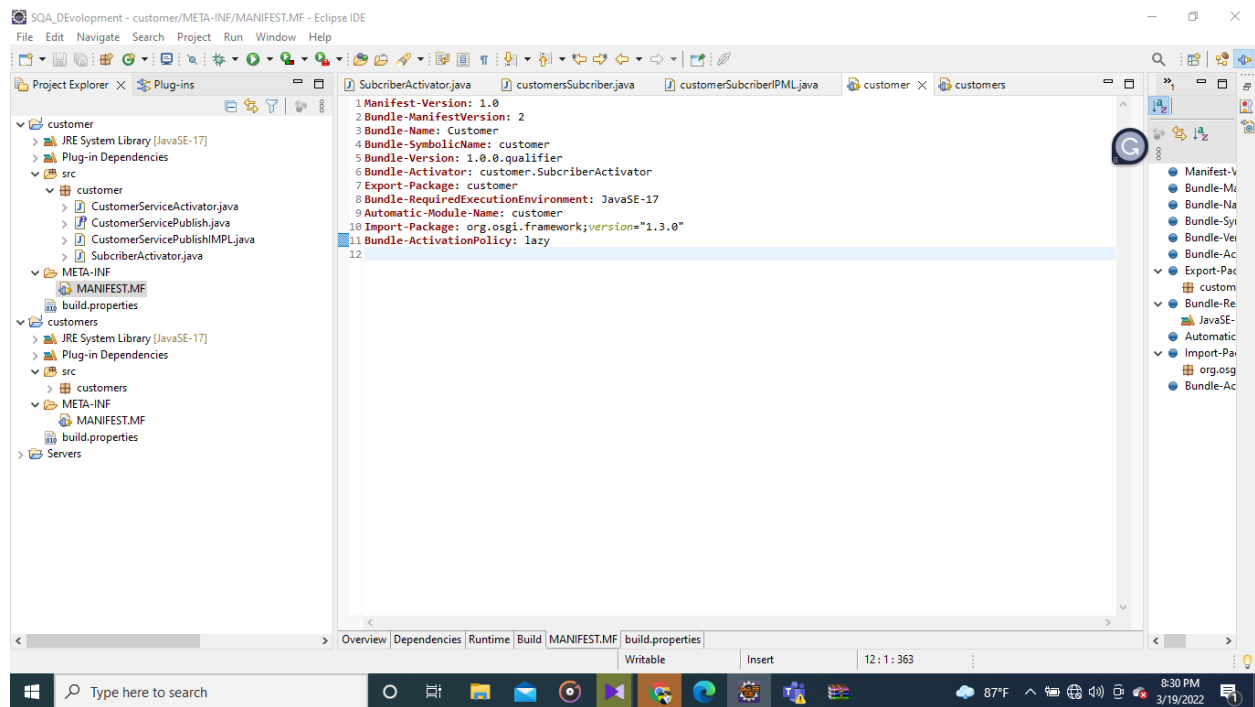


Table Reservation (Producer/Service)

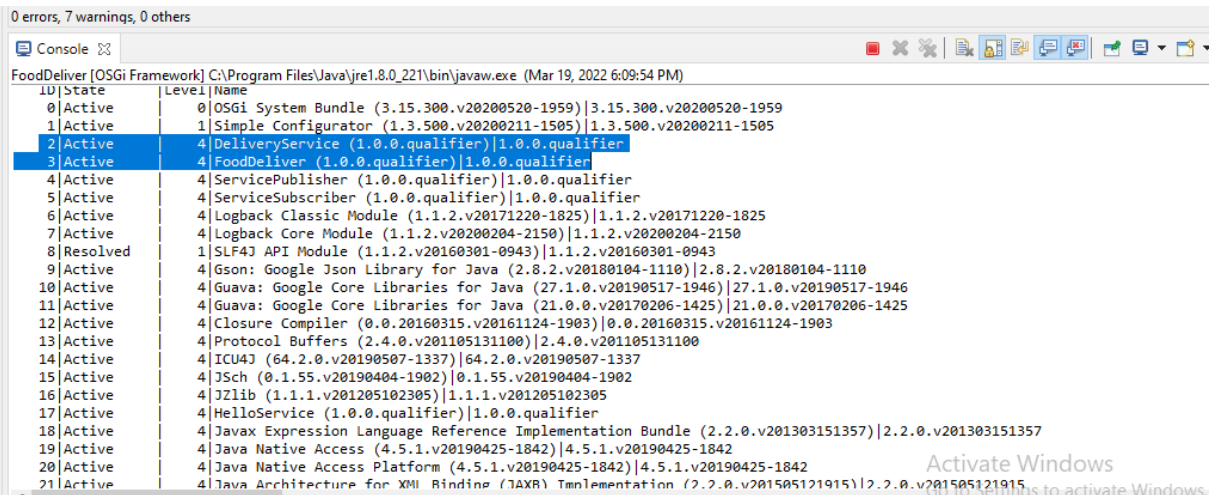
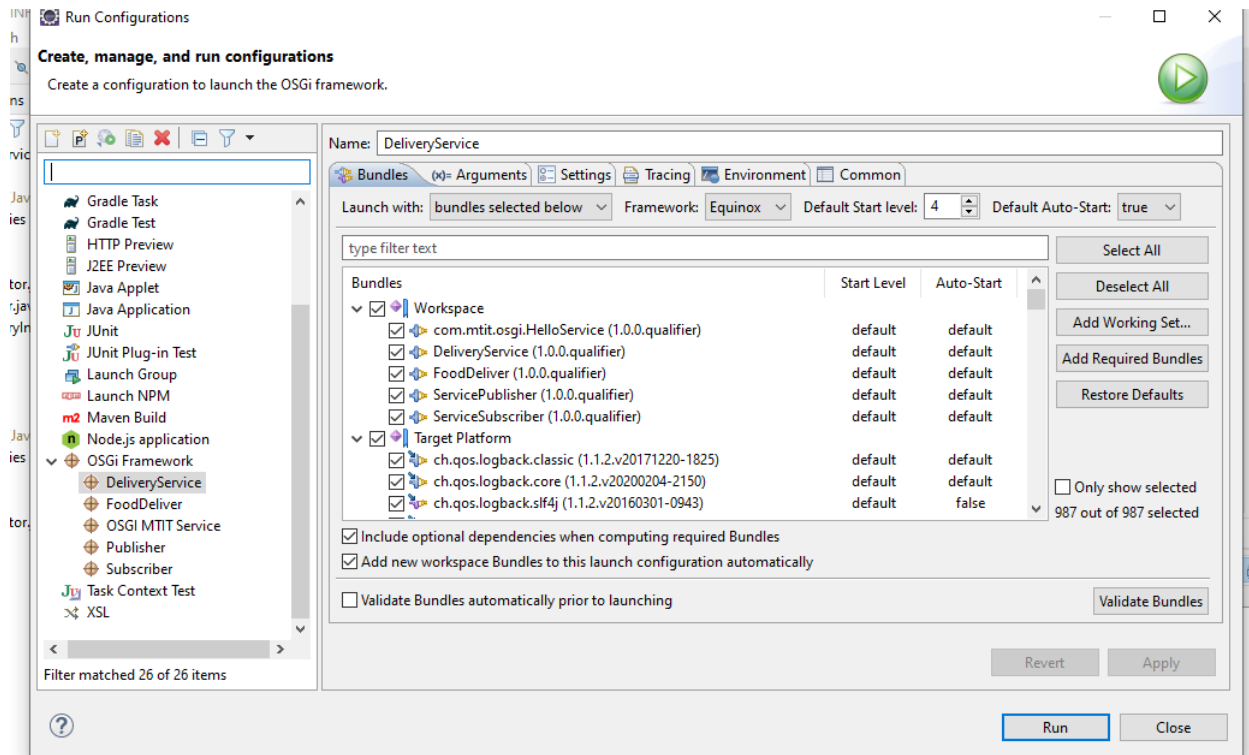


Customer (Consumer/Subscriber)



BUNDLES

Delivery Service



Food Ordering Service

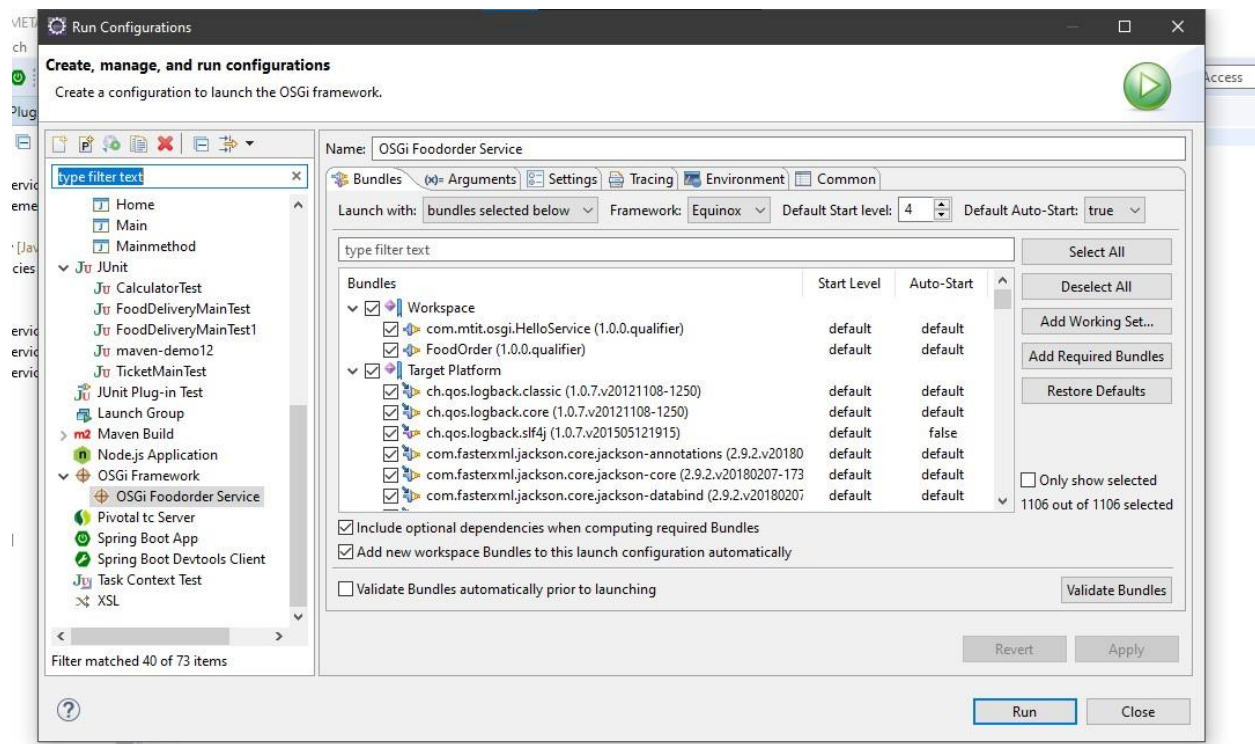
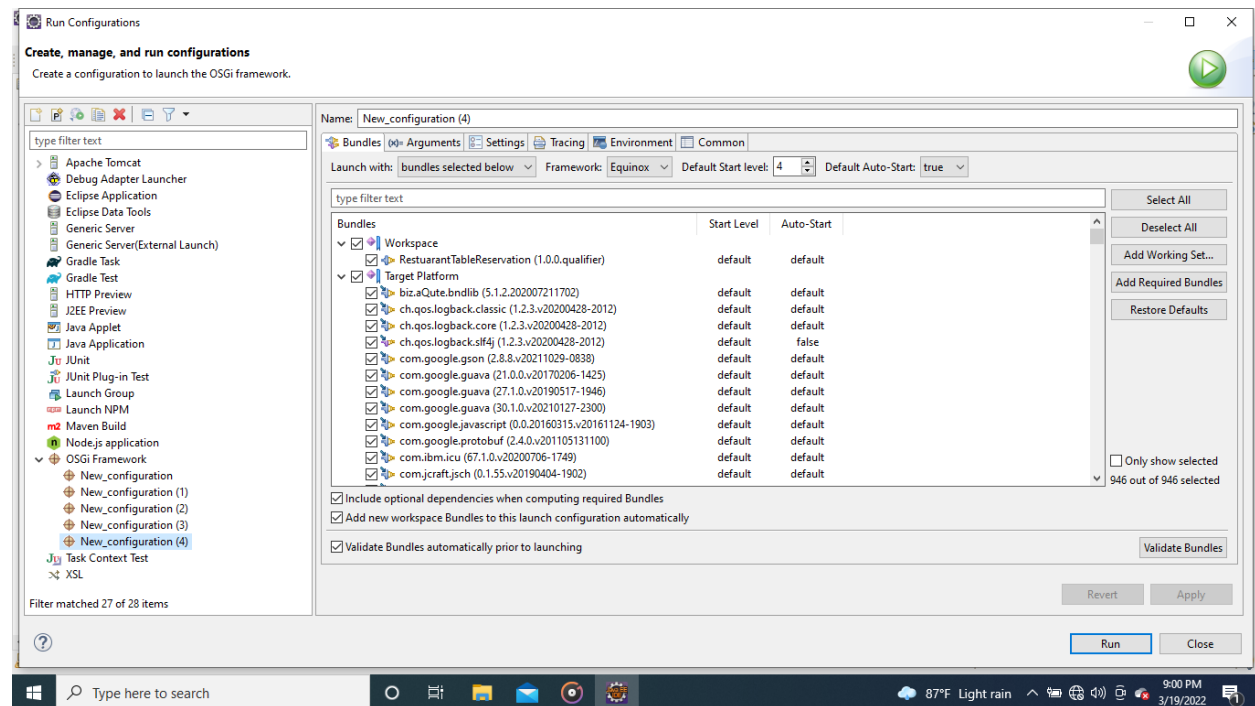
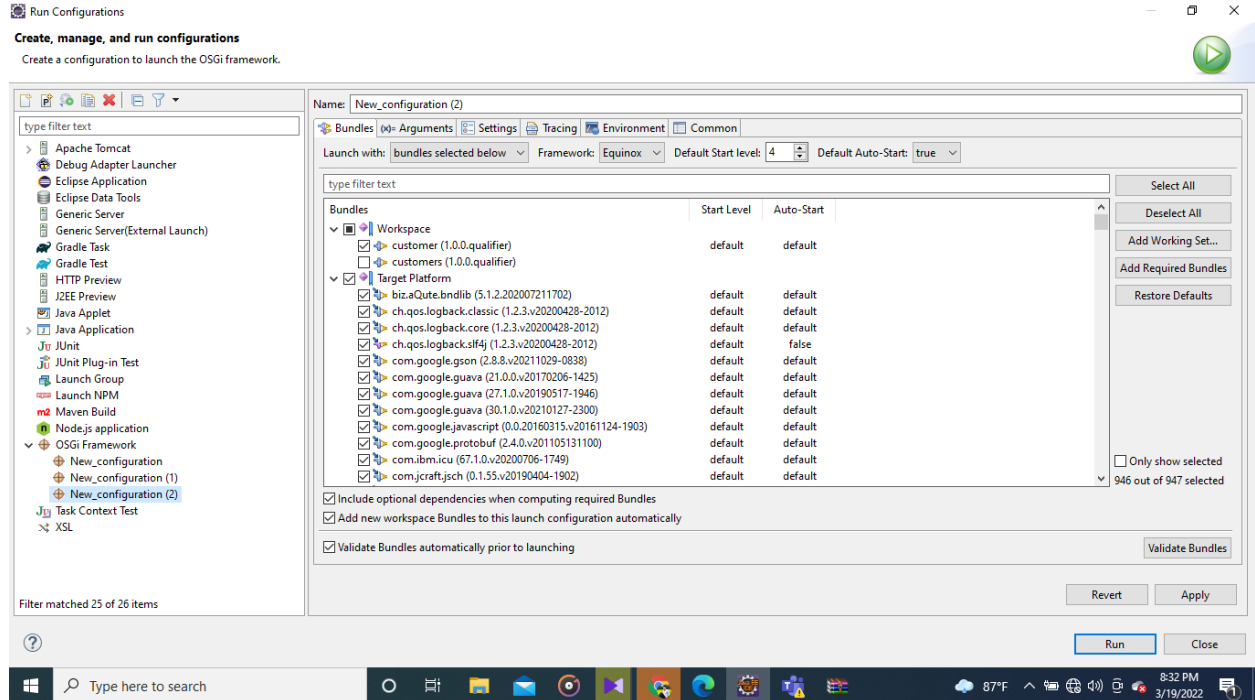


Table Reservation

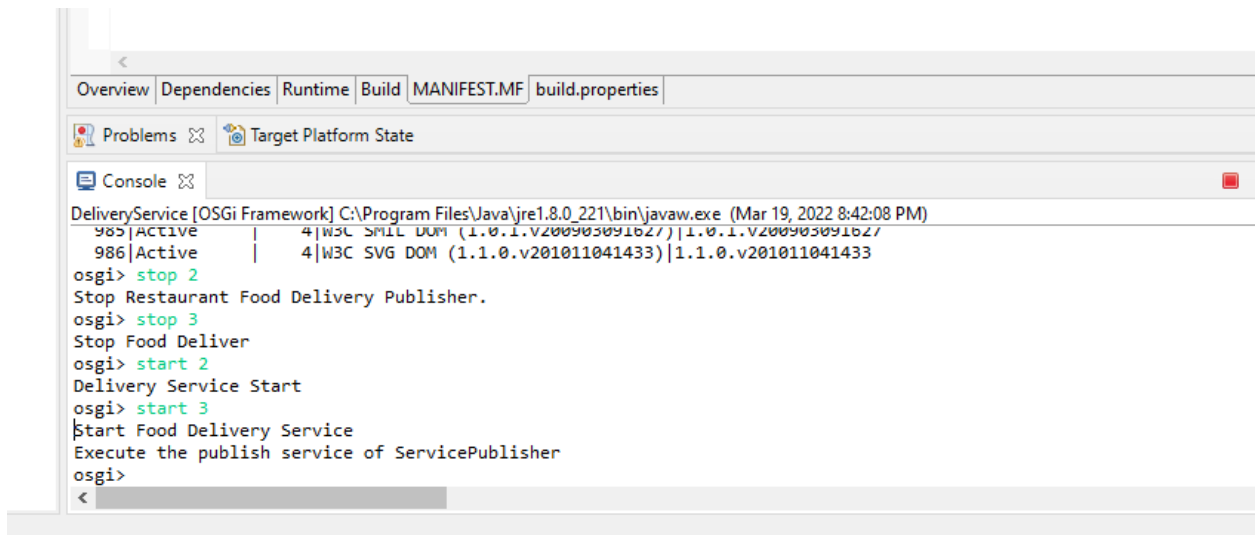


Customer



BEHAVIOR AND OUTPUTS

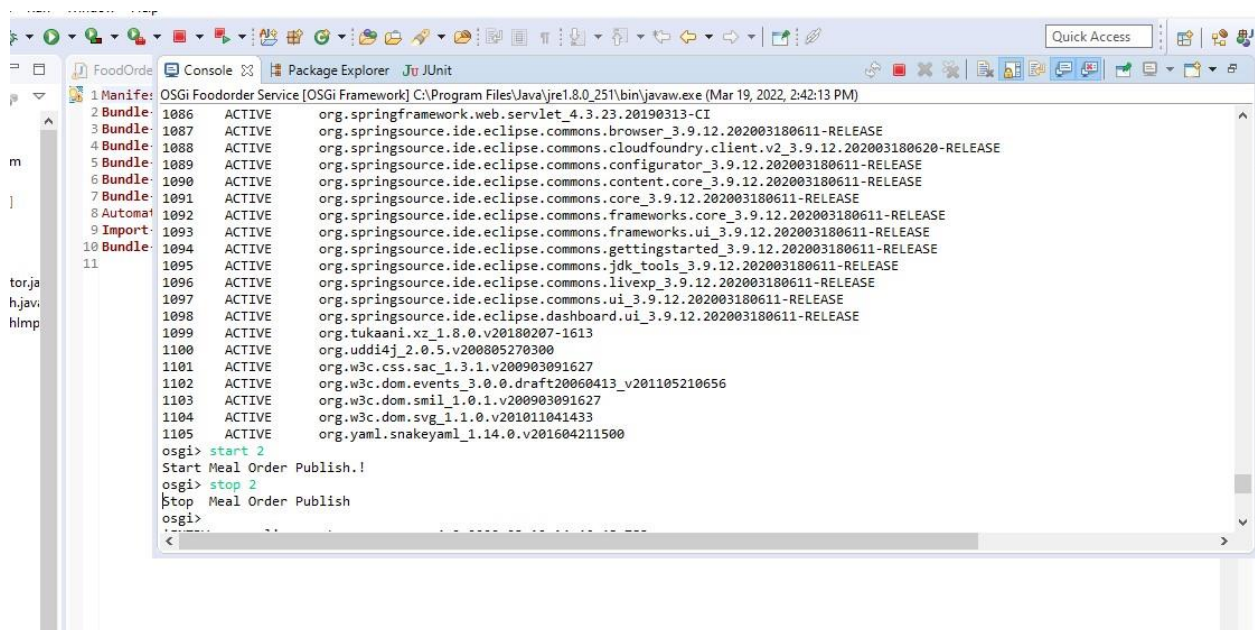
Delivery Service




```
OSGi Foodorder Service [OSGi Framework] C:\Program Files\Java\jre1.8.0_251\bin\javaw.exe (Mar 19, 2022 2:42:13 PM)
972|Active|4|ASM Commons (7.2.0.v20191010-1910)|7.2.0.v20191010-1910
973|Active|4|ASM Tree (8.0.1.v20200420-1007)|8.0.1.v20200420-1007
974|Active|4|ASM Tree (7.2.0.v20191010-1910)|7.2.0.v20191010-1910
975|Active|4|org.opentest4j:opentest4j (1.2.0.v20190826-0900)|1.2.0.v20190826-0900
976|Active|4|SAT4J Core (2.3.5.v201308161310)|2.3.5.v201308161310
977|Active|4|SAT4J Pseudo (2.3.5.v201404071733)|2.3.5.v201404071733
978|Active|4|SLF4J API Module (1.7.30.v20200204-2150)|1.7.30.v20200204-2150
979|Active|4|SLF4J API (1.7.2.v20121108-1250)|1.7.2.v20121108-1250
980|Active|4|m2e connector for the mavenarchiver and pom properties (0.17.5.202002191804)|0.17.5.202002191804
981|Active|4|XZ for Java (1.8.0.v20180207-1613)|1.8.0.v20180207-1613
982|Active|4|UDDI4J (2.0.5.v200805270300)|2.0.5.v200805270300
983|Active|4|W3C CSS SAC (1.3.1.v200903091627)|1.3.1.v200903091627
984|Active|4|W3C DOM Level 3 Events (3.0.0.draft20060413_v201105210656)|3.0.0.draft20060413_v201105210656
985|Active|4|W3C SMIL DOM (1.0.1.v200903091627)|1.0.1.v200903091627
986|Active|4|W3C SVG DOM (1.1.0.v201011041433)|1.1.0.v201011041433
osgi> stop 2
Stop Restaurant Food Delivery Publisher.
osgi> stop 3
Stop Food Deliver
osgi>
```

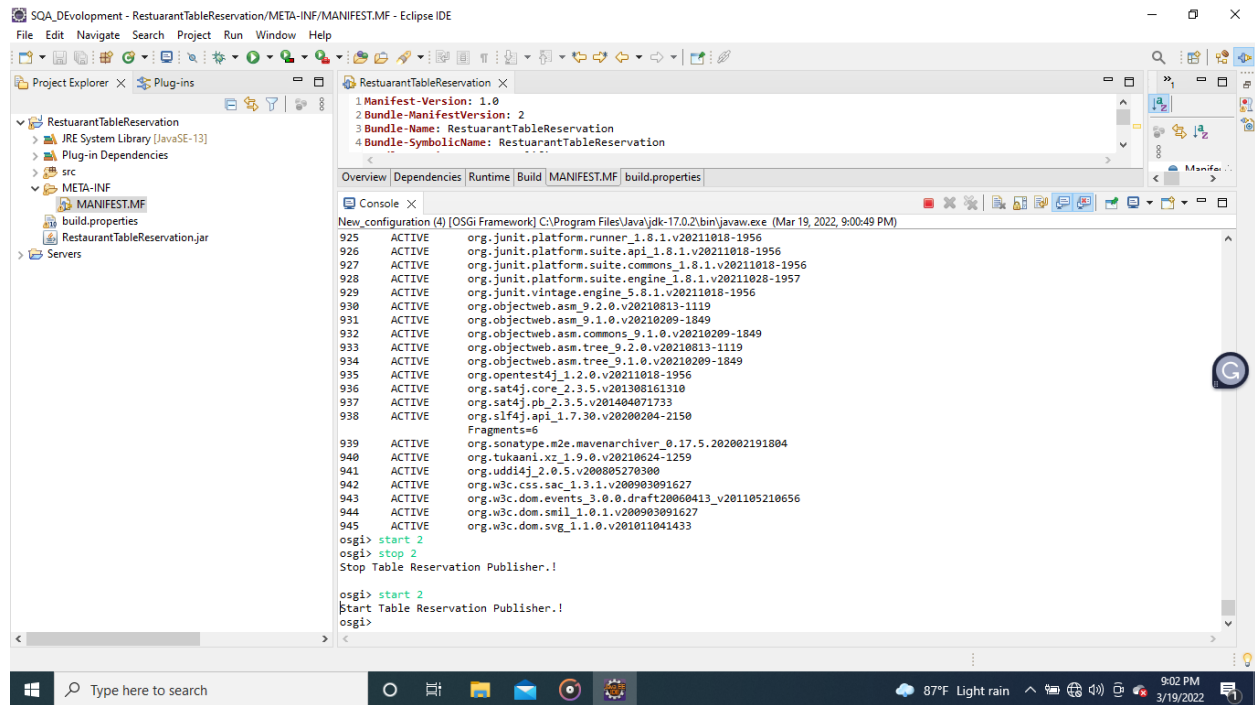
Active
Go to S

Food Ordering Service

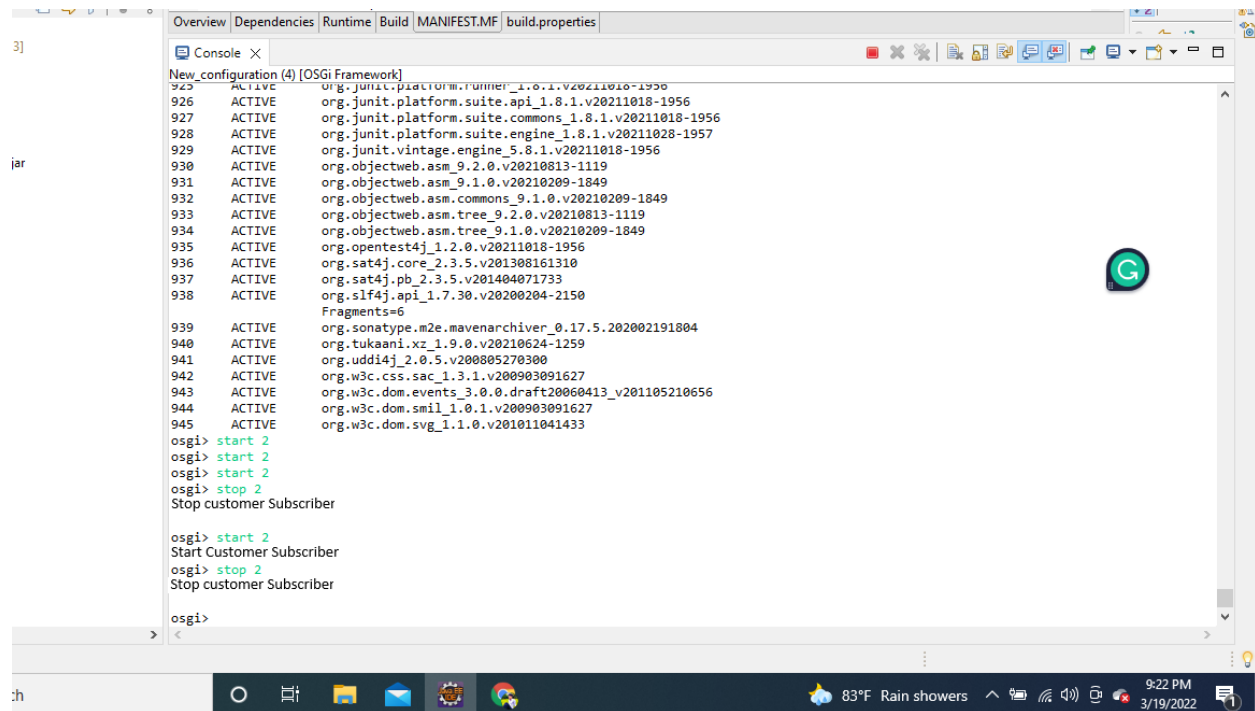


```
OSGi Foodorder Service [OSGi Framework] C:\Program Files\Java\jre1.8.0_251\bin\javaw.exe (Mar 19, 2022 2:42:13 PM)
1 Bundle: 1086 ACTIVE org.springframework.web.servlet_4.3.23.20190313-CI
2 Bundle: 1087 ACTIVE org.springframework.ide.eclipse.commons.browser_3.9.12.202003180611-RELEASE
3 Bundle: 1088 ACTIVE org.springframework.ide.eclipse.commons.cloudfoundry.client.v2_3.9.12.202003180620-RELEASE
4 Bundle: 1088 ACTIVE org.springframework.ide.eclipse.commons.configurator_3.9.12.202003180611-RELEASE
5 Bundle: 1089 ACTIVE org.springframework.ide.eclipse.commons.content.core_3.9.12.202003180611-RELEASE
6 Bundle: 1090 ACTIVE org.springframework.ide.eclipse.commons.core_3.9.12.202003180611-RELEASE
7 Bundle: 1091 ACTIVE org.springframework.ide.eclipse.commons.frameworks.core_3.9.12.202003180611-RELEASE
8 Automatic 1092 ACTIVE org.springframework.ide.eclipse.commons.frameworks.ui_3.9.12.202003180611-RELEASE
9 Import 1093 ACTIVE org.springframework.ide.eclipse.commons.gettingstarted_3.9.12.202003180611-RELEASE
10 Bundle: 1094 ACTIVE org.springframework.ide.eclipse.commons.jdk_tools_3.9.12.202003180611-RELEASE
11 1095 ACTIVE org.springframework.ide.eclipse.commons.livexp_3.9.12.202003180611-RELEASE
1096 ACTIVE org.springframework.ide.eclipse.commons.ui_3.9.12.202003180611-RELEASE
1097 ACTIVE org.springframework.ide.eclipse.dashboard.ui_3.9.12.202003180611-RELEASE
1098 ACTIVE org.tukaani.xz_1.8.0.v20180207-1613
1099 ACTIVE org.uddi4j_2.0.5.v200805270300
1100 ACTIVE org.w3c.css.sac_1.3.1.v200903091627
1101 ACTIVE org.w3c.dom.events_3.0.0.draft20060413_v201105210656
1102 ACTIVE org.w3c.dom.smil_1.0.1.v200903091627
1103 ACTIVE org.w3c.dom.svg_1.1.0.v201011041433
1104 ACTIVE org.yaml.snakeyaml_1.14.0.v201604211500
osgi> start 2
Start Meal Order Publish.
osgi> stop 2
Stop Meal Order Publish
osgi>
```

Table Reservation



Customer



SOURCE CODES

Delivery

```
ServiceActivator.java  ServiceDeliver.java  ServiceDeliveryImpl.java
1  package deliveryservice;
2
3  import org.osgi.framework.BundleActivator;
4
5
6
7
8
9  public class ServiceActivator implements BundleActivator {
10
11      ServiceRegistration publishDeliveryRegistration;
12
13
14      @Override
15      public void start(BundleContext context) throws Exception {
16          System.out.println("Delivery Service Start");
17
18
19
20          ServiceDeliver deliveryService = new ServiceDeliveryImpl();
21          publishDeliveryRegistration = context.registerService(ServiceDeliver.class.getName(), deliveryService, null);
22
23      }
24
25
26      @Override
27      public void stop(BundleContext context) throws Exception {
28          System.out.println("Stop Restaurant Food Delivery Publisher.");
29          publishDeliveryRegistration.unregister();
30      }
31
32  }
33
```

```
ServiceActivator.java  ServiceDeliver.java  ServiceDeliveryImpl.java
1  package deliveryservice;
2
3  public interface ServiceDeliver {
4      public void deliveryService();
5
6  }
7
```

```
ServiceActivator.java  ServiceDeliver.java  ServiceDeliveryImpl.java
1 package deliveryservice;
2
3 import java.util.Random;
4 import java.util.Scanner;
5
6 public class ServiceDeliveryImpl implements ServiceDeliver {
7
8
9 @Override
10 public void deliveryService() {
11
12     Scanner sc = new Scanner(System.in);
13
14     System.out.println("");
15     System.out.println("WELCOME TO FOOD ORDERING SERVICE");
16     System.out.println("");
17
18     System.out.print("Enter Your Name : ");
19     String name = sc.nextLine();
20
21     System.out.println("");
22
23     System.out.println("WELCOME " + name);
24
25     System.out.println("");
26
27     int deliverytype = 1;
28     while (deliverytype == 1) {
29
30         System.out.println("");
31         System.out.println("FOOD DELIVERY SERVICE");
32         System.out.println("\n\
```

```
ServiceActivator.java  ServiceDeliver.java  ServiceDeliveryImpl.java
31     System.out.println("FOOD DELIVERY SERVICE");
32     System.out.println("");
33
34     System.out.println("\t\t *****DISTANCE*****");
35     System.out.println("");
36
37
38     System.out.println("\t\t 1. Around 5km ");
39     System.out.println("\t\t 2. Around 10km ");
40     System.out.println("\t\t 3. Around 15km ");
41     System.out.println("\t\t 0. Exit");
42     System.out.println("");
43
44     System.out.print("Please Select the Distance.(1/2/3/0) : ");
45     int option = sc.nextInt();
46
47     if (option == 1 || option == 2 || option == 3) {
48
49         System.out.print("Enter Quantity : ");
50         int qty = sc.nextInt();
51         System.out.println();
52
53
54         if (option == 1) {
55
56             System.out.println("Distance \t: " + "Around 5km");
57             System.out.println("Delivery charge = Rs.100.00 ");
58             System.out.println("");
59
60         } else if (option == 2) {
61             double total = (450 * qty);
62             System.out.println("Distance \t: " + "Around 10km");
```

```
ServiceActivator.java ServiceDeliver.java ServiceDeliveryImpl.java
60         } else if (option == 2) {
61             double total = (450 * qty);
62             System.out.println("Distance \t: " + "Arround 10km");
63             System.out.println("Delivery charge = Rs.150.00 ");
64             System.out.println("");
65
66         } else {
67             System.out.println("Distance \t: " + "Arround 15km");
68             System.out.println("Delivery charge = Rs.200.00 ");
69             System.out.println("");
70
71         }
72
73         System.out.println("Do you want to continue ? (Type 1 = Yes / Type 2 = No) : ");
74         deliverytype = sc.nextInt();
75
76         if (deliverytype == 2) {
77             System.out.println("");
78             System.out.println("THANK YOU");
79             System.out.println();
80         }
81
82     } else if (option == 0) {
83
84         System.out.println("");
85         System.out.println("THANK YOU");
86         System.out.println();
87         return;
88     }
89     } else {
90
```

```
ServiceActivator.java ServiceDeliver.java ServiceDeliveryImpl.java
89     } else {
90
91         System.out.println("");
92         System.out.println("Invalid Input.!!Do you want to continue.? (Type 1 = Yes / Type 2 = No) : ");
93         deliverytype = sc.nextInt();
94
95         if (deliverytype == 2) {
96             System.out.println("");
97             System.out.println(
98                 "THANK YOU");
99
100             System.out.println();
101         }
102     }
103 }
104
105 while (deliverytype != 1 && deliverytype != 2) {
106     System.out.println("");
107     System.out.println("Invalid Input.");
108     System.out.println("Type 1 = Continue Food Ordering / Type 2 = Exit ");
109     deliverytype = sc.nextInt();
110
111     if (deliverytype == 2) {
112         System.out.println();
113         System.out.println(
114             "THANK YOU");
115
116         System.out.println();
117     }
118 }
119
```

```
1 package fooddeliver;
2
3 import org.osgi.framework.BundleActivator;
4
5 public class ServiceActivator implements BundleActivator {
6
7     ServiceReference serviceReference;
8
9     public void start(BundleContext context) throws Exception {
10         System.out.println("Start Food Delivery Service");
11         serviceReference = context.getServiceReference(ServicePublish.class.getName());
12         ServicePublish servicePublish = (ServicePublish) context.getService(serviceReference);
13         System.out.println(servicePublish.publishService());
14     }
15
16     public void stop(BundleContext context) throws Exception {
17         System.out.println("Stop Food Deliver ");
18         context.ungetService(serviceReference);
19     }
20 }
21
22
23
24
25
26
27
```

Food Order

```
1 package foodorder;
2
3 import org.osgi.framework.BundleActivator;
4
5 public class FoodOrderServiceActivator implements BundleActivator {
6
7     ServiceRegistration publishServiceRegistration;
8
9     @Override
10     public void start(BundleContext context) throws Exception {
11         System.out.println("Start Meal Order Publish.!");
12         FoodOrderServicePublish publishService = new FoodOrderServicePublishImpl();
13         publishServiceRegistration = context.registerService(FoodOrderServicePublish.class.getName(), publishService, null);
14     }
15
16     @Override
17     public void stop(BundleContext context) throws Exception {
18         System.out.println("Stop Meal Order Publish");
19         publishServiceRegistration.unregister();
20     }
21 }
22
23
24
25
26
```

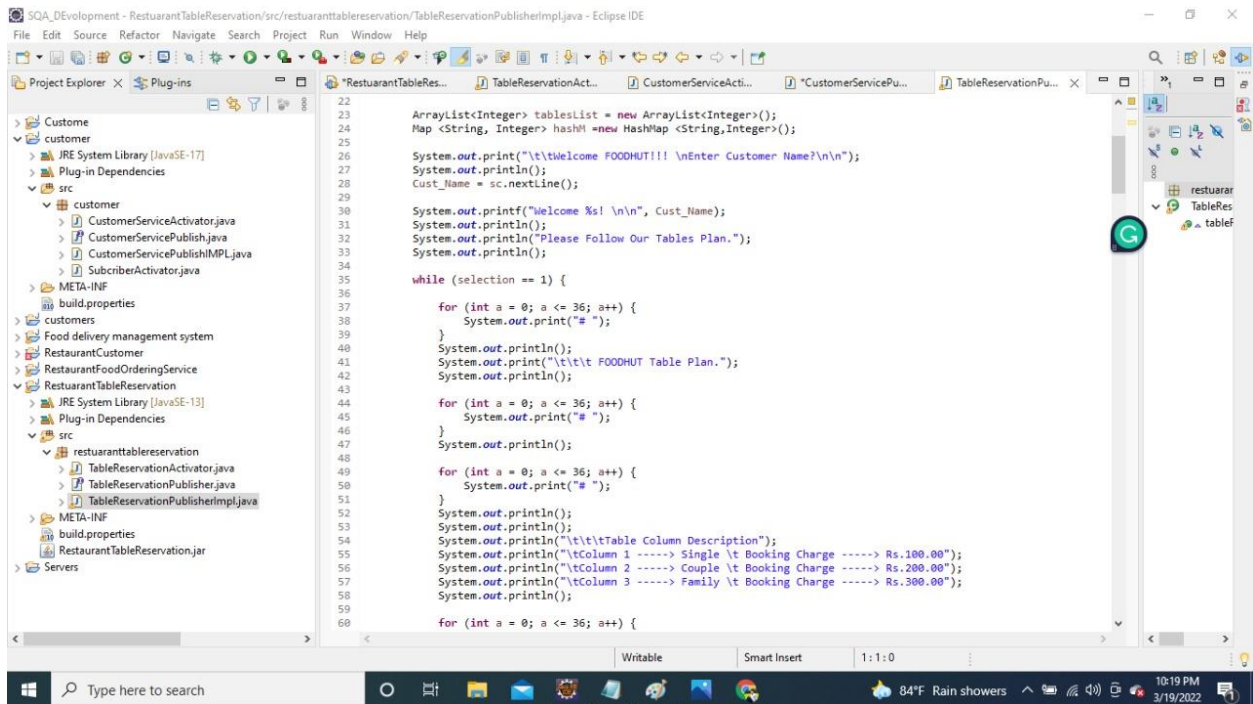
```
1 package foodorder;
2
3 public interface FoodOrderServicePublish {
4
5     public void foodOrderService();
6
7 }
8
```


Customer

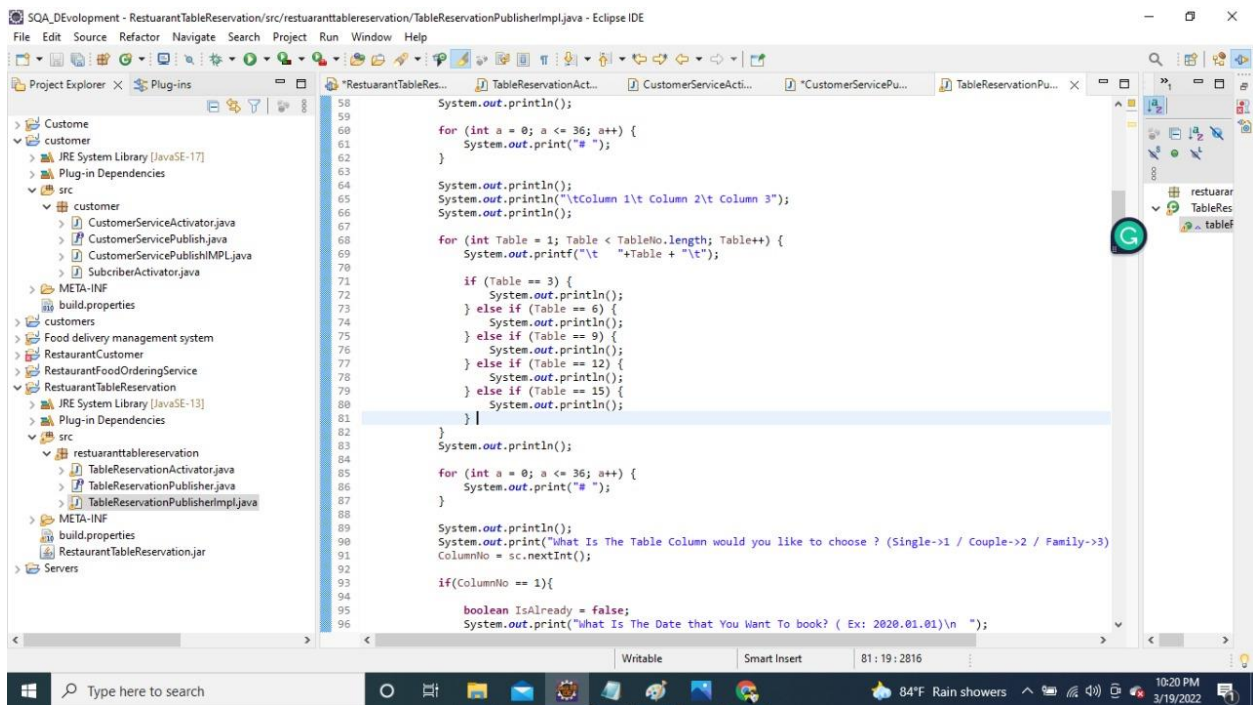
```
5 public class CustomerServicePublishIMPL {
6
7
8
9
10
11     public void CustomerService() {
12
13         try (Scanner sc = new Scanner(System.in)) {
14             System.out.println("");
15             System.out.println("=====WELCOME TO CUSTOMER SERVICE=====");
16             System.out.println("");
17             System.out.print("Enter Your Name : ");
18             String name = sc.nextLine();
19
20             System.out.println("");
21             System.out.println("=====HELLO " + name + "=====");
22             System.out.println("");
23
24             int customerSelection = 1;
25             while (customerSelection == 1) {
26
27                 System.out.println("");
28                 System.out.println("=====SERVICE=====");
29                 System.out.println("");
30
31                 System.out.println("\t\t\t *****Customer List*****");
32                 System.out.println("\t\t\t Customer Type   ");
33                 System.out.println("\t\t\t =====");
34                 System.out.println("\t\t\t 1. The Couple Customer - ");
35                 System.out.println("\t\t\t 2. The Family in a Rush");
36                 System.out.println("\t\t\t 3. The Regulars Customer");
37                 System.out.println("\t\t\t 0. Exit");
38
39                 System.out.print("Please Select the Customer type you want.(1/2/3/0) : ");
40                 int option = sc.nextInt();
41
42
43
```

```
47         int qty = sc.nextInt();
48         System.out.println("");
49
50         Random rand = new Random();
51         int orderNo = rand.nextInt(1000);
52
53         if (qty > 0) {
54
55             if (option == 1) {
56                 double discount = (qty * 10) / 100;
57                 double total = (qty - discount);
58                 System.out.println("Customer Number \t: " + orderNo);
59                 System.out.println("Customer Name \t: " + "Couple Customer");
60                 System.out.println("payment \t: " + qty);
61                 System.out.println("Total payment\t: " + total);
62                 System.out.println("");
63
64             } else if (option == 2) {
65                 double discount = (qty * 20) / 100;
66                 double total = (qty - discount);
67                 System.out.println("Customer Number \t: " + orderNo);
68                 System.out.println("Customer Name \t: " + "Family in a Rush");
69                 System.out.println("payment \t: " + qty);
70                 System.out.println("Total payment\t: " + total);
71                 System.out.println("");
72
73             } else {
74                 double discount = (qty * 25) / 100;
75                 double total = (qty - discount);
76                 System.out.println("Customer Number \t: " + orderNo);
77                 System.out.println("Customer Name \t: " + "Regulars Customer");
78                 System.out.println("payment \t: " + qty);
79                 System.out.println("Total payment\t: " + total);
80                 System.out.println("");
81
82             }
83
84             System.out.println("Do you want to continue ? (Type 1 = Yes / Type 2 = No) : ");
85             customerSelection = sc.nextInt();
86
```


Table Reservation



```
22 ArrayList<Integer> tablesList = new ArrayList<Integer>();
23 Map<String, Integer> hashM = new HashMap<String,Integer>();
24
25 System.out.print("\t\tWelcome FOODHUT!!! \nEnter Customer Name?\n\n");
26 System.out.println();
27 Cust_Name = sc.nextLine();
28
29 System.out.printf("Welcome %s! \n\n", Cust_Name);
30 System.out.println();
31 System.out.println("Please Follow Our Tables Plan.");
32 System.out.println();
33
34 while (selection == 1) {
35     for (int a = 0; a <= 36; a++) {
36         System.out.print(" ");
37     }
38     System.out.println();
39     System.out.print("\t\t\tFOODHUT Table Plan.");
40     System.out.println();
41     for (int a = 0; a <= 36; a++) {
42         System.out.print(" ");
43     }
44     System.out.println();
45     for (int a = 0; a <= 36; a++) {
46         System.out.print(" ");
47     }
48     System.out.println();
49     System.out.print(" ");
50     System.out.println();
51     System.out.println();
52     System.out.println("\t\t\tTable Column Description");
53     System.out.println("\tColumn 1 ----- Single \t Booking Charge ----- Rs.100.00");
54     System.out.println("\tColumn 2 ----- Couple \t Booking Charge ----- Rs.200.00");
55     System.out.println("\tColumn 3 ----- Family \t Booking Charge ----- Rs.300.00");
56     System.out.println();
57     for (int a = 0; a <= 36; a++) {
58         System.out.print(" ");
59     }
60     System.out.println();
```



```
58 System.out.println();
59 for (int a = 0; a <= 36; a++) {
60     System.out.print(" ");
61 }
62
63 System.out.println();
64 System.out.println("\tColumn 1\t Column 2\t Column 3");
65 System.out.println();
66 for (int Table = 1; Table < TableNo.length; Table++) {
67     System.out.printf("\t\t\t"+Table + "\t");
68
69     if (Table == 3) {
70         System.out.println();
71     } else if (Table == 6) {
72         System.out.println();
73     } else if (Table == 9) {
74         System.out.println();
75     } else if (Table == 12) {
76         System.out.println();
77     } else if (Table == 15) {
78         System.out.println();
79     }
80 }
81 System.out.println();
82 for (int a = 0; a <= 36; a++) {
83     System.out.print(" ");
84 }
85
86 System.out.println();
87 System.out.print("What Is The Table Column would you like to choose ? (Single->1 / Couple->2 / Family->3)");
88 ColumnNo = sc.nextInt();
89
90 if(ColumnNo == 1){
91     boolean IsAlready = false;
92     System.out.print("What Is The Date that You Want to book? ( Ex: 2020.01.01)\n ");
93 }
94
95
96
```

