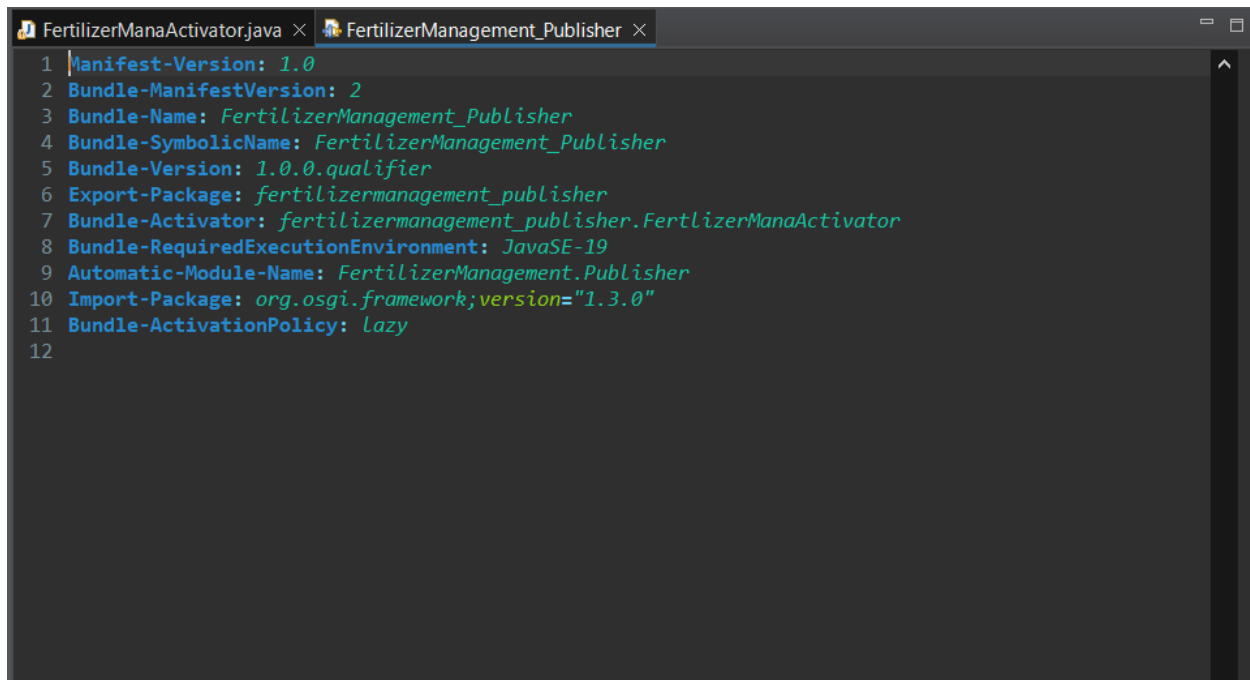


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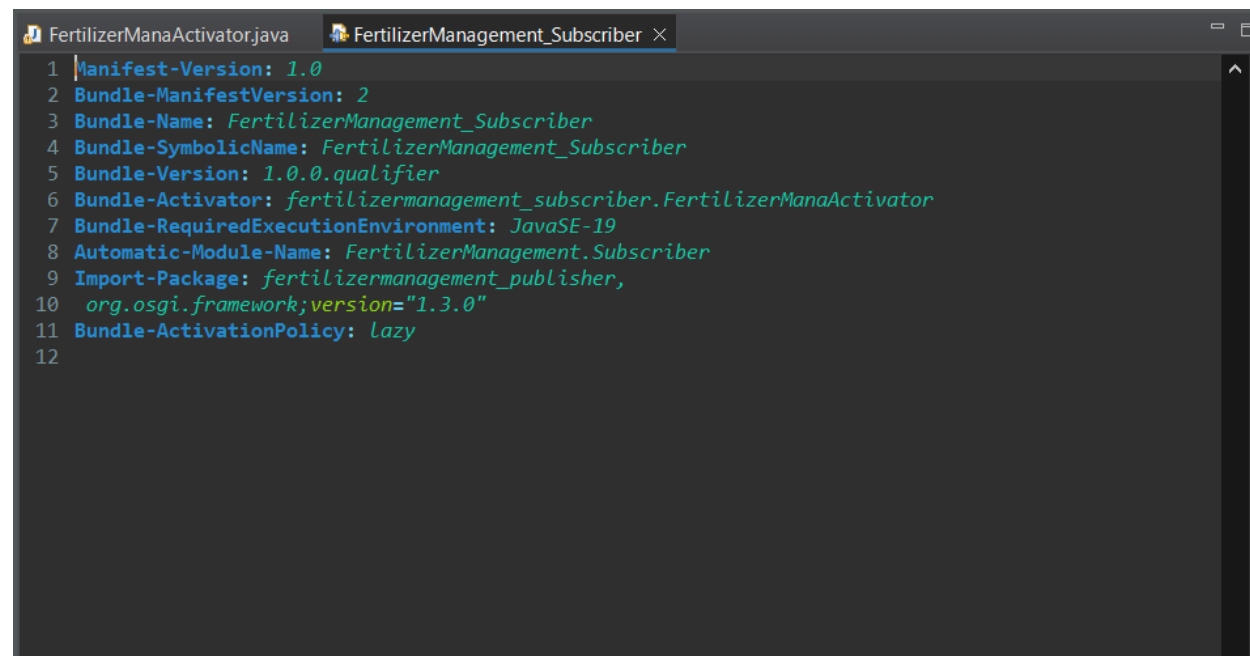
The customer has selected the fertilizers, they will need. First, the customer chooses the type of fertilizer name And also, the customer can see the Unit Price. The admin can add fertilizers and remove fertilizers in the first option and can print the stock details and get fertilizer quantity.

Manifest Implementation

Fertilize Management(IT2151380)



```
FertilizerManaActivator.java × FertilizerManagement_Publisher ×
1 Manifest-Version: 1.0
2 Bundle-ManifestVersion: 2
3 Bundle-Name: FertilizerManagement_Publisher
4 Bundle-SymbolicName: FertilizerManagement_Publisher
5 Bundle-Version: 1.0.0.qualifier
6 Export-Package: fertilizermanagement_publisher
7 Bundle-Activator: fertilizermanagement_publisher.FertilizerManaActivator
8 Bundle-RequiredExecutionEnvironment: JavaSE-19
9 Automatic-Module-Name: FertilizerManagement.Publisher
10 Import-Package: org.osgi.framework;version="1.3.0"
11 Bundle-ActivationPolicy: lazy
12
```



```
FertilizerManaActivator.java × FertilizerManagement_Subscriber ×
1 Manifest-Version: 1.0
2 Bundle-ManifestVersion: 2
3 Bundle-Name: FertilizerManagement_Subscriber
4 Bundle-SymbolicName: FertilizerManagement_Subscriber
5 Bundle-Version: 1.0.0.qualifier
6 Bundle-Activator: fertilizermanagement_subscriber.FertilizerManaActivator
7 Bundle-RequiredExecutionEnvironment: JavaSE-19
8 Automatic-Module-Name: FertilizerManagement.Subscriber
9 Import-Package: fertilizermanagement_publisher,
10 org.osgi.framework;version="1.3.0"
11 Bundle-ActivationPolicy: lazy
12
```

Producer Installation

Fertilize Management(IT2151380)

```
FertilizerManaActivator.java ×
1 package fertilizermanagement_publisher;
2
3 import org.osgi.framework.BundleActivator;
4
5
6
7
8 public class FertilizerManaActivator implements BundleActivator {
9
10
11     ServiceRegistration publishServiceRegistration;
12
13     public void start(BundleContext context) throws Exception {
14         System.out.println("Fertilizer Manage Start.....");
15         FertilizerManagement stock = new FertilizerManageImpl();
16
17         publishServiceRegistration = context.registerService(FertilizerManagement.class.getName(), stock, null);
18     }
19
20     public void stop(BundleContext context) throws Exception {
21         System.out.println("Fertilizer Manage stop.....");
22         publishServiceRegistration.unregister();
23     }
24
25
26
27
28 }
29
```

Consumer Installation

Fertilize Management(IT2151380)

```
FertilizerManaActivator.java ×
1 package fertilizermanagement_subscriber;
2 import org.osgi.framework.ServiceReference;
3
4
5
6
7
8
9
10
11 public class FertilizerManaActivator implements BundleActivator {
12
13     Scanner scanner = new Scanner(System.in);
14
15     private ServiceReference<FertilizerManagement> stockServiceRef;
16     private FertilizerManagement stockService;
17
18     public void start(BundleContext context) throws Exception {
19
20         String operation = "start";
21
22         stockServiceRef = context.getServiceReference(FertilizerManagement.class);
23         stockService = context.getService(stockServiceRef);
24
25         System.out.println("\n-----");
26         System.out.println("|           Welcome to Fertilizer App           |");
27         System.out.println("-----");
28
29         while(!operation.equalsIgnoreCase("stop")) {
30
31             System.out.println("\nWhat would you like to do?\n");
32             System.out.println("a. Add a fertilizer.");
33             System.out.println("c. Remove a fertilizer.");
34             System.out.println("d. Print the stock Details.");
35             System.out.println("e. Get fertilizer quantity.");
36             System.out.println("h. View out of stock Products.");
37             System.out.println("i. Type \"stop\" to end.");
38             System.out.println();
39
40             System.out.print("Enter your choice: ");
41             operation = scanner.next();
42
43         }
44     }
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60
61
62
63
64
65
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80
81
82
83
84
85
86
87
88
89
90
91
92
93
94
95
96
97
98
99
100
}
```

```

FertilizerManaActivator.java ×
38     System.out.println();
39
40     System.out.print("Enter your choice: ");
41     operation = scanner.next();
42
43     if(operation.equalsIgnoreCase("a")) {
44
45         double unitPrice = 0;
46
47         System.out.print("\nEnter Fertilizer Name : ");
48         String FertilizerName = scanner.next();
49
50         System.out.print("Enter quantity: ");
51         int quantity = scanner.nextInt();
52
53         Fertilizers fertilizers = stockService.getFertilizersByName(FertilizerName);
54
55         if(fertilizers == null) {
56             System.out.print("Enter Unit Price: ");
57             unitPrice = scanner.nextDouble();
58         }
59
60         stockService.addFertilizers(FertilizerName, quantity, unitPrice);
61
62     }else if(operation.equalsIgnoreCase("b")) {
63
64         System.out.print("Enter fertilizer name: ");
65         String FertilizerName = scanner.next();
66
67         System.out.print("Enter quantity: ");
68         int quantity = scanner.nextInt();
69
70     }else if(operation.equalsIgnoreCase("c")) {
71         System.out.print("Enter fertilizer name: ");
72         String FertilizerName = scanner.next();
73

```

```

FertilizerManaActivator.java ×
73         String FertilizerName = scanner.next();
74
75         stockService.deleteFertilizers(FertilizerName);
76
77     }else if(operation.equalsIgnoreCase("d")) {
78
79         stockService.getAllData();
80
81     }else if(operation.equalsIgnoreCase("e")) {
82
83         System.out.print("Enter fertilizer name: ");
84         String FertilizerName = scanner.next();
85
86         System.out.println("");
87         System.out.println(FertilizerName + " : " + stockService.getQuantity(FertilizerName));
88
89     }else {
90         break;
91     }
92
93
94 }
95
96 System.out.println("\n-----");
97 System.out.println("|           Thank you for using our           |");
98 System.out.println("|           Fertilizer App!                   |");
99 System.out.println("-----");
100 }
101
102 public void stop(BundleContext context) throws Exception {
103     System.out.println("Stop Inventory App...");
104     context.ungetService(stockServiceRef);
105 }
106
107 }
108

```

Behaviors and Outputs

Fertilize Management(IT2151380)

```
Console ×
F_Subscriber [OSGi Framework] C:\Program Files\Java\jdk-19\bin\javaw.exe (Mar 5, 2024, 10:09:31 AM) [pid: 20868]
g! start 3

-----
|      Welcome to Fertilizer App      |
-----

What would you like to do?

a. Add a fertilizer.
c. Remove a fertilizer.
d. Print the stock Details.
e. Get fertilizer quantity.
h. View out of stock Products.
i. Type "stop" to end.

Enter your choice: a

Enter Fertilizer Name : Organic
Enter quantity: 20
Enter Unit Price: 550
|
-----
|      Updated Stock      |
-----

-----
| Product Name | In Stock | Unit Price |
-----
| Organic      | 20       | Rs.550.0   |
-----
```

```
Console ×
F_Subscriber [OSGi Framework] C:\Program Files\Java\jdk-19\bin\javaw.exe (Mar 5, 2024, 10:09:31 AM) [pid: 20868]

-----
| Product Name | In Stock | Unit Price |
-----
| Organic      | 20       | Rs.550.0   |
-----

What would you like to do?

a. Add a fertilizer.
c. Remove a fertilizer.
d. Print the stock Details.
e. Get fertilizer quantity.
h. View out of stock Products.
i. Type "stop" to end.

Enter your choice: a

Enter Fertilizer Name : Urea
Enter quantity: 50
Enter Unit Price: 11550
|
-----
|      Updated Stock      |
-----

-----
| Product Name | In Stock | Unit Price |
-----
| Organic      | 20       | Rs.550.0   |
| Urea         | 50       | Rs.11550.0  |
-----
```

Console ×

F_Subscriber [OSGi Framework] C:\Program Files\Java\jdk-19\bin\javaw.exe (Mar 5, 2024, 10:09:31 AM) [pid: 20868]

Product Name	In Stock	Unit Price
Organic	20	Rs.550.0
Urea	50	Rs.11550.0

What would you like to do?

- a. Add a fertilizer.
- c. Remove a fertilizer.
- d. Print the stock Details.
- e. Get fertilizer quantity.
- h. View out of stock Products.
- i. Type "stop" to end.

Enter your choice: c

Enter fertilizer name: Urea

Urea successfully deleted.