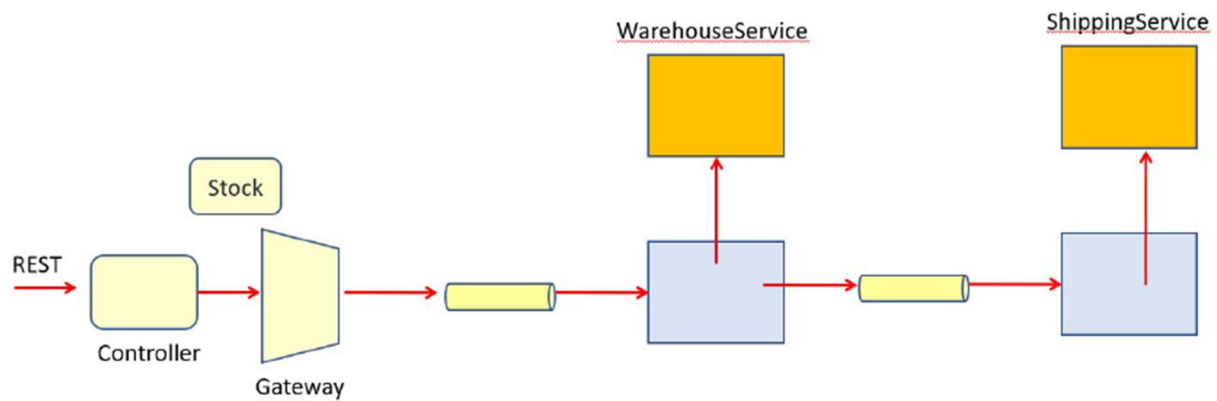


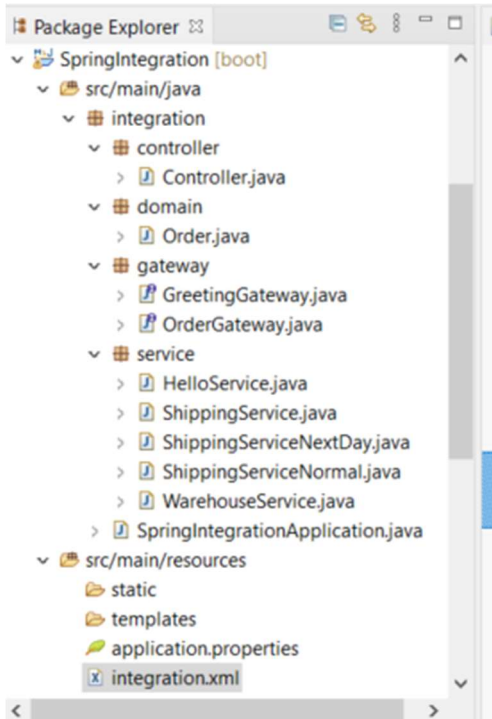
Subject	SWA – CS590
Assignment	Lab 7
Date	8/7/2021
Students	Vo Ngoc Huy Nguyen - 611066
Professor	Rene de Jong

Lab Assignment 7: Spring Integration

Exercise 1: Modify Spring Integration project to route 2 Channels (refer attached sources)



- **Structure folder:**



- **Integration file:**

```

14  <!-- <channel id="inputChannel"/>
15  <service-activator input-channel="inputChannel"
16                    ref="helloService"
17                    method="sayHello"/>
18
19  <beans:bean id="helloService" class="integration.HelloService"/>-->
20
21  <channel id="channel1"/>
22  <channel id="channel2"/>
23  <channel id="normalshippingchannel"/>
24  <channel id="nextdayshippingchannel"/>
25
26  <router method="route" input-channel="channel2">
27    <beans:bean class="integration.service.ShippingService" />
28  </router>
29
30  <service-activator input-channel="normalshippingchannel"
31                    ref="shippingServiceNormal"
32                    method="printOrder"/>
33
34  <service-activator input-channel="nextdayshippingchannel"
35                    ref="shippingServiceNextDay"
36                    method="printOrder"/>
37
38  <service-activator input-channel="channel1"
39                    output-channel="channel2"
40                    ref="warehouseService"
41                    method="printOrder"/>
42
43  <beans:bean id="warehouseService" class="integration.service.WarehouseService"/>
44  <beans:bean id="shippingServiceNormal" class="integration.service.ShippingServiceNormal"/>
45  <beans:bean id="shippingServiceNextDay" class="integration.service.ShippingServiceNextDay"/>
46
47  </beans:beans>
48

```

And running results:

- Normal Order

MUM Global Online Education : x localhost:8090/order/001/175 x Maven Repository: org.springframework x +

← → ↻ ⓘ localhost:8090/order/001/175

```
{ "ordernumber": "001", "amount": 175 }
```

workspace-spring-tool-suite-4-4.11.0.RELEASE_1 - SpringIntegration/src/main/java/integration/controller/Controller.java - Spring Tool Suite 4

Package Explorer: SpringIntegration [boot] > src/main/java > integration > controller > Controller.java

```

5 import org.springframework.messaging.Message;
6 import org.springframework.messaging.support.MessageBuilder;
7 import org.springframework.web.bind.annotation.PathVariable;
8 import org.springframework.web.bind.annotation.RequestMapping;
9 import org.springframework.web.bind.annotation.RestController;
10
11 import integration.domain.Order;
12 import integration.gateway.OrderGateway;
13
14
15 @RestController
16 public class Controller {
17     @Autowired
18     private OrderGateway orderGateway;
19
20     @RequestMapping("/order/{ordernumber}/{amount}")
21     public Order sendOrder(@PathVariable("ordernumber") String ordernumber, @PathVariable("amount") int amount) {
22         Message<Order> orderMessage = MessageBuilder.withPayload(new Order(ordernumber, amount)).build();
23         return orderGateway.handleRequest(orderMessage);
24     }
25 }
26

```

Boot Dashboard: local > customers > orders_jms > products_jms > shoppingcart > SpringIntegration [8090]

Problems: 0. Javadoc: 0. Declaration: 0. Console: 0. Debug: 0

```

SpringIntegration - SpringIntegrationApplication [Spring Boot App] D:\sources\Eclipse\sts-4.11.0.RELEASE\plugins\org.eclipse.justi.openjdkhotspotjre.full.win32.x86_64_16.0.1.v20210528-1205\jre\bin\java.exe
2021-08-07 12:16:44.502 INFO 19364 --- [nio-8090-exec-1] o.s.web.servlet.DispatcherServlet : Initializing Servlet 'dispatcherServlet'
2021-08-07 12:16:44.503 INFO 19364 --- [nio-8090-exec-1] o.s.web.servlet.DispatcherServlet : Completed initialization in 1 ms
2021-08-07 12:16:44.524 INFO 19364 --- [nio-8090-exec-1] o.s.i.h.s.MessagingMethodInvokerHelper : Overriding default instance of
MessageHandlerMethodFactory with provided one.
--- In WarehouseService
Order [ordernumber=001, amount=175]
2021-08-07 12:16:44.530 INFO 19364 --- [nio-8090-exec-1] o.s.i.h.s.MessagingMethodInvokerHelper : Overriding default instance of
MessageHandlerMethodFactory with provided one.
2021-08-07 12:16:44.530 INFO 19364 --- [nio-8090-exec-1] o.s.i.h.s.MessagingMethodInvokerHelper : Overriding default instance of
MessageHandlerMethodFactory with provided one.
--- Ordered: In Normal ShippingService
Order [ordernumber=001, amount=175]

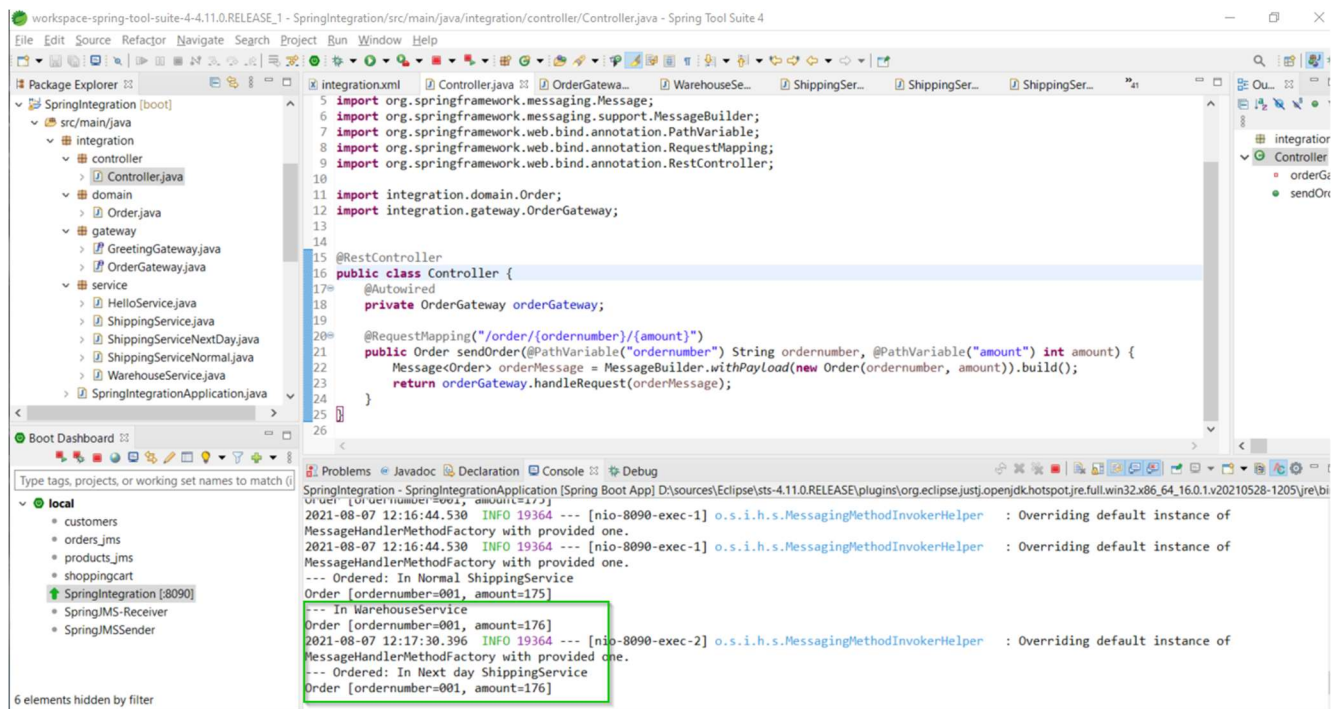
```

- Next day order:

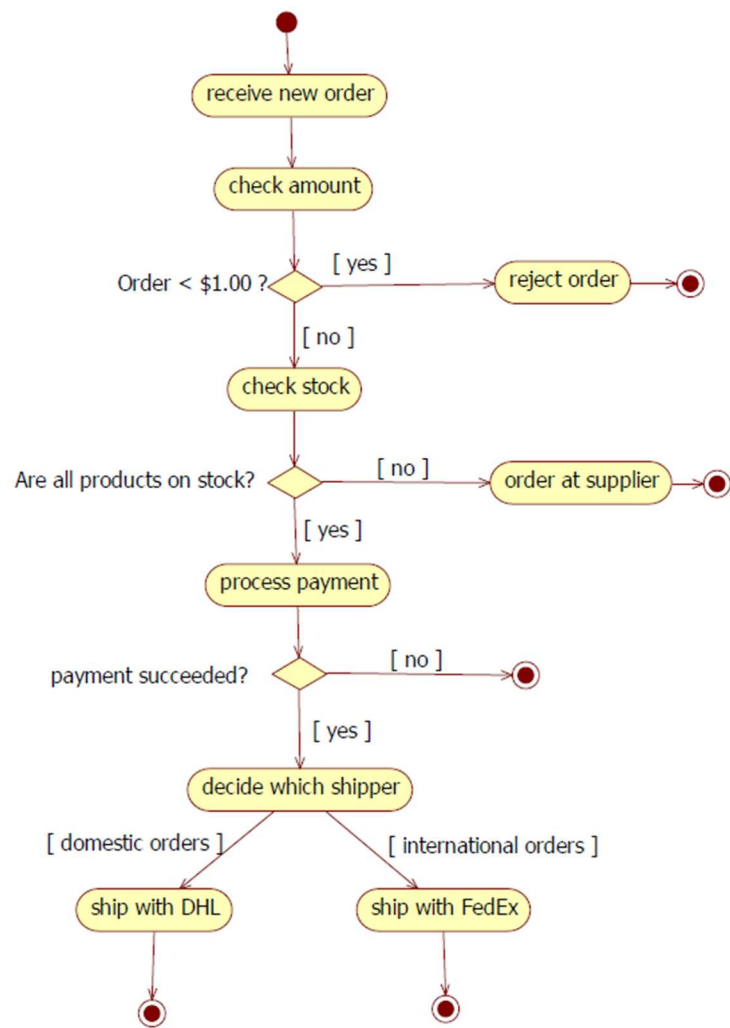
MUM Global Online Education : x localhost:8090/order/001/176 x Maven Repository: org.springframework x +

← → ↻ ⓘ localhost:8090/order/001/176

```
{ "ordernumber": "001", "amount": 176 }
```



Exercise 2: Develop application by below process and workflow:



Refer bellow project structures and attached sources

workspace-spring-tool-suite-4-4.11.0.RELEASE_1 - OrderServiceIntegration/src/main/resources/integration.xml - Spring Tool Suite 4

File Edit Source Refactor Navigate Search Project Run Design Window Help

Package Explorer

- src/main/java
 - integration
 - controller
 - OrderController.java
 - domain
 - Order.java
 - OrderLine.java
 - Product.java
 - Stock.java
 - gateway
 - OrderGateway.java
 - service
 - AmountFilter.java
 - OrderService.java
 - PaymentRouter.java
 - PaymentService.java
 - ShippingRouter.java
 - ShippingService.java
 - ShippingServiceDHL.java
 - ShippingServiceFedEx.java
 - StockRouter.java
 - StockService.java
 - SupplierService.java
 - src/main/resources
 - static
 - templates
 - application.properties
 - integration.xml
 - src/test/java

OrderController.java

```
<?xml version="1.0" encoding="UTF-8"?>
<beans:bean class="integration.service.ShippingRouter" />
</beans>

<filter input-channel="newOrder"
        output-channel="processOrderSuccess"
        ref="orderFilter"
        method="checkTotalPrice"
        discard-channel="processOrderFail"/>

<service-activator input-channel="processOrderSuccess"
                    ref="orderService"
                    method="handle" />

<service-activator input-channel="processOrderFail"
                    ref="orderService"
                    method="handleFail" />

<router method="route" input-channel="processOrderSuccess">
    <beans:bean class="integration.service.StockRouter" />
</router>

<service-activator input-channel="supplier"
                    ref="supplierService"
                    method="nprint"/>
```

Problems Javadoc Declaration Console Debug

OrderServiceIntegration - OrderServiceIntegrationApplication [Spring Boot App] D:\sources\Eclipse\sts-4.11.0.RELEASE\plugins\org.eclipse.justi.openjdk.hotspot.jre.full.win32.x86_64.16.0.1.v20210528-1205\jre\bin\java.exe (A...

```
2021-08-08 11:16:58.502 INFO 25052 --- [main] o.s.i.endpoint.EventDrivenConsumer : started bean 'org.springframework.integration.errorLogger'
2021-08-08 11:16:58.503 INFO 25052 --- [main] ProxyFactoryBean$MethodInvocationGateway : started bean 'orderGateway#handleRequest(Message)'
2021-08-08 11:16:58.504 INFO 25052 --- [main] o.s.i.gateway.GatewayProxyFactoryBean : started bean 'orderGateway'
2021-08-08 11:16:58.578 INFO 25052 --- [main] o.s.b.w.embedded.tomcat.TomcatWebServer : Tomcat started on port(s): 8090 (http) with context path ''
2021-08-08 11:16:58.592 INFO 25052 --- [main] i.OrderServiceIntegrationApplication : Started OrderServiceIntegrationApplication in 3.996 seconds

(JVM running for 5.214)

2021-08-08 11:17:06.122 INFO 25052 --- [nio-8090-exec-4] o.a.c.c.c.[Tomcat].[localhost].[/] : Initializing Spring DispatcherServlet 'dispatcherServlet'
2021-08-08 11:17:06.124 INFO 25052 --- [nio-8090-exec-4] o.s.web.servlet.DispatcherServlet : Initializing Servlet 'dispatcherServlet'
2021-08-08 11:17:06.127 INFO 25052 --- [nio-8090-exec-4] o.s.web.servlet.DispatcherServlet : Completed initialization in 2 ms
2021-08-08 11:17:36.644 INFO 25052 --- [nio-8090-exec-6] o.s.i.h.s.MessagingMethodInvokerHelper : Overriding default instance of MessageHandlerMethodFactory with provided one.
2021-08-08 11:17:36.671 INFO 25052 --- [nio-8090-exec-6] o.s.i.h.s.MessagingMethodInvokerHelper : Overriding default instance of MessageHandlerMethodFactory with provided one.
OrderService receiving order: Order [ordernumber=001, totalPrice=1600.0]
```

Boot Dashboard

Type tags, projects, or working set names to match (incl. * al

- * customers
- * orders_jms
- OrderServiceIntegration [8090]
- * products_jms

8 elements hidden by filter

integration.xml - OrderServiceIntegration/src/main/resources

Postman

File Edit View Help

Home Workspaces Reports Explore

Search Postman

My Workspace

New Import

SWA / Lab7 / Add Shipper

POST http://localhost:8090/orders/001/shipper/Mike

Params Authorization Headers (7) Body Pre-request Script Tests Settings

Query Params

KEY	VALUE	DESCRIPTION
Key	Value	Description

Body Cookies Headers (5) Test Results

Status: 200 OK Time: 5.06 s Size: 222 B Save Response

Pretty Raw Preview Visualize JSON

```
1
2  "orderNumber": "001",
3  "totalPrice": 1600.0,
4  "shipper": "Mike"
5
```



```

14 <channel id="newOrder"/>
15 <channel id="processOrderSuccess"/>
16 <channel id="processOrderFail"/>
17 <channel id="payment"/>
18 <channel id="supplier"/>
19 <channel id="paymentSuccess"/>
20 <channel id="paymentFail"/>
21 <channel id="shippingDHL"/>
22 <channel id="shippingFedEx"/>
23
24
25⊖ <router method="route" input-channel="paymentSuccess">
26     <beans:bean class="integration.service.ShippingRouter" />
27 </router>
28
29 <filter input-channel="newOrder"
30         output-channel="processOrderSuccess"
31         ref="orderfilter"
32         method="checkTotalPrice"
33         discard-channel="processOrderFail"/>
34
35 <service-activator input-channel="processOrderSuccess"
36                   ref="orderService"
37                   method="handle" />
38
39 <service-activator input-channel="processOrderFail"
40                   ref="orderService"
41                   method="handleFail" />
42
43⊖ <router method="route" input-channel="processOrderSuccess">
44     <beans:bean class="integration.service.StockRouter" />
45 </router>
46
47 <service-activator input-channel="supplier"
48                   ref="supplierService"
49                   method="print"/>
50
51 <service-activator input-channel="stock"
52                   ref="stockService"
53                   method="printStock"/>
54

```

```

54
55 <service-activator input-channel="payment"
56                   ref="paymentService"
57                   method="printPayment"/>
58
59⊖ <router method="route" input-channel="payment">
60     <beans:bean class="integration.service.PaymentRouter" />
61 </router>
62
63 <service-activator input-channel="paymentFail"
64                   ref="paymentService"
65                   method="printPaymentFail"/>
66
67⊖ <router method="route" input-channel="paymentSuccess">
68     <beans:bean class="integration.service.ShippingRouter" />
69 </router>
70
71 <service-activator input-channel="shippingFedEx"
72                   ref="shippingServiceFedEx"
73                   method="printOrder"/>
74
75 <service-activator input-channel="shippingDHL"
76                   ref="shippingServiceDHL"
77                   method="printOrder"/>
78
79 <beans:bean id="orderfilter" class="integration.service.AmountFilter"/>
80 <beans:bean id="orderService" class="integration.service.OrderService"/>
81 <beans:bean id="stockService" class="integration.service.StockService"/>
82 <beans:bean id="paymentService" class="integration.service.PaymentService"/>
83 <beans:bean id="supplierService" class="integration.service.SupplierService"/>
84 <beans:bean id="shippingServiceFedEx" class="integration.service.ShippingServiceFedEx"/>
85 <beans:bean id="shippingServiceDHL" class="integration.service.ShippingServiceDHL"/>
86
87 </beans:beans>
88

```