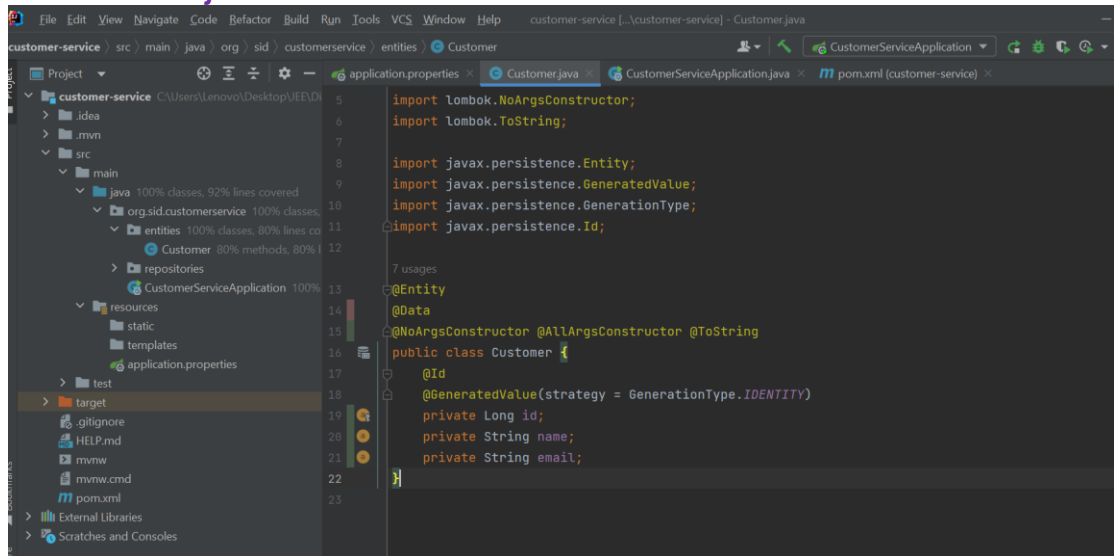


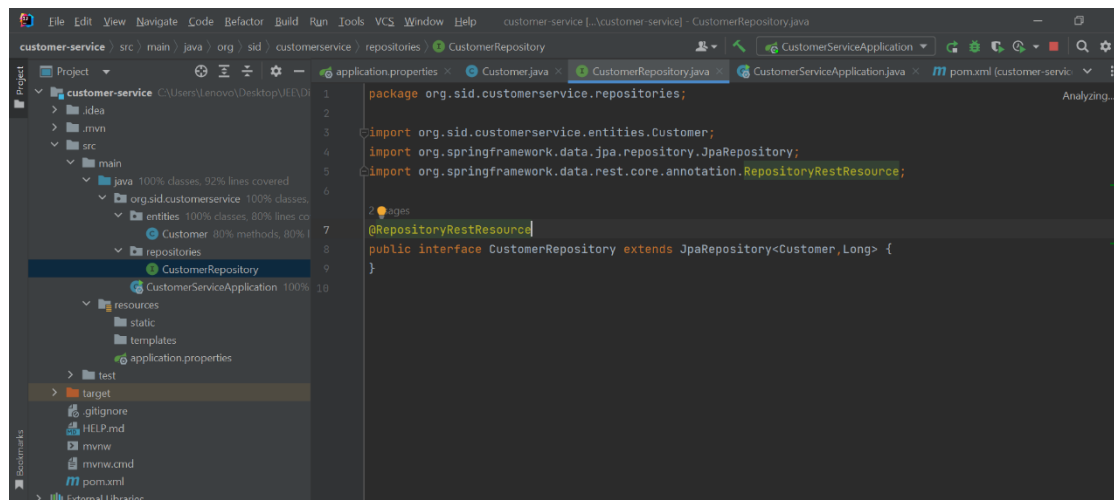
Architectures Micro-services avec Spring Cloud

I) Customer-service

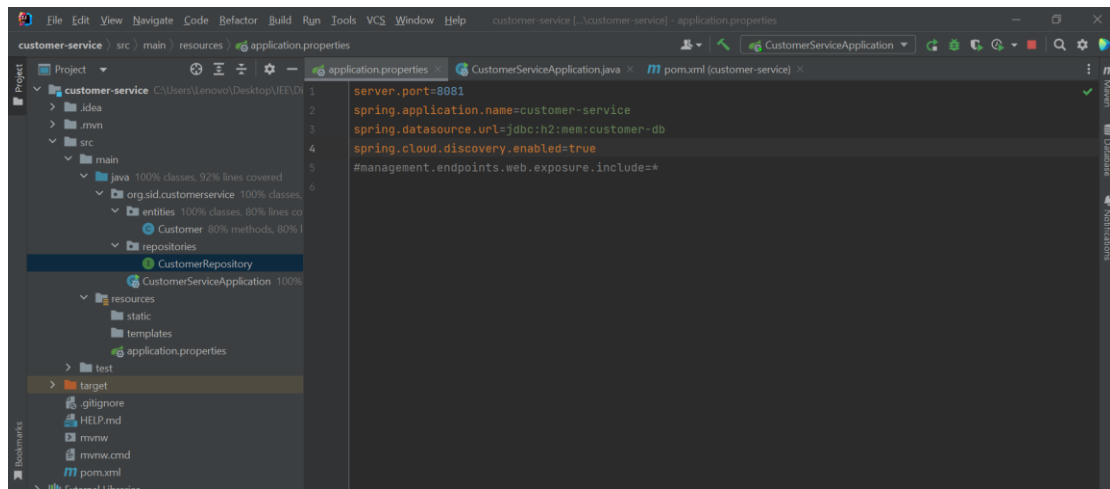
Customer.java



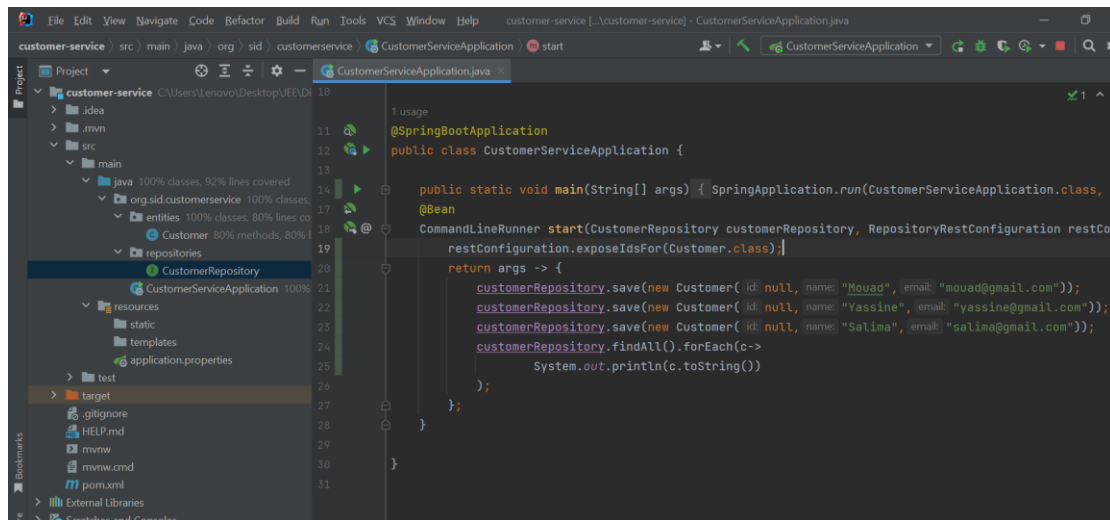
CustomerRepository.java



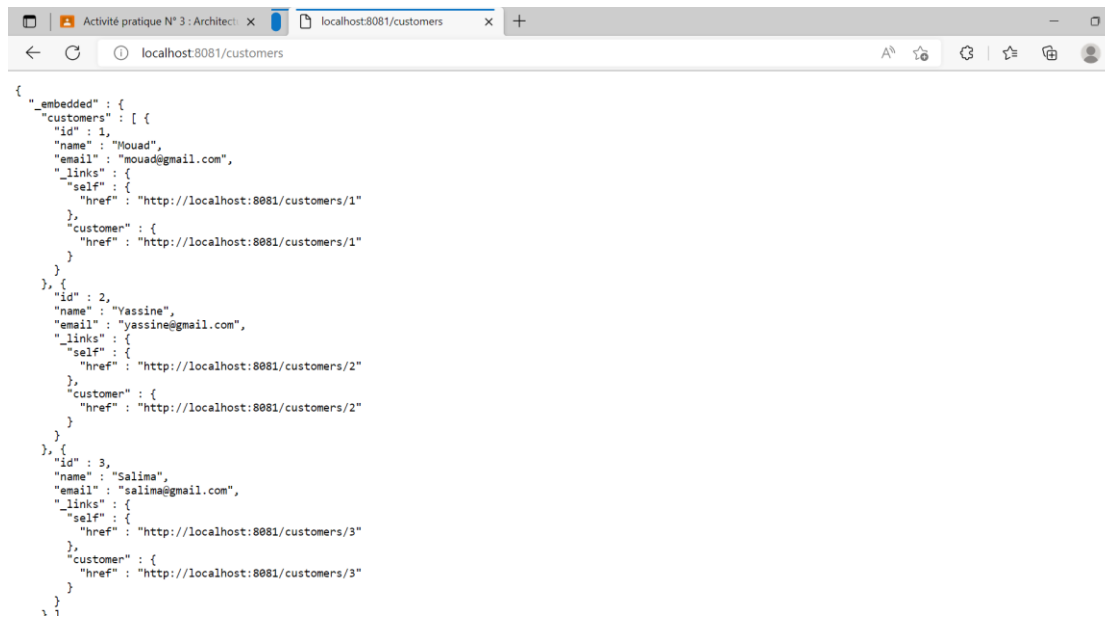
Application.properties



CustomersServiceApplication.java

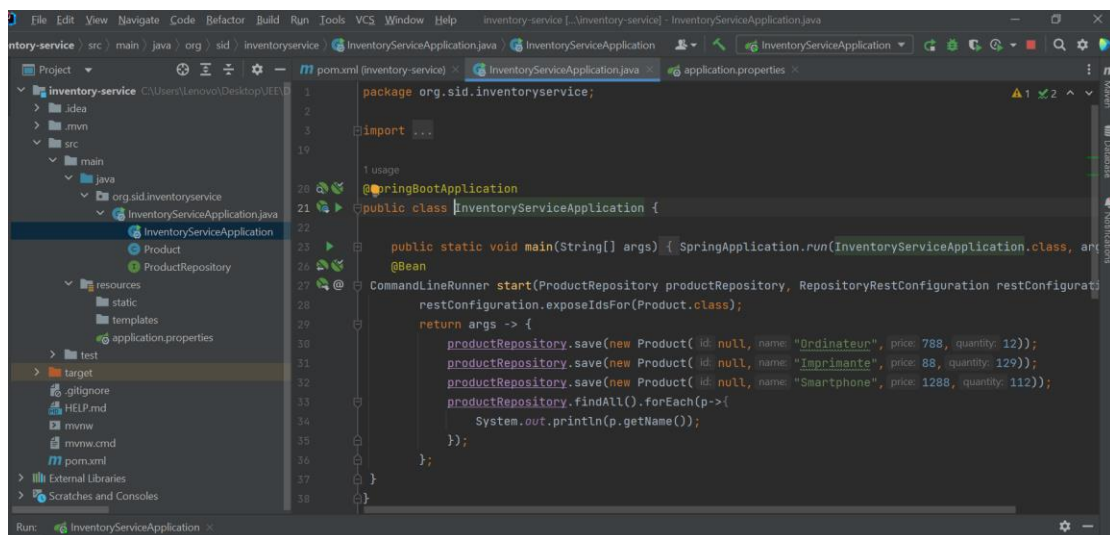


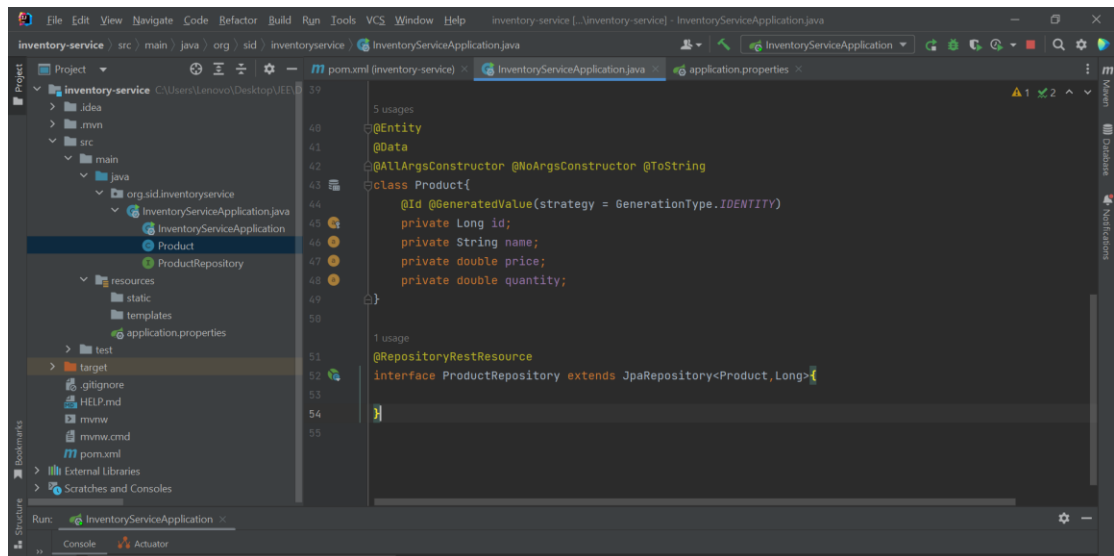
localhost :8081



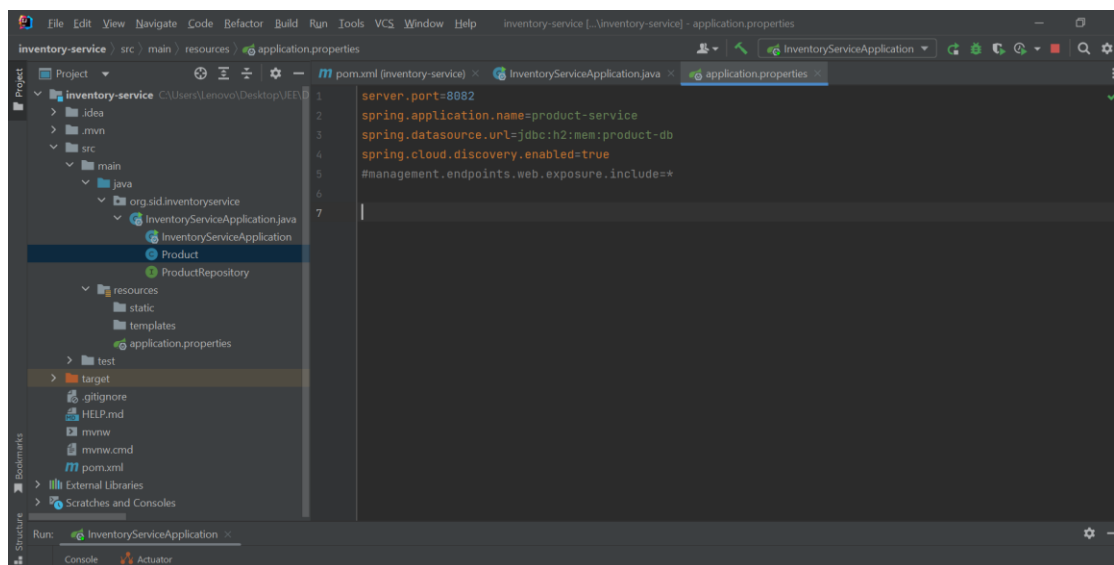
II) Inventory-Service

InventoryServiceApplication.java

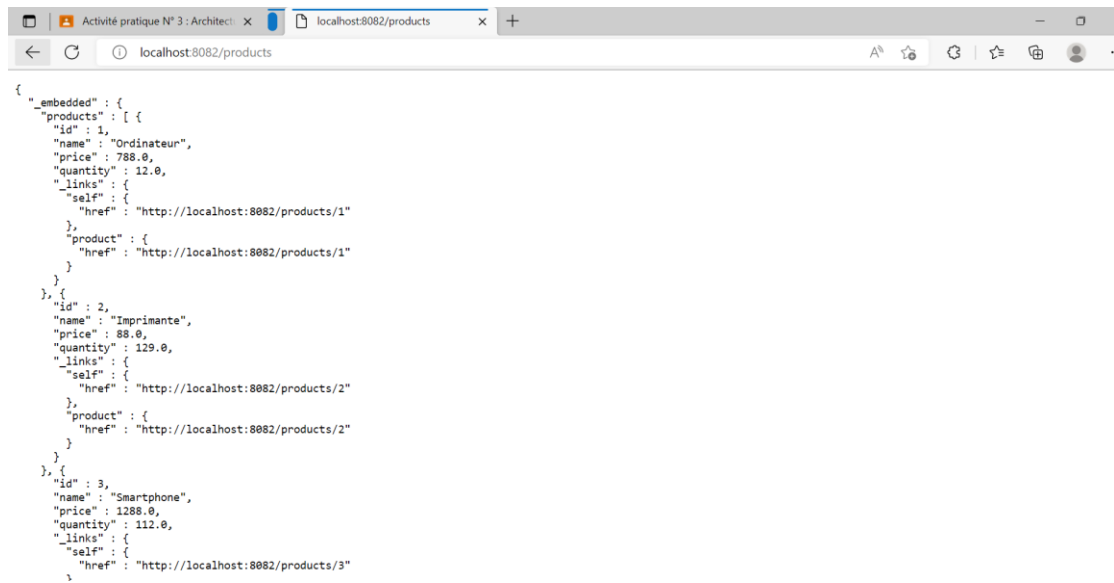




Application.properties



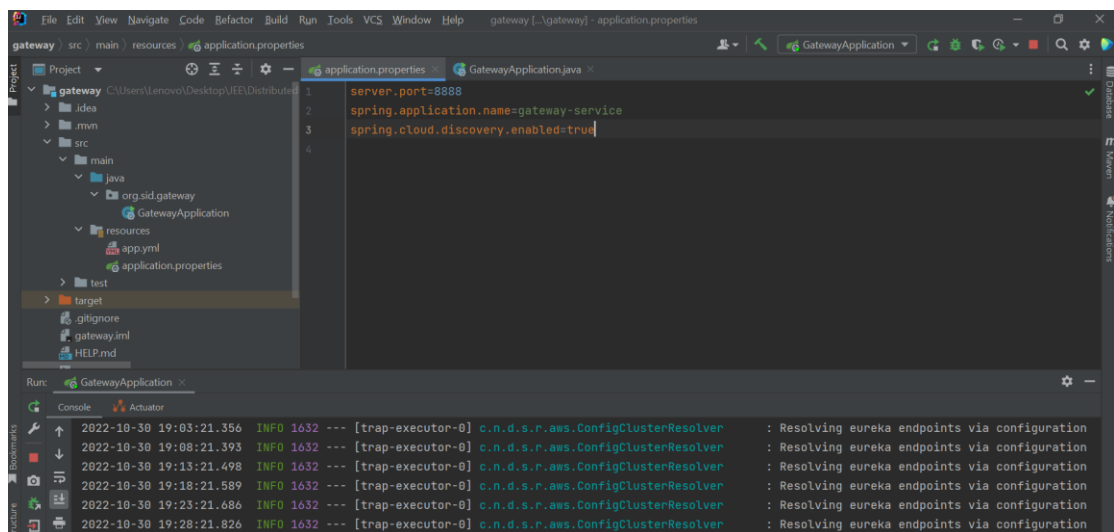
Localhost :8082



```
{
  "_embedded": {
    "products": [ {
      "id": 1,
      "name": "Ordinateur",
      "price": 788.0,
      "quantity": 12.0,
      "links": {
        "self": {
          "href": "http://localhost:8082/products/1"
        },
        "product": {
          "href": "http://localhost:8082/products/1"
        }
      }
    }, {
      "id": 2,
      "name": "Imprimante",
      "price": 88.0,
      "quantity": 129.0,
      "links": {
        "self": {
          "href": "http://localhost:8082/products/2"
        },
        "product": {
          "href": "http://localhost:8082/products/2"
        }
      }
    }, {
      "id": 3,
      "name": "Smartphone",
      "price": 1288.0,
      "quantity": 112.0,
      "links": {
        "self": {
          "href": "http://localhost:8082/products/3"
        }
      }
    }
  ]
}
```

III) GateWay

Application.properties



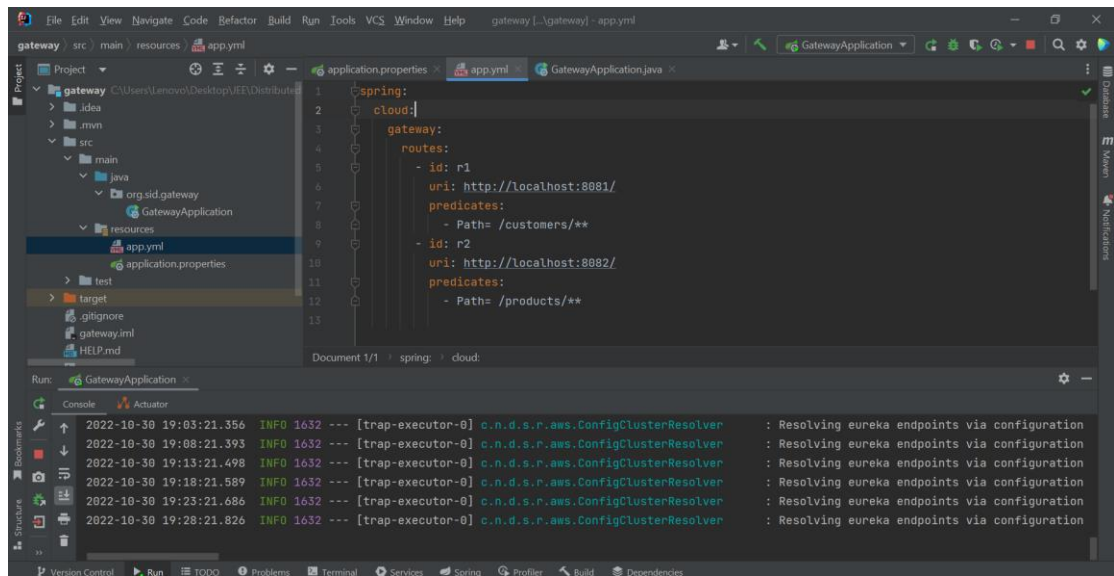
```
1 server.port=8888
2 spring.application.name=gateway-service
3 spring.cloud.discovery.enabled=true
4
```

Run: GatewayApplication

Console

```
2022-10-30 19:03:21.356 INFO 1632 --- [trap-executor-0] c.n.d.s.r.aws.ConfigClusterResolver : Resolving eureka endpoints via configuration
2022-10-30 19:08:21.393 INFO 1632 --- [trap-executor-0] c.n.d.s.r.aws.ConfigClusterResolver : Resolving eureka endpoints via configuration
2022-10-30 19:13:21.498 INFO 1632 --- [trap-executor-0] c.n.d.s.r.aws.ConfigClusterResolver : Resolving eureka endpoints via configuration
2022-10-30 19:18:21.589 INFO 1632 --- [trap-executor-0] c.n.d.s.r.aws.ConfigClusterResolver : Resolving eureka endpoints via configuration
2022-10-30 19:23:21.686 INFO 1632 --- [trap-executor-0] c.n.d.s.r.aws.ConfigClusterResolver : Resolving eureka endpoints via configuration
2022-10-30 19:28:21.826 INFO 1632 --- [trap-executor-0] c.n.d.s.r.aws.ConfigClusterResolver : Resolving eureka endpoints via configuration
```

App.yml



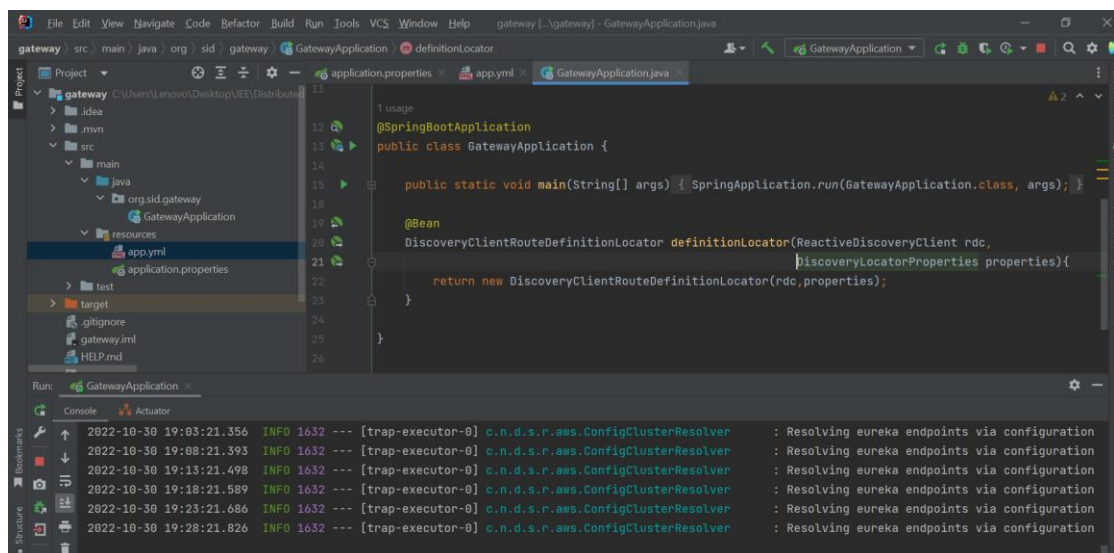
The screenshot shows an IDE window with the file `app.yml` open. The file content is as follows:

```
1 spring:
2   cloud:
3     gateway:
4       routes:
5         - id: r1
6           uri: http://localhost:8081/
7           predicates:
8             - Path= /customers/**
9         - id: r2
10          uri: http://localhost:8082/
11          predicates:
12            - Path= /products/**
13
```

The Run console shows the following logs:

```
2022-10-30 19:03:21.356 INFO 1632 --- [trap-executor-0] c.n.d.s.r.aws.ConfigClusterResolver : Resolving eureka endpoints via configuration
2022-10-30 19:08:21.393 INFO 1632 --- [trap-executor-0] c.n.d.s.r.aws.ConfigClusterResolver : Resolving eureka endpoints via configuration
2022-10-30 19:13:21.498 INFO 1632 --- [trap-executor-0] c.n.d.s.r.aws.ConfigClusterResolver : Resolving eureka endpoints via configuration
2022-10-30 19:18:21.589 INFO 1632 --- [trap-executor-0] c.n.d.s.r.aws.ConfigClusterResolver : Resolving eureka endpoints via configuration
2022-10-30 19:23:21.686 INFO 1632 --- [trap-executor-0] c.n.d.s.r.aws.ConfigClusterResolver : Resolving eureka endpoints via configuration
2022-10-30 19:28:21.826 INFO 1632 --- [trap-executor-0] c.n.d.s.r.aws.ConfigClusterResolver : Resolving eureka endpoints via configuration
```

GatewayApplication.java



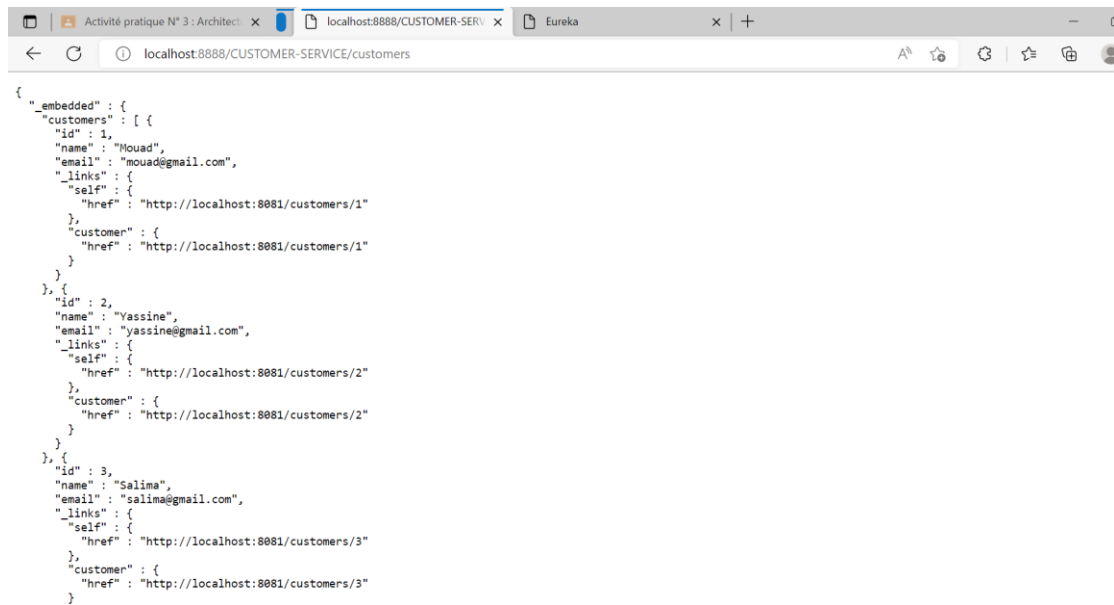
The screenshot shows an IDE window with the file `GatewayApplication.java` open. The file content is as follows:

```
11 1 usage
12 @SpringBootApplication
13 public class GatewayApplication {
14
15     public static void main(String[] args) { SpringApplication.run(GatewayApplication.class, args); }
16
17     @Bean
18     DiscoveryClientRouteDefinitionLocator definitionLocator(ReactiveDiscoveryClient rdc,
19                                                         DiscoveryLocatorProperties properties){
20         return new DiscoveryClientRouteDefinitionLocator(rdc, properties);
21     }
22
23 }
24
25
26
```

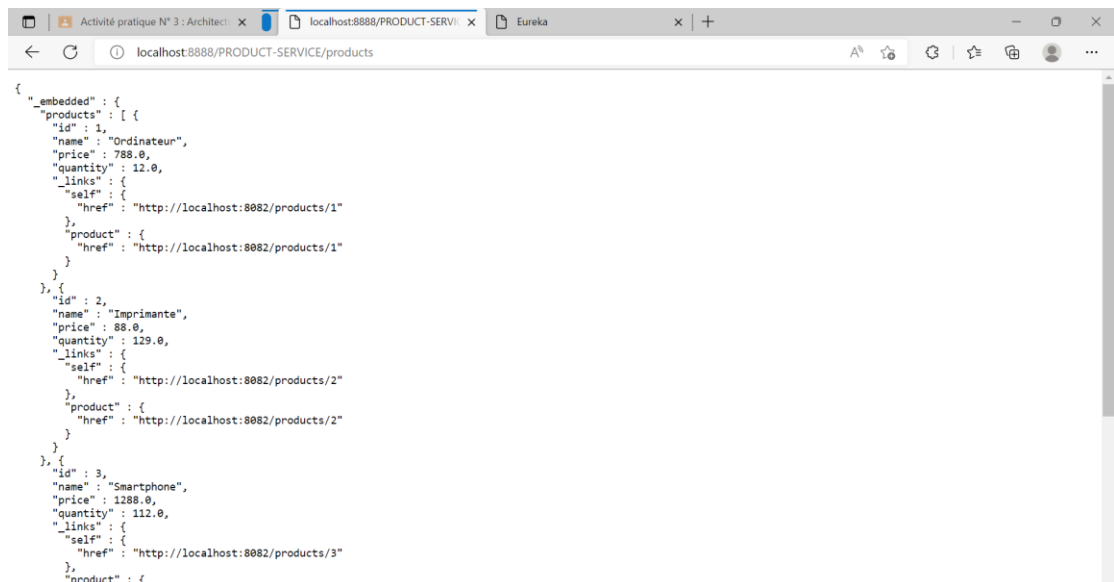
The Run console shows the following logs:

```
2022-10-30 19:03:21.356 INFO 1632 --- [trap-executor-0] c.n.d.s.r.aws.ConfigClusterResolver : Resolving eureka endpoints via configuration
2022-10-30 19:08:21.393 INFO 1632 --- [trap-executor-0] c.n.d.s.r.aws.ConfigClusterResolver : Resolving eureka endpoints via configuration
2022-10-30 19:13:21.498 INFO 1632 --- [trap-executor-0] c.n.d.s.r.aws.ConfigClusterResolver : Resolving eureka endpoints via configuration
2022-10-30 19:18:21.589 INFO 1632 --- [trap-executor-0] c.n.d.s.r.aws.ConfigClusterResolver : Resolving eureka endpoints via configuration
2022-10-30 19:23:21.686 INFO 1632 --- [trap-executor-0] c.n.d.s.r.aws.ConfigClusterResolver : Resolving eureka endpoints via configuration
2022-10-30 19:28:21.826 INFO 1632 --- [trap-executor-0] c.n.d.s.r.aws.ConfigClusterResolver : Resolving eureka endpoints via configuration
```

Localhost :8888



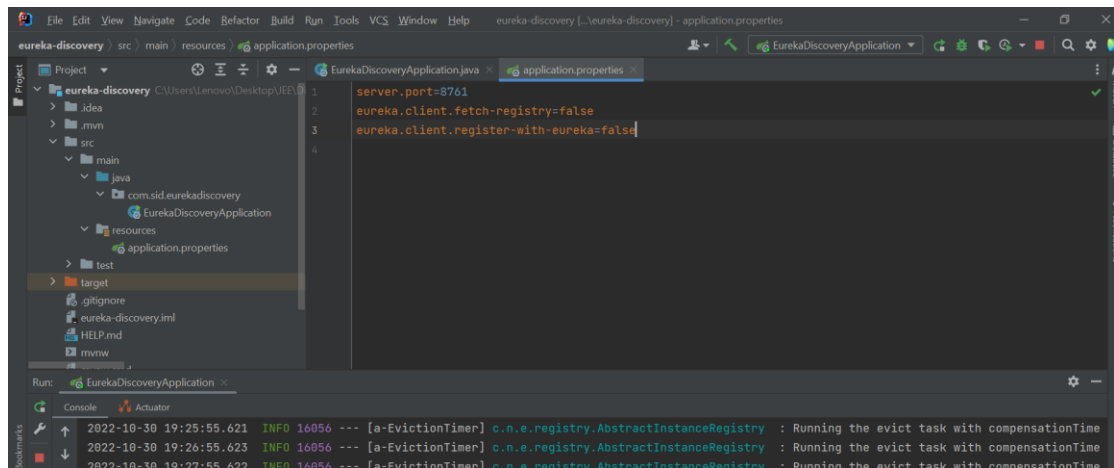
```
{
  "_embedded": {
    "customers": [ {
      "id": 1,
      "name": "Mouad",
      "email": "mouad@gmail.com",
      "_links": {
        "self": {
          "href": "http://localhost:8081/customers/1"
        },
        "customer": {
          "href": "http://localhost:8081/customers/1"
        }
      }
    }, {
      "id": 2,
      "name": "Yassine",
      "email": "yassine@gmail.com",
      "_links": {
        "self": {
          "href": "http://localhost:8081/customers/2"
        },
        "customer": {
          "href": "http://localhost:8081/customers/2"
        }
      }
    }, {
      "id": 3,
      "name": "Salima",
      "email": "salima@gmail.com",
      "_links": {
        "self": {
          "href": "http://localhost:8081/customers/3"
        },
        "customer": {
          "href": "http://localhost:8081/customers/3"
        }
      }
    }
  ]
}
```



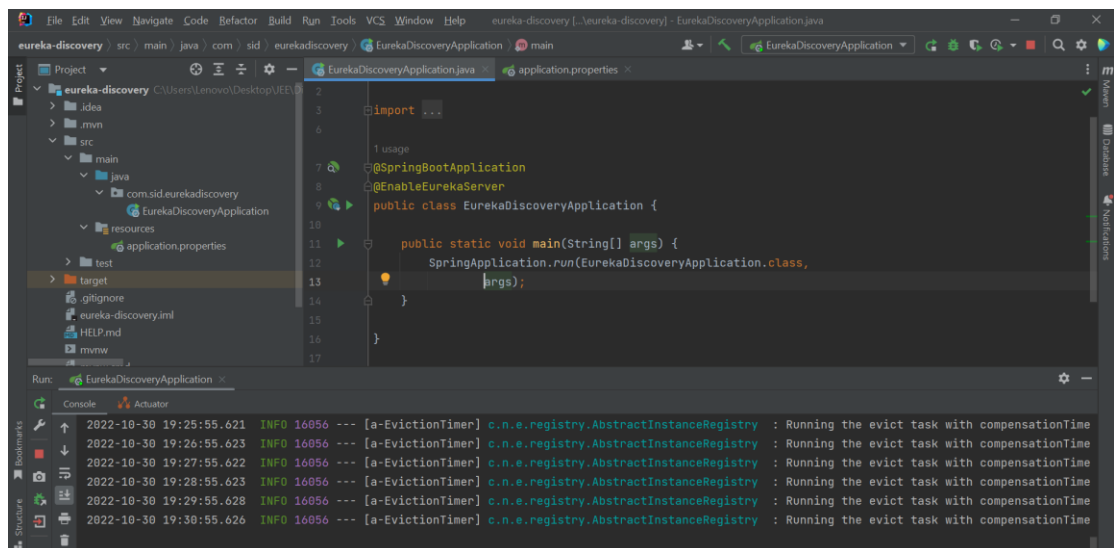
```
{
  "_embedded": {
    "products": [ {
      "id": 1,
      "name": "Ordinateur",
      "price": 788.0,
      "quantity": 12.0,
      "_links": {
        "self": {
          "href": "http://localhost:8082/products/1"
        },
        "product": {
          "href": "http://localhost:8082/products/1"
        }
      }
    }, {
      "id": 2,
      "name": "Imprimante",
      "price": 88.0,
      "quantity": 129.0,
      "_links": {
        "self": {
          "href": "http://localhost:8082/products/2"
        },
        "product": {
          "href": "http://localhost:8082/products/2"
        }
      }
    }, {
      "id": 3,
      "name": "Smartphone",
      "price": 1288.0,
      "quantity": 112.0,
      "_links": {
        "self": {
          "href": "http://localhost:8082/products/3"
        },
        "product": {
          "href": "http://localhost:8082/products/3"
        }
      }
    }
  ]
}
```

IV) Eureka-Discovery

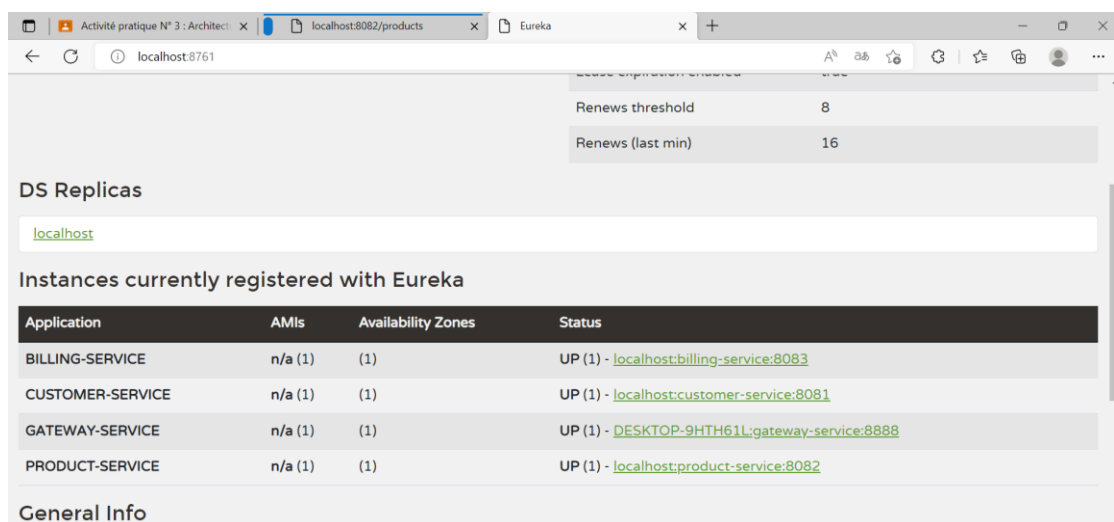
Application.properties



EurekaDiscoveryApplication.java

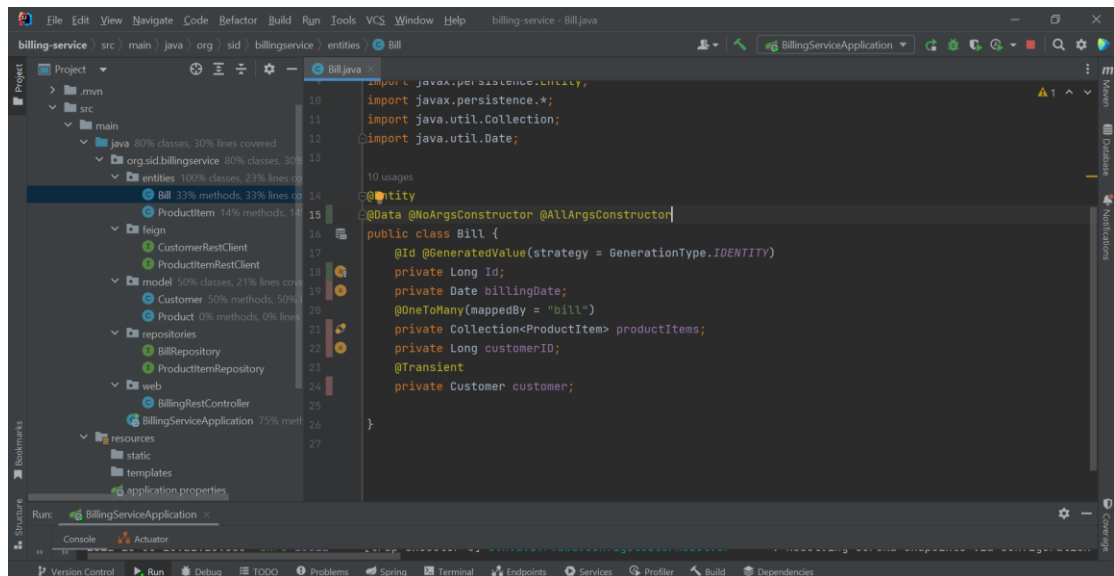


localhost :8761

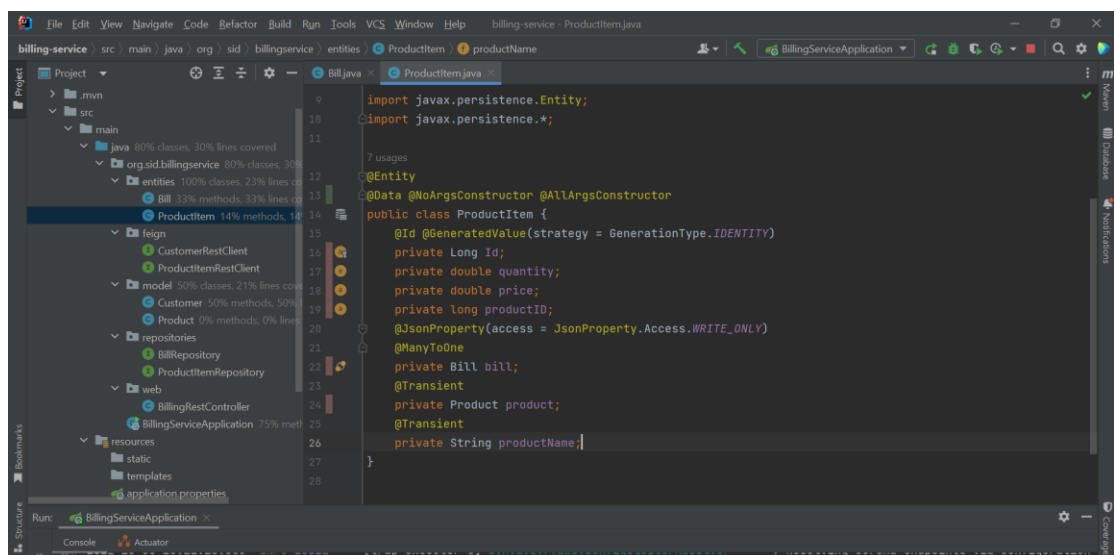


V) Billing-Service

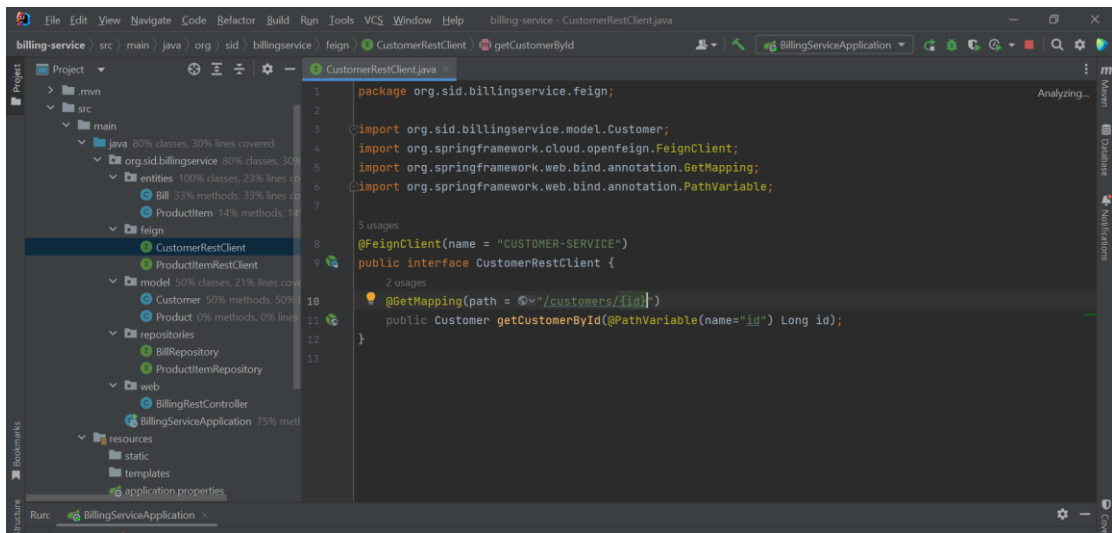
Bill.java



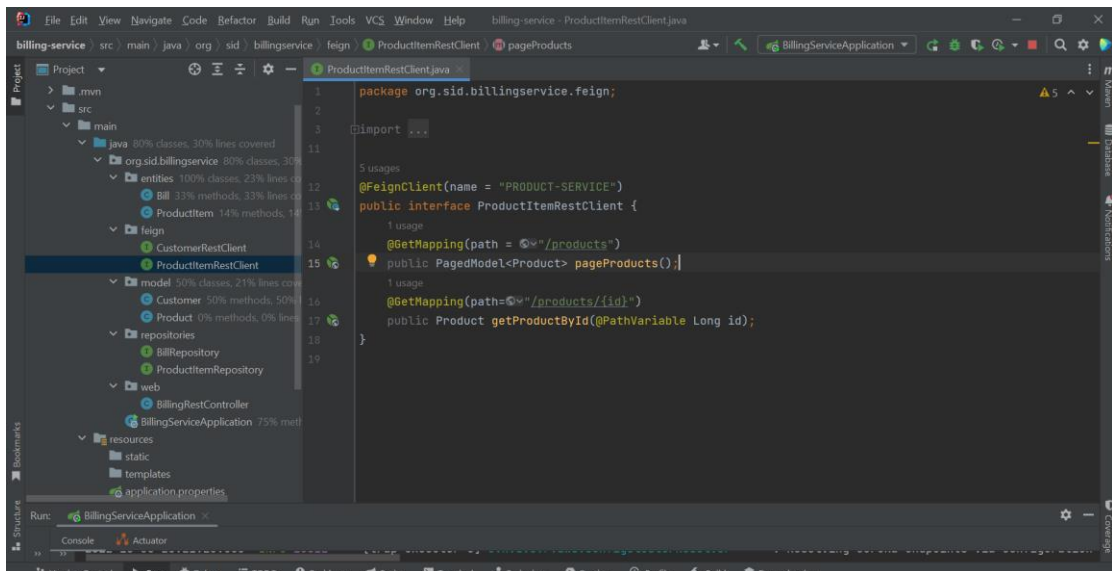
ProductItem.java



CustomerRestClient.java

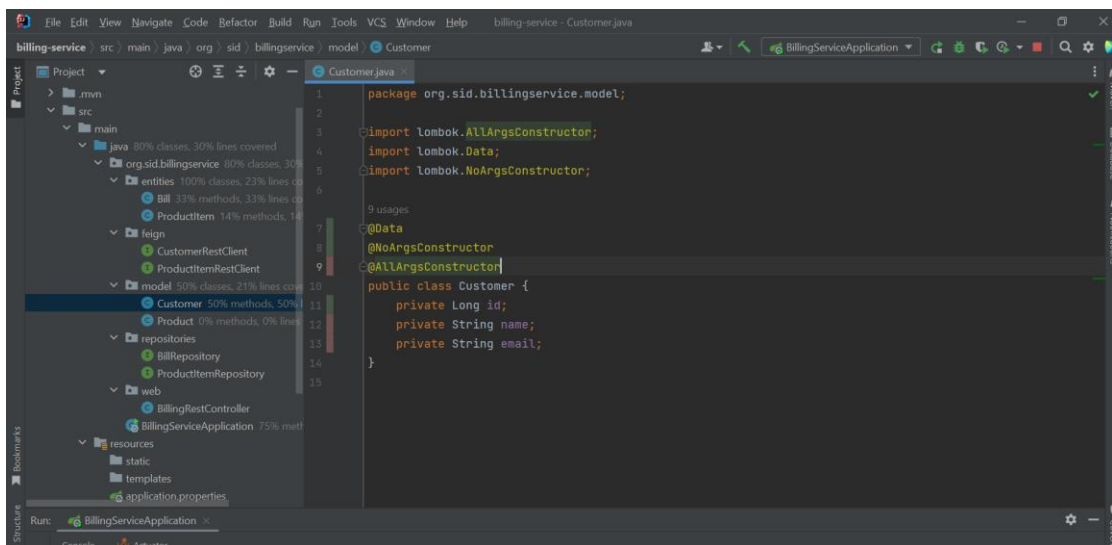


```
1 package org.sid.billing.service.feign;
2
3 import org.sid.billing.service.model.Customer;
4 import org.springframework.cloud.openfeign.FeignClient;
5 import org.springframework.web.bind.annotation.GetMapping;
6 import org.springframework.web.bind.annotation.PathVariable;
7
8 @FeignClient(name = "CUSTOMER-SERVICE")
9 public interface CustomerRestClient {
10     @GetMapping(path = "/customers/{id}")
11     public Customer getCustomerById(@PathVariable(name="id") Long id);
12 }
13
```



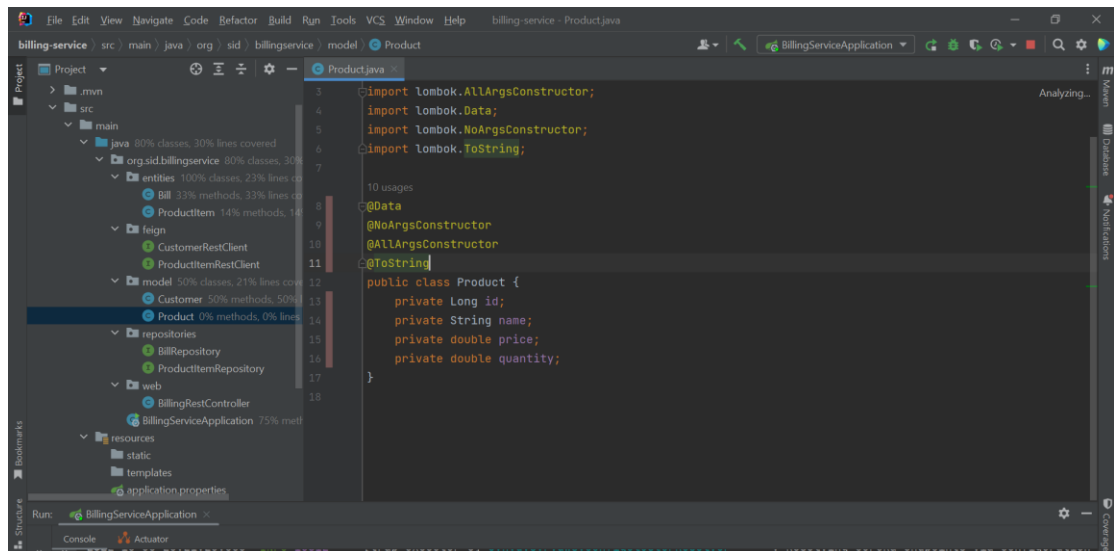
```
1 package org.sid.billing.service.feign;
2
3 import org.sid.billing.service.model.Product;
4 import org.springframework.cloud.openfeign.FeignClient;
5 import org.springframework.web.bind.annotation.GetMapping;
6 import org.springframework.web.bind.annotation.PathVariable;
7
8 @FeignClient(name = "PRODUCT-SERVICE")
9 public interface ProductItemRestClient {
10     @GetMapping(path = "/products/{id}")
11     public Product getProductById(@PathVariable Long id);
12 }
13
```

Customer.java

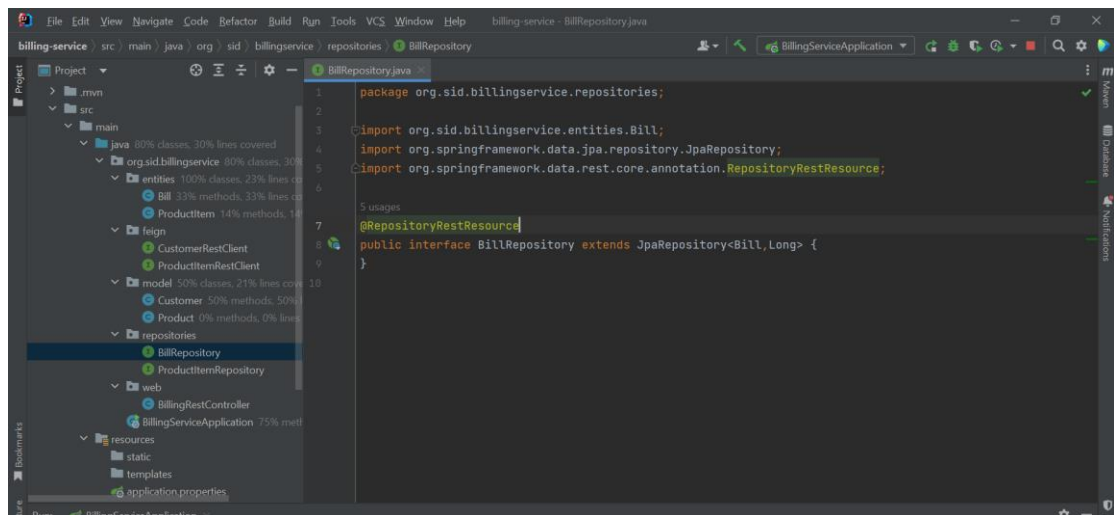


```
1 package org.sid.billing.service.model;
2
3 import lombok.AllArgsConstructor;
4 import lombok.Data;
5 import lombok.NoArgsConstructor;
6
7 @Data
8 @NoArgsConstructor
9 @AllArgsConstructor
10 public class Customer {
11     private Long id;
12     private String name;
13     private String email;
14 }
15
```

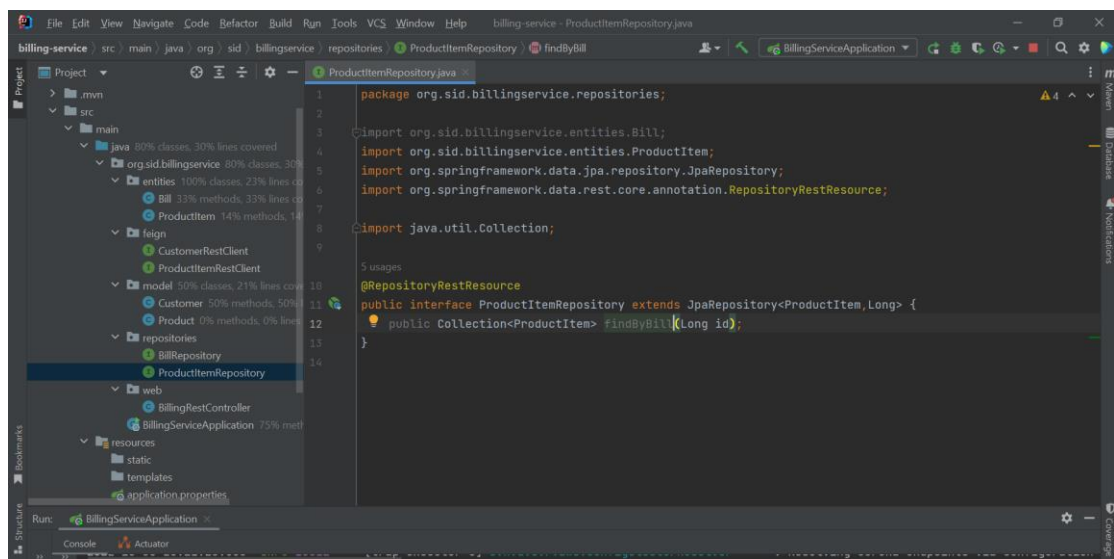
Product.java



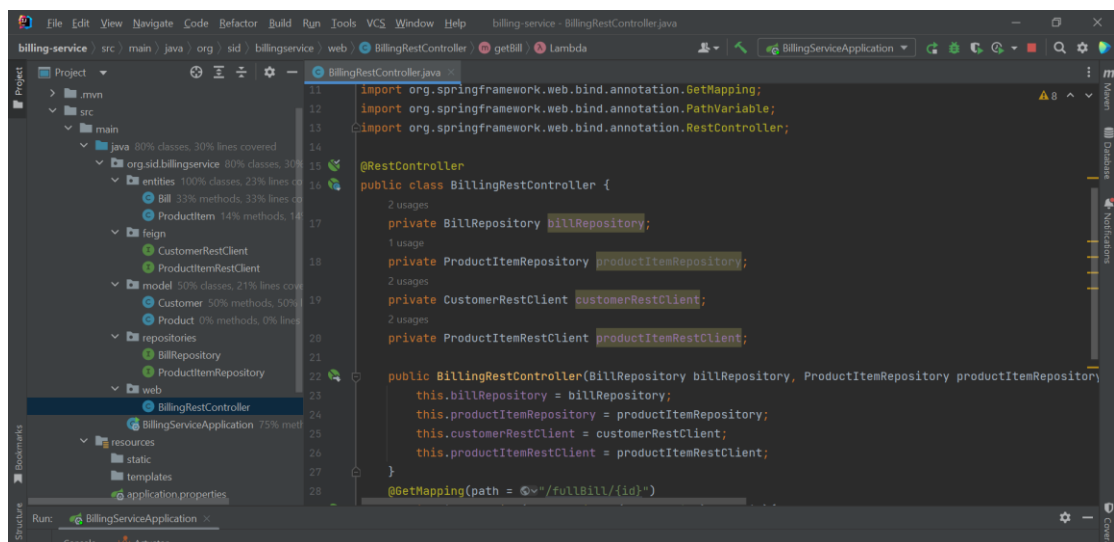
BillRepository.java

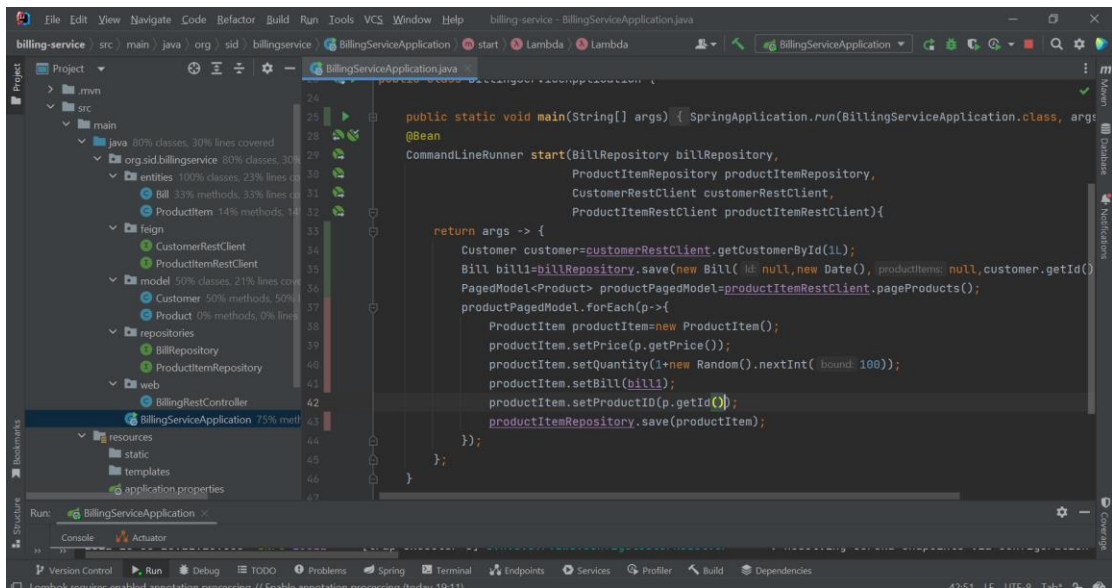


ProductItemRepository

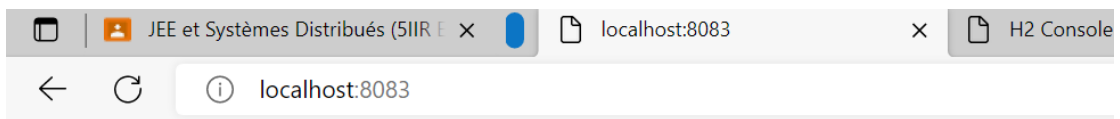
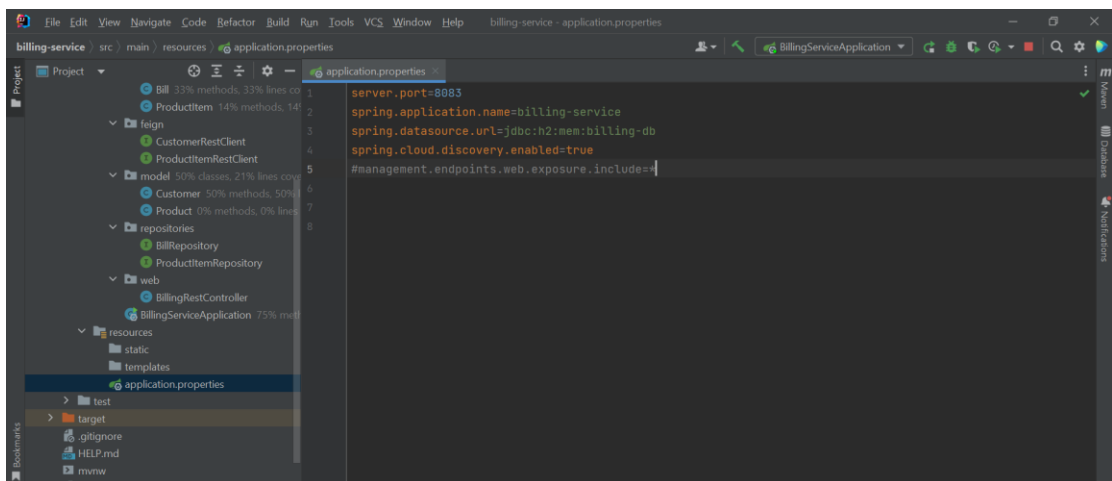


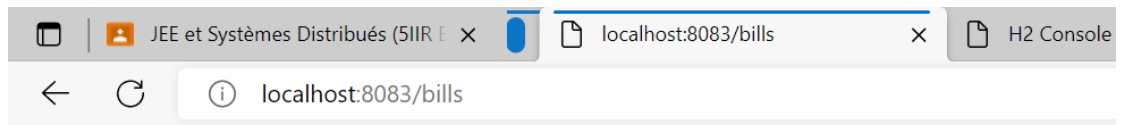
BillingRestController.java



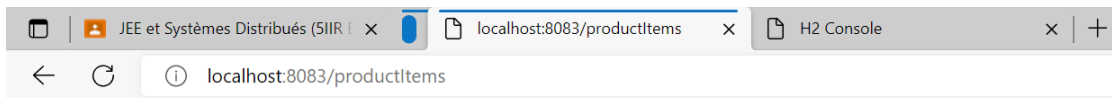


Application.properties

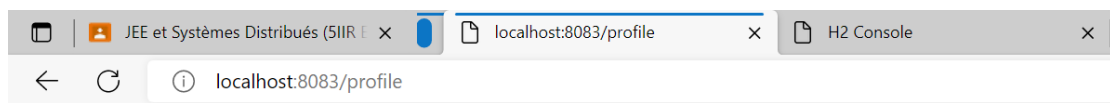




```
{
  "_embedded" : {
    "bills" : [ {
      "billingDate" : "2022-10-31T00:48:11.385+00:00",
      "customerID" : 1,
      "customer" : null,
      "id" : 1,
      "_links" : {
        "self" : {
          "href" : "http://localhost:8083/bills/1"
        },
        "bill" : {
          "href" : "http://localhost:8083/bills/1"
        },
        "productItems" : {
          "href" : "http://localhost:8083/bills/1/productItems"
        }
      }
    }
  ]
},
  "_links" : {
    "self" : {
      "href" : "http://localhost:8083/bills"
    },
    "profile" : {
      "href" : "http://localhost:8083/profile/bills"
    }
  },
  "page" : {
    "size" : 20,
    "totalElements" : 1,
    "totalPages" : 1,
    "number" : 0
  }
}
```



```
{
  "_embedded": {
    "productItems": [ {
      "quantity": 91.0,
      "price": 788.0,
      "productID": 1,
      "product": null,
      "productName": null,
      "id": 1,
      "_links": {
        "self": {
          "href": "http://localhost:8083/productItems/1"
        },
        "productItem": {
          "href": "http://localhost:8083/productItems/1"
        },
        "bill": {
          "href": "http://localhost:8083/productItems/1/bill"
        }
      }
    }, {
      "quantity": 4.0,
      "price": 88.0,
      "productID": 2,
      "product": null,
      "productName": null,
      "id": 2,
      "_links": {
        "self": {
          "href": "http://localhost:8083/productItems/2"
        },
        "productItem": {
          "href": "http://localhost:8083/productItems/2"
        },
        "bill": {
          "href": "http://localhost:8083/productItems/2/bill"
        }
      }
    }
  ]
}
```



```
{
  "_links": {
    "self": {
      "href": "http://localhost:8083/profile"
    },
    "bills": {
      "href": "http://localhost:8083/profile/bills"
    },
    "productItems": {
      "href": "http://localhost:8083/profile/productItems"
    }
  }
}
```

