Table of Content

Get the shopping cart info

In Scope

get current shopping cart from backend and display shopping cart info: price, amount for each product, total of the products

Out of Scope

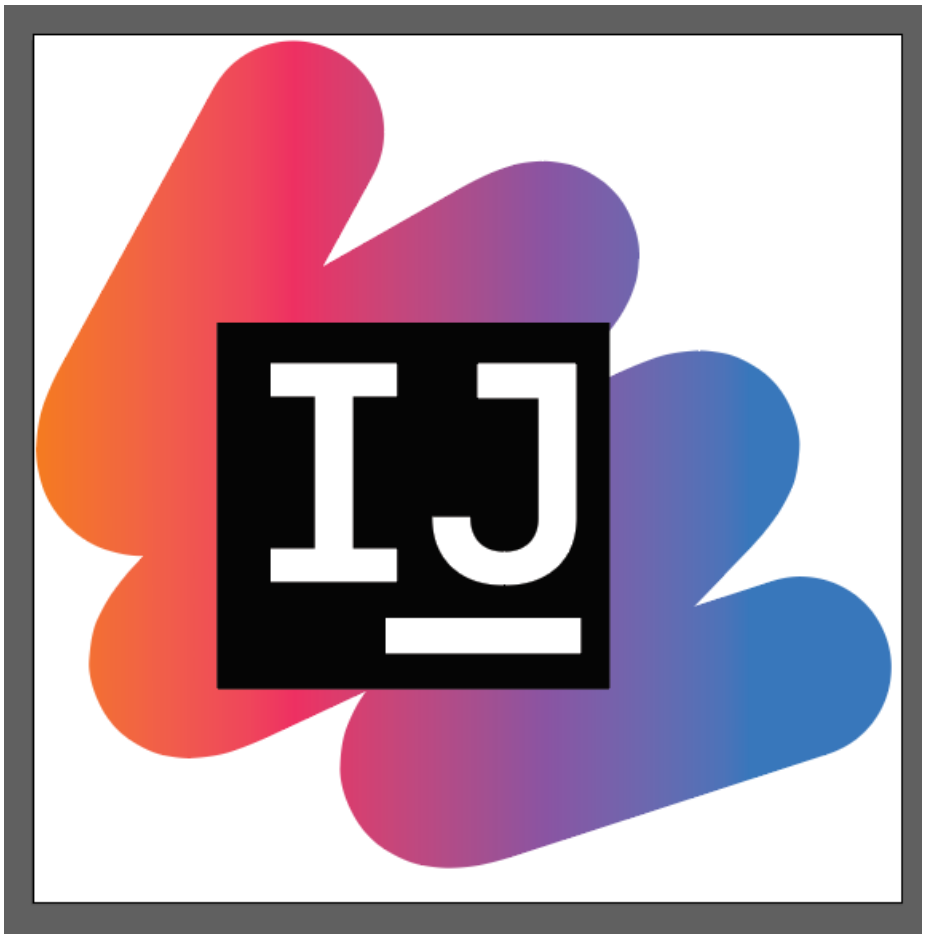
- product info is getting from the external system

AC 1

when i am a customer, i can see a message saying 'Your shopping cart is empty' when i haven't add any products, so that i can add more products

Example William is reviewing his shopping cart without adding any product

Mockup



Flow 1-1 render empty shopping cart

- **Complexity**: MEDIUM - about **60** minutes

Processes

- **Process 1-1 | Web.UiComponent** add 'ShoppingCart' page add 'shopping cart' icon in menu which can redirect user to 'Shopping Cart' page click 'shopping cart' and entering the 'Shopping Cart' page

  ```
  interface ShoppingCartProps {
  ```

```
    items: ProductDto[]
}
```

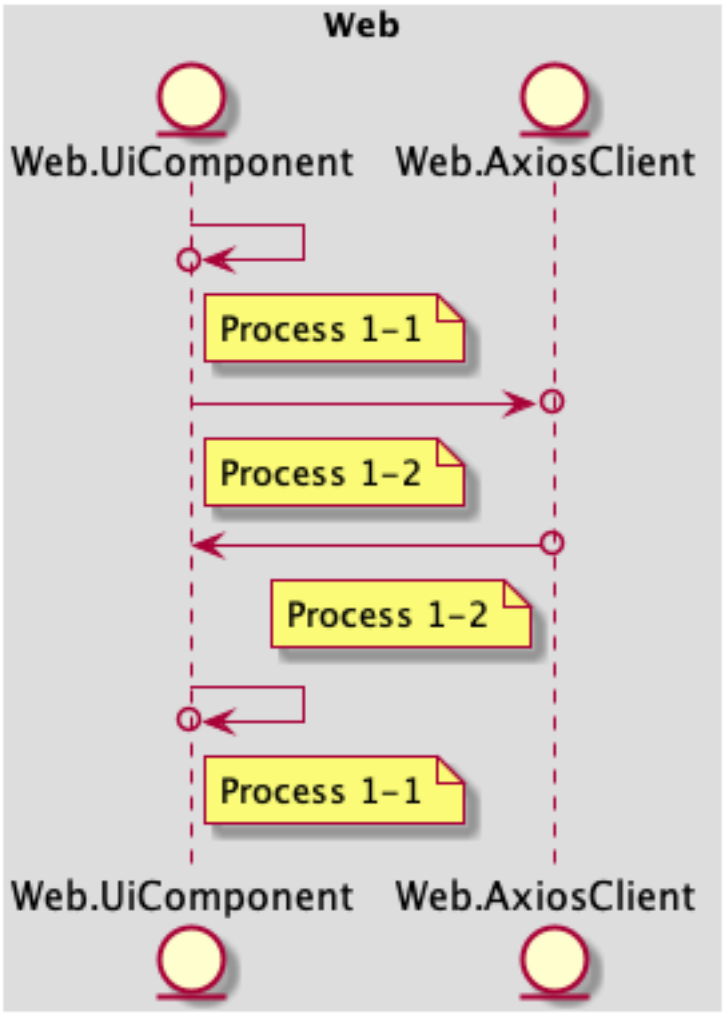
- **Process 1-2 | Web.UiComponent -> Mock<Web.AxiosClient>** call the api

  Web.UiComponent -> Mock<Web.AxiosClient> return empty object

---

- **Process 1-1 | Web.UiComponent** display message 'Your shopping cart is empty!'

Sequence Diagram



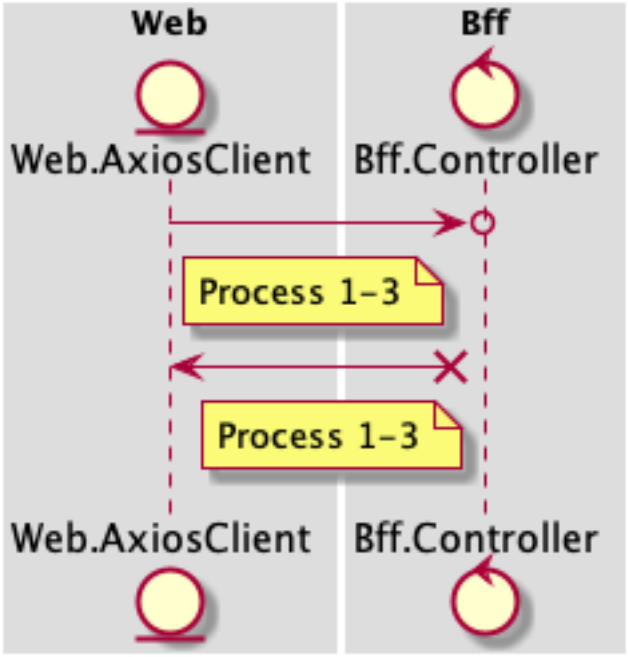
Flow 1-2 call bff api

- **Complexity**: SMALL - about **30** minutes

Processes

- **Process 1-3 | Web.AxiosClient -> Fake<Bff.Controller>** > GET /shoppingCart
  Web.AxiosClient -> Fake<Bff.Controller> < 404 NOT_FOUND

Sequence Diagram



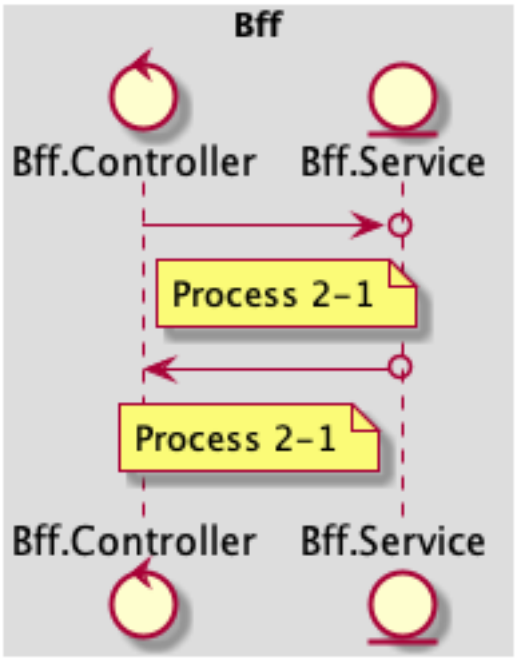
Flow 1-3 call service to get dto

- **Complexity**: SMALL - about **30** minutes

Processes

- **Process 2-1 | Bff.Controller -> Mock<Bff.Service>** retrieve user id from authentication header
  Bff.Controller -> Mock<Bff.Service> throw not found exception and respond with 404

Sequence Diagram



Flow 1-4 call feign client to get dto

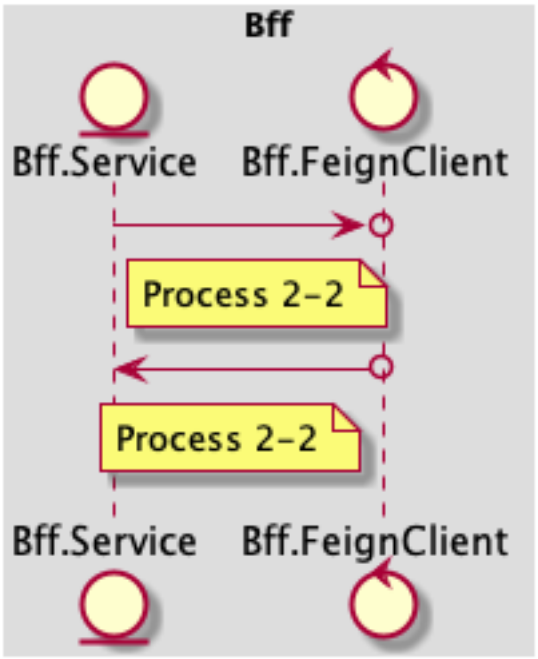
- **Complexity**: SMALL - about **30** minutes

Processes

- **Process 2-2 | Bff.Service -> Mock<Bff.FeignClient>** call feign client with user id
  Bff.Service -> Mock<Bff.FeignClient> throw not found exception

---

Sequence Diagram



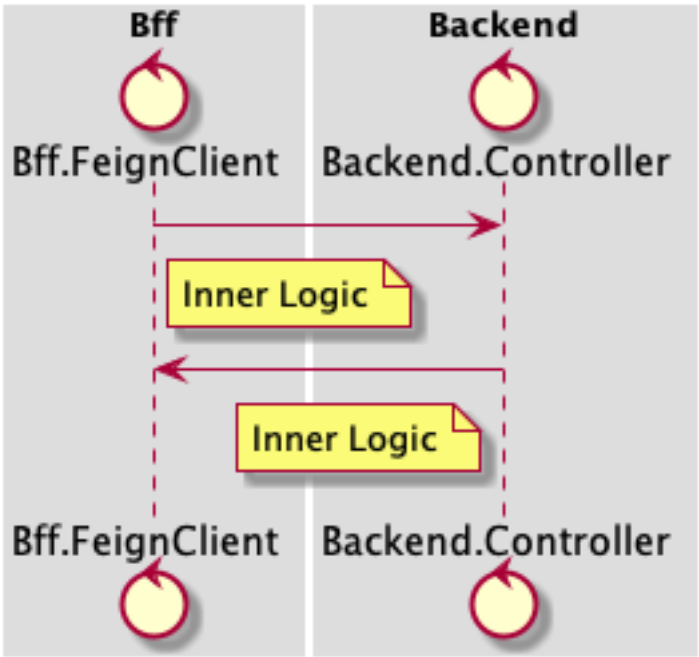
Flow 1-5 call backend to get dto

- **Complexity**: SMALL - about **30** minutes

Processes

- **Inner Logic | Bff.FeignClient** > GET /shoppingCart < 404 NOT_FOUND

Sequence Diagram



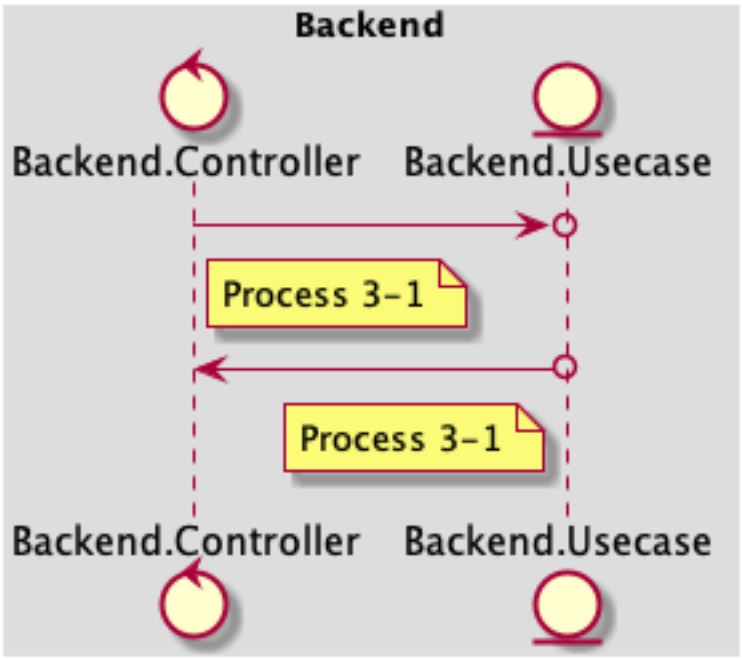
Flow 1-6 call usecase

- **Complexity**: MEDIUM - about **60** minutes

Processes

- **Process 3-1 | Backend.Controller -> Mock<Backend.Usecase>** call usecase to find the shopping cart by user id
  Backend.Controller -> Mock<Backend.Usecase> throw not found exception and respond with 404

Sequence Diagram



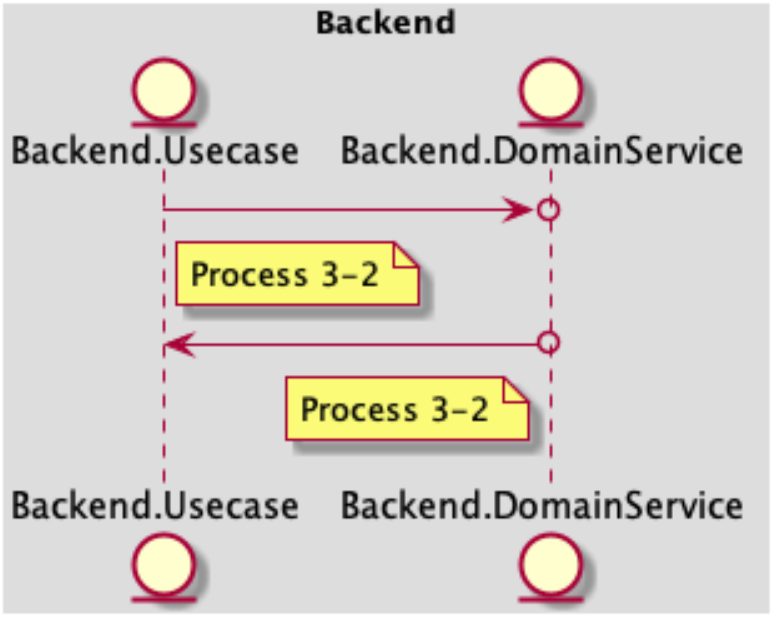
Flow 1-7 call domain service

- **Complexity**: SMALL - about **30** minutes

Processes

- **Process 3-2 | Backend.Usecase -> Mock<Backend.DomainService>**
  Backend.Usecase -> Mock<Backend.DomainService>

Sequence Diagram



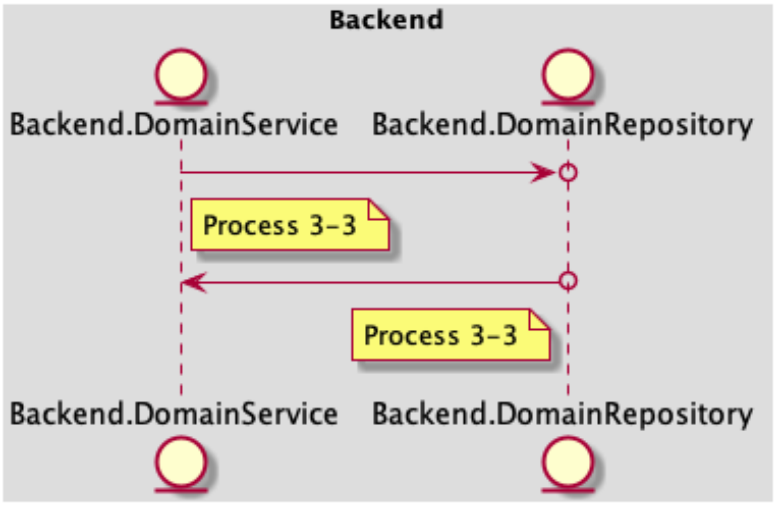
Flow 1-8 call repository

- **Complexity**: SMALL - about **30** minutes

Processes

- **Process 3-3 | Backend.DomainService -> Mock<Backend.DomainRepository>**
  Backend.DomainService -> Mock<Backend.DomainRepository>

Sequence Diagram



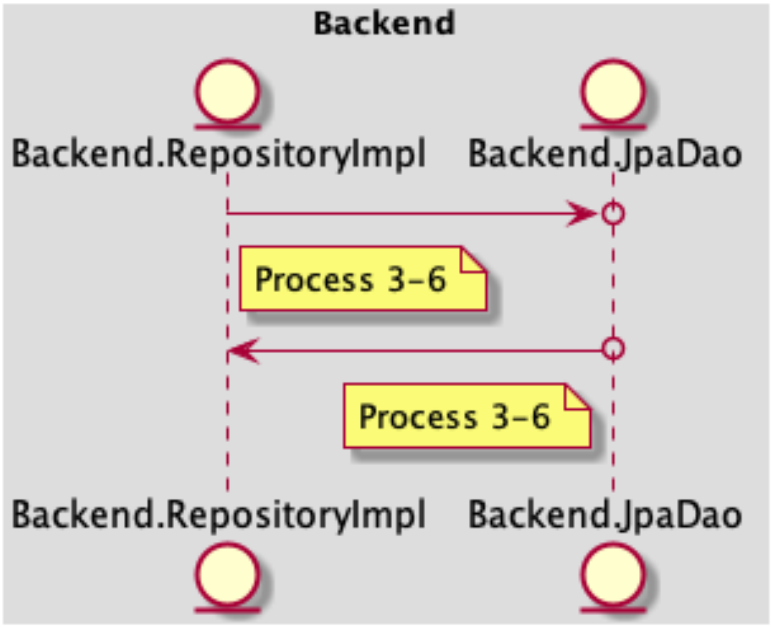
Flow 1-9 implement repository and inject the implementation

- **Complexity**: SMALL - about **30** minutes

Processes

- **Process 3-6 | Backend.RepositoryImpl -> Mock<Backend.JpaDao>**
  implement domain repository and search shopping cart in db
  Backend.RepositoryImpl -> Mock<Backend.JpaDao>
  returns null

Sequence Diagram



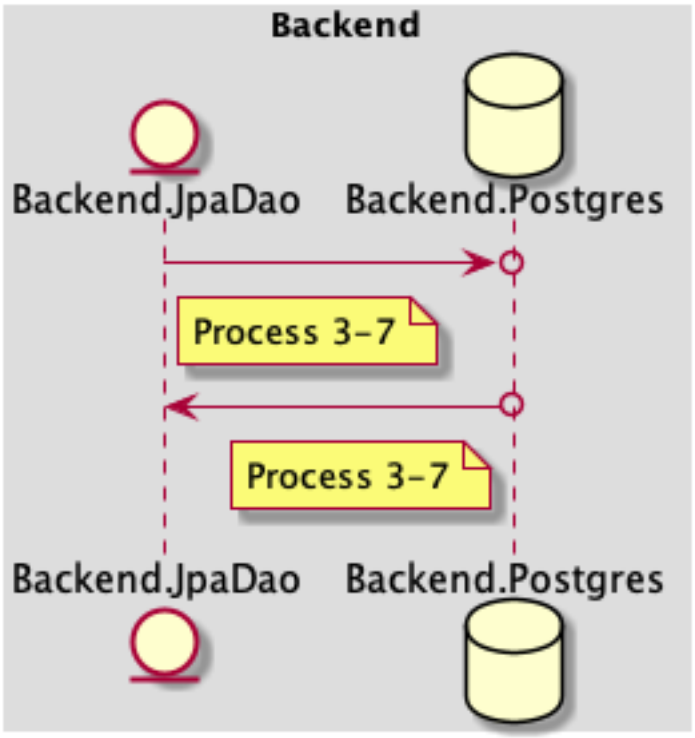
Flow 1-10 verify the sql

- **Complexity**: SMALL - about **30** minutes

Processes

- **Process 3-7 | Backend.JpaDao -> Mock<Backend.Postgres>**
  Backend.JpaDao -> Mock<Backend.Postgres>

Sequence Diagram

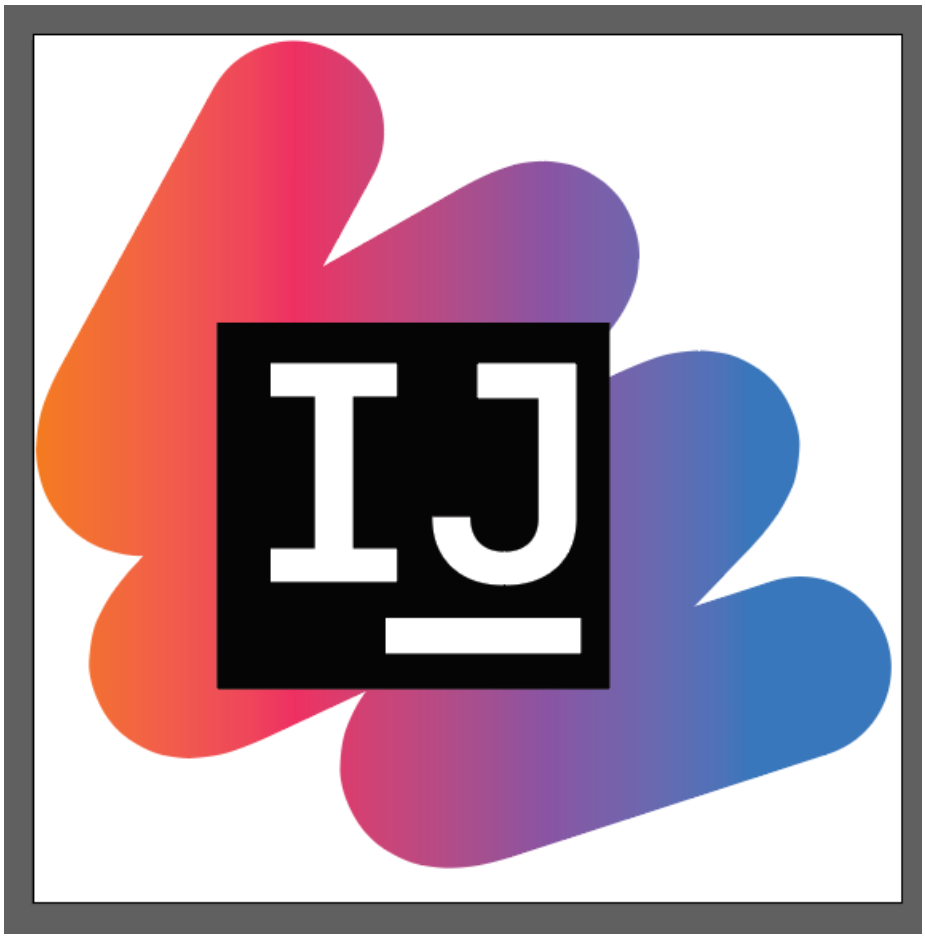


AC 2

when i am a customer, i can see my shopping cart with the products that i added before, so that i can review the amount and total price of them

Example William is reviewing his shopping cart after added some products

Mockup



Flow 2-1 render shopping cart

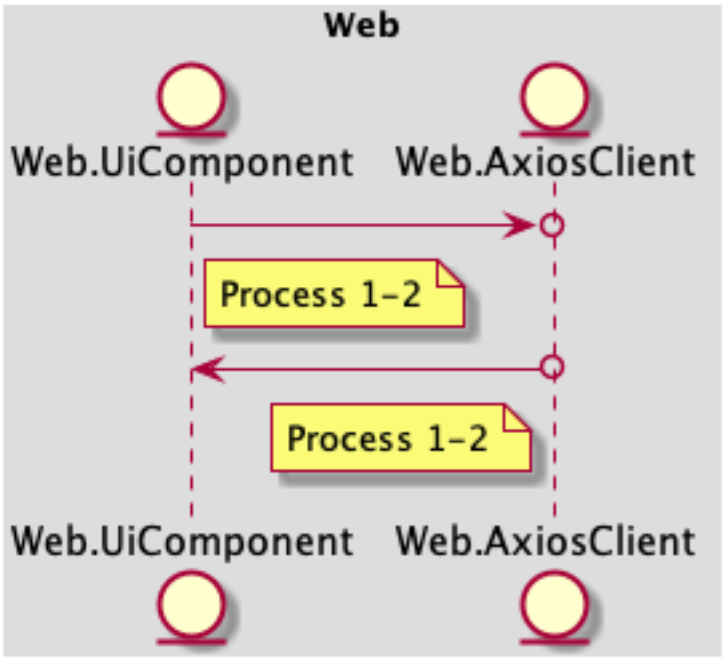
- **Complexity**: SMALL - about **30** minutes

Processes

- **Process 1-2 | Web.UiComponent -> Mock<Web.AxiosClient>** click 'the shopping cart' icon
  Web.UiComponent -> Mock<Web.AxiosClient> receive response with shopping cart info display the product list and the total price

---

Sequence Diagram



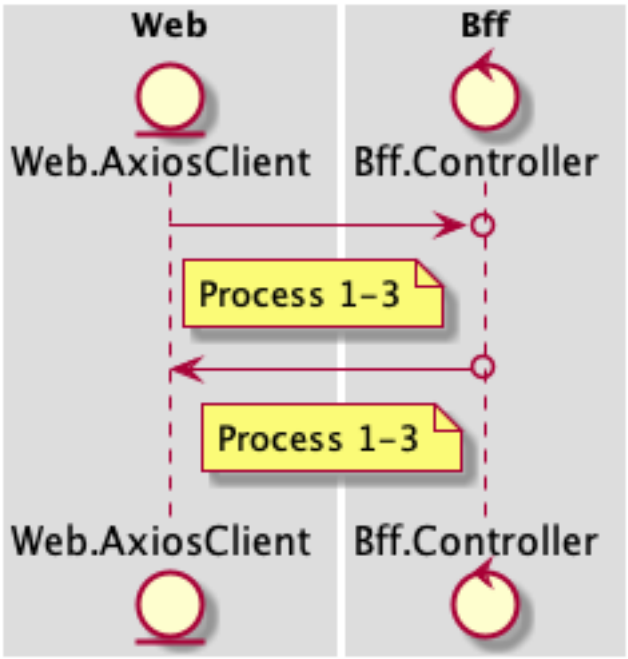
Flow 2-2 call bff api

- **Complexity**: SMALL - about **30** minutes

Processes

- **Process 1-3 | Web.AxiosClient -> Fake<Bff.Controller>** > GET /shoppingCart
  Web.AxiosClient -> Fake<Bff.Controller> < 200 OK

Sequence Diagram



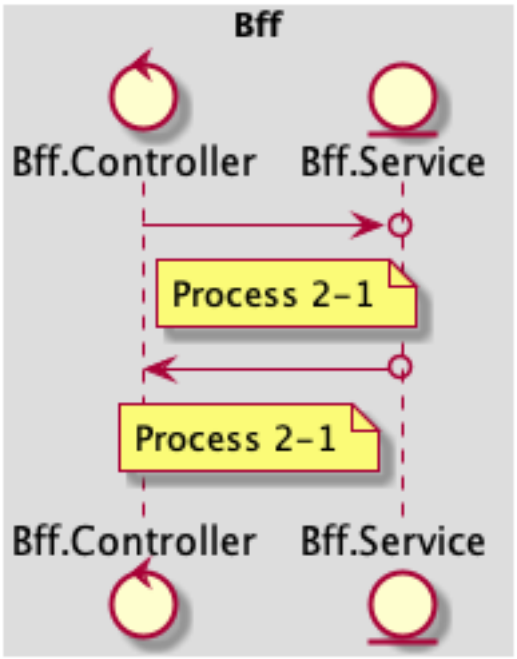
Flow 2-3 call service

- **Complexity**: SMALL - about **30** minutes

Processes

- **Process 2-1 | Bff.Controller -> Mock<Bff.Service>** retrieve user id from authentication header
  Bff.Controller -> Mock<Bff.Service>

Sequence Diagram



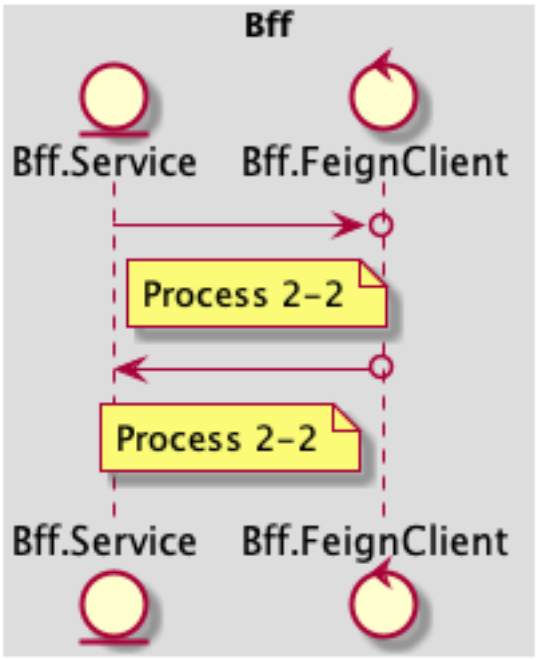
Flow 2-4 call feign client

- **Complexity**: SMALL - about **30** minutes

Processes

- **Process 2-2 | Bff.Service -> Mock<Bff.FeignClient>**
  Bff.Service -> Mock<Bff.FeignClient>

Sequence Diagram



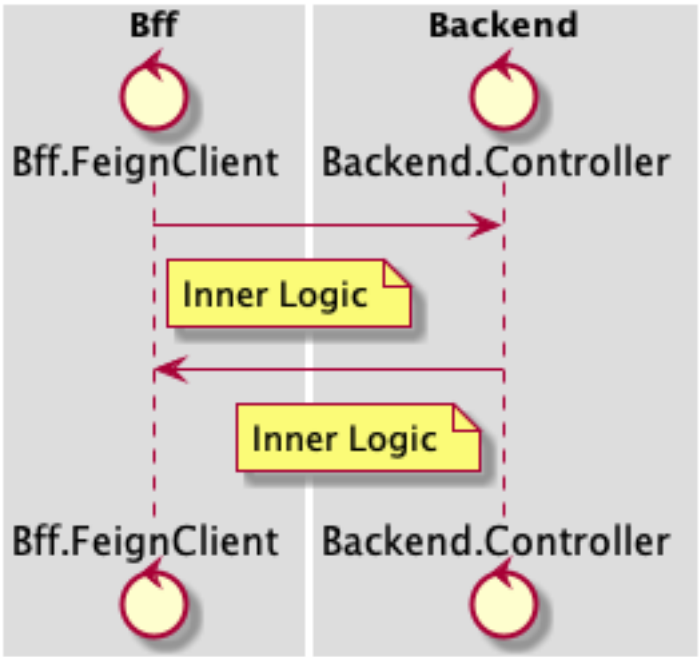
Flow 2-5 call backend api

- **Complexity**: SMALL - about **30** minutes

Processes

- **Inner Logic | Bff.FeignClient** > GET /shoppingCart < 200 OK

Sequence Diagram



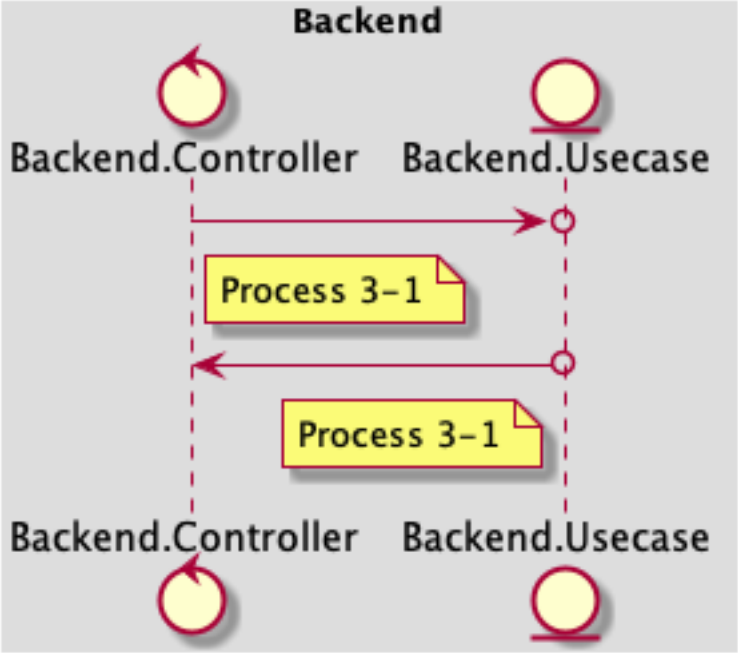
Flow 2-6 call usecase

- **Complexity**: SMALL - about **30** minutes

Processes

- **Process 3-1 | Backend.Controller -> Mock<Backend.Usecase>**
  call usecase to find the shopping cart by user id
  Backend.Controller -> Mock<Backend.Usecase>

Sequence Diagram



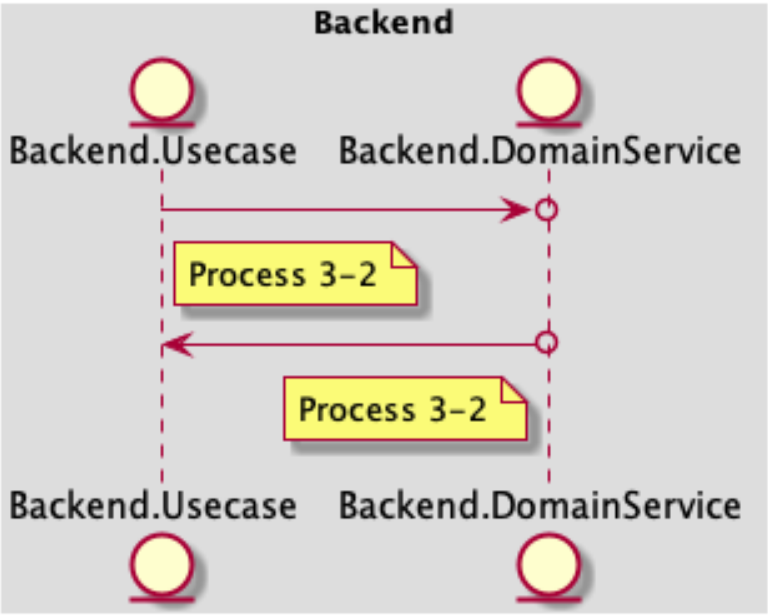
Flow 2-7 call domain service

- **Complexity**: SMALL - about **30** minutes

Processes

- **Process 3-2 | Backend.Usecase -> Mock<Backend.DomainService>**
  Backend.Usecase -> Mock<Backend.DomainService>

Sequence Diagram



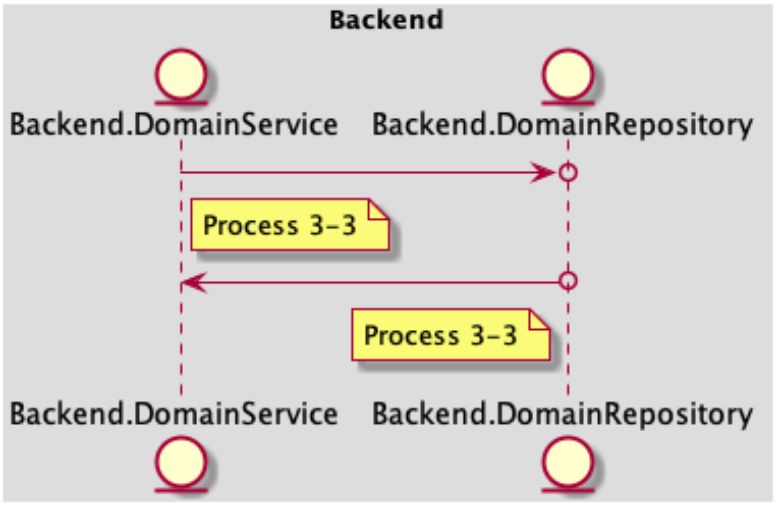
Flow 2-8 call domain repo

- **Complexity**: SMALL - about **30** minutes

Processes

- **Process 3-3 | Backend.DomainService -> Mock<Backend.DomainRepository>**
  Backend.DomainService -> Mock<Backend.DomainRepository>

Sequence Diagram



Flow 2-9 call dao and client to collect data

- **Complexity**: SMALL - about **30** minutes

Processes

- **Process 3-6 | Backend.RepositoryImpl -> Mock<Backend.JpaDao>**

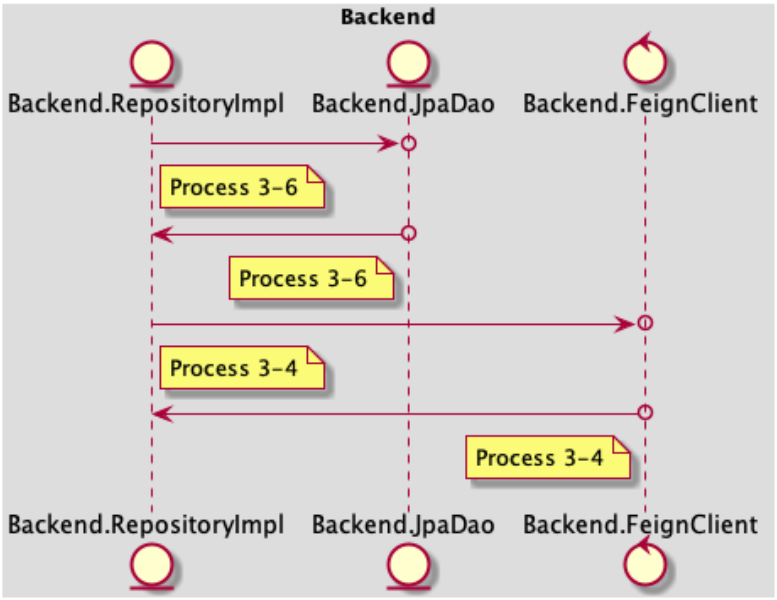
```
implement domain repository and search shopping cart in db
get shopping cart with product id
```

Backend.RepositoryImpl -> Mock<Backend.JpaDao>

- **Process 3-4 | Backend.RepositoryImpl -> Mock<Backend.FeignClient>**
  get product by id

  Backend.RepositoryImpl -> Mock<Backend.FeignClient>
  returns shopping cart

Sequence Diagram



Flow 2-10 call db

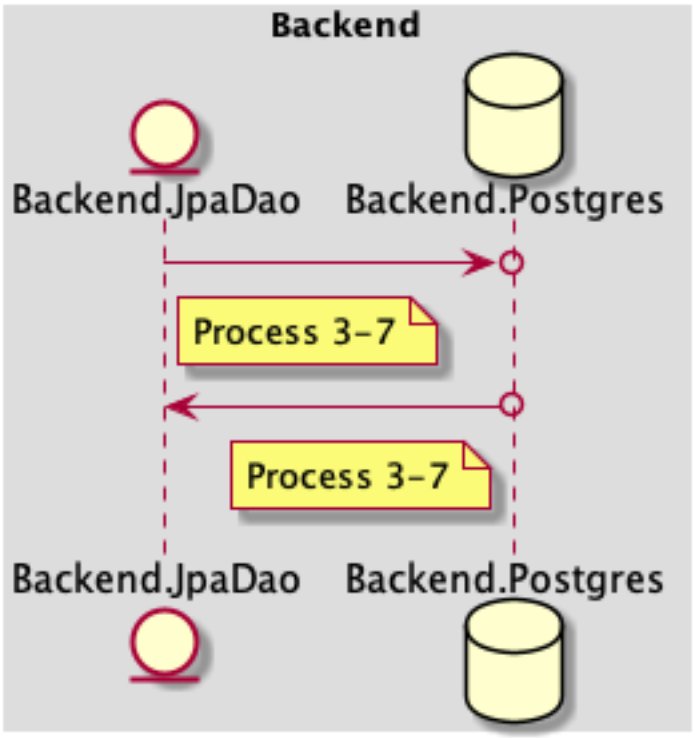
- **Complexity**: SMALL - about **30** minutes

Processes

- **Process 3-7 | Backend.JpaDao -> Mock<Backend.Postgres>** use h2

  Backend.JpaDao -> Mock<Backend.Postgres>

Sequence Diagram



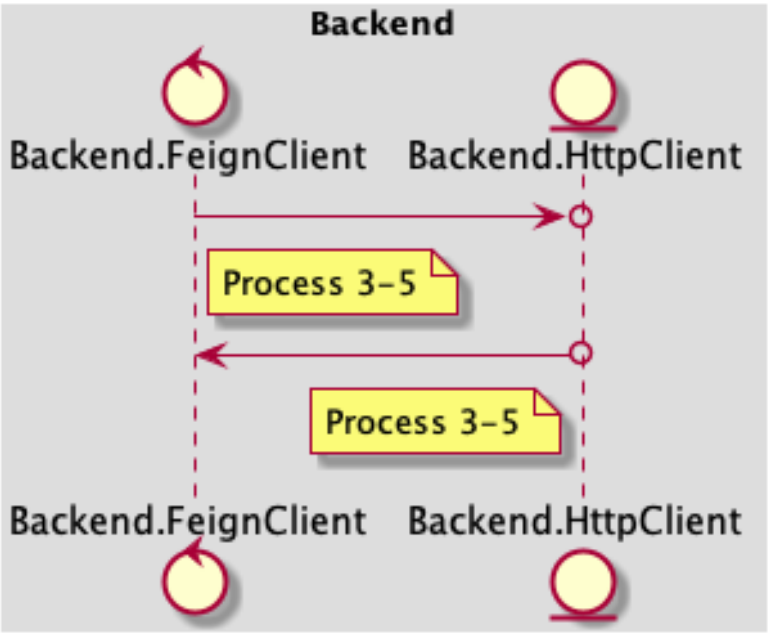
Flow 2-11 call api

- **Complexity**: SMALL - about **30** minutes

Processes

- **Process 3-5 | Backend.FeignClient -> Mock<Backend.HttpClient>**
  use Wiremock
  Backend.FeignClient -> Mock<Backend.HttpClient>

Sequence Diagram



AC 3

dsl demo

Mockup

Links

- Google 1
- Google 2

Flow 3-1 nested calls

- **Complexity**: SMALL - about **30** minutes

Processes

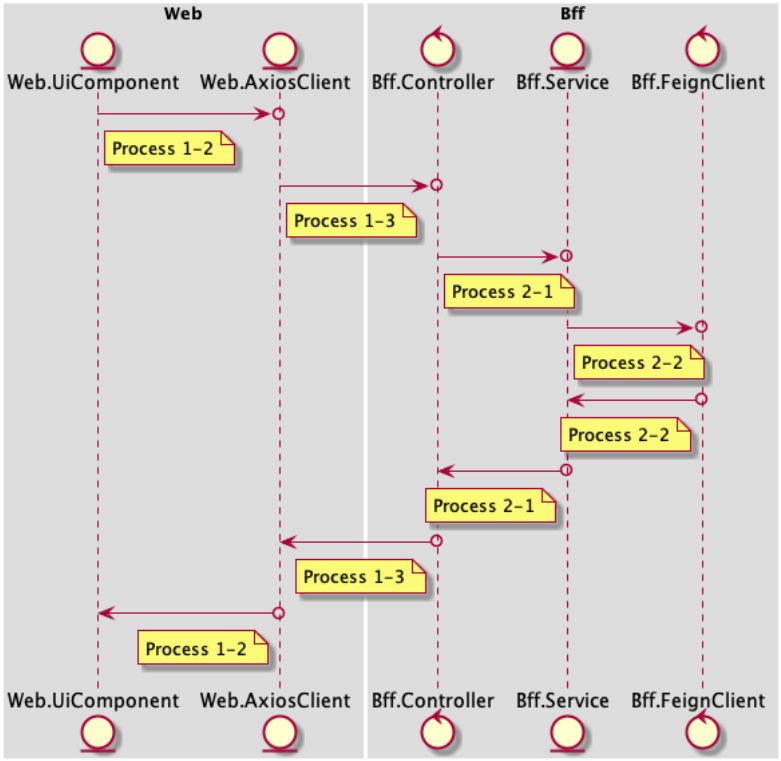
- **Process 1-2 | Web.UiComponent -> Mock<Web.AxiosClient>** click
  Web.UiComponent -> Mock<Web.AxiosClient> send request

- **Process 1-3 | Web.AxiosClient -> Fake<Bff.Controller>** > GET /go-google
  Web.AxiosClient -> Fake<Bff.Controller> < 200 OK

- **Process 2-1 | Bff.Controller -> Mock<Bff.Service>** execute
  Bff.Controller -> Mock<Bff.Service>

- **Process 2-2 | Bff.Service -> Mock<Bff.FeignClient>** > GET /go-google
  Bff.Service -> Mock<Bff.FeignClient> < 200 OK

Sequence Diagram



API Schema

Get ShoppingCart

GET /shoppingCart

- 200 OK
  - Response

```
{
    products: [{
        id: 10001
        name: "i'm a product",
        amount: 1,
        price: 500.00,
        total: 500.00
    }],
    total: 500.00
}
```

- 404 NOT_FOUND

Project Process Definition

Web

Process 1-1 | UiComponent => Real<UiComponent>

- Just import related ui component, testing with snapshot

Process 1-2 | UiComponent => Mock<AxiosClient>

- Mock axios client
- Call axios client, assert component state

Process 1-3 | AxiosClient => Fake<Bff.Controller>

- Fake api endpoint
- Call fake api, assert the response and error handling is correct

Bff

Process 2-1 | Controller => Mock<Service>

- Mock service
- Call service, verify the expected input parameters and assert the expected output return

Process 2-2 | Service => Mock<FeignClient>

- Mock feign client
- Call feign client, verify the expected input parameters and assert the expected output return

Backend

Process 3-1 | Controller => Mock<Usecase>

- Mock usecase
- Call usecase, verify the expected input parameters and assert the expected output return

Process 3-2 | Usecase => Mock<DomainService>

- Mock domain service
- Call domain service, verify the expected input parameters and assert the expected output return

Process 3-3 | DomainService => Mock<DomainRepository>

- Mock domain repository
- Call domain repository, verify the expected input parameters and assert the expected output return

Process 3-4 | RepositoryImpl => Mock<FeignClient>

- Mock feign client
- Call feign client, verify the expected input parameters and assert the expected output return

Process 3-5 | FeignClient => Mock<HttpClient>

- Fake http client (using wiremock)
- Call http client, stub the request and response and assert the expected response status and payload

Process 3-6 | RepositoryImpl => Mock<JpaDao>

- Mock jpa dao
- Call jpa dao, verify the expected input parameters and assert the expected output return

Process 3-7 | JpaDao => Mock<Postgres>

- Fake db (using h2 or docker)
- Call fake db, init some test data and assert the execution result set is expected