

Table of Content

- In Scope
- Out of Scope
- AC 1
 - Flow 1-1 render empty shopping cart
 - Flow 1-2 call bff api
 - Flow 1-3 call service to get dto
 - Flow 1-4 call feign client to get dto
 - Flow 1-5 call backend to get dto
 - Flow 1-6 call usecase
 - Flow 1-7 call domain service
 - Flow 1-8 call repository
 - Flow 1-9 implement repository and inject the implementation
 - Flow 1-10 verify the sql
- AC 2
 - Flow 2-1 render shopping cart
 - Flow 2-2 call bff api
 - Flow 2-3 call service
 - Flow 2-4 call feign client
 - Flow 2-5 call backend api
 - Flow 2-6 call usecase
 - Flow 2-7 call domain service
 - Flow 2-8 call domain repo
 - Flow 2-9 call dao and client to collect data
 - Flow 2-10 call db
 - Flow 2-11 call api
- AC 3
 - Flow 3-1 nested calls
- API Schema
- Project Process Definition

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

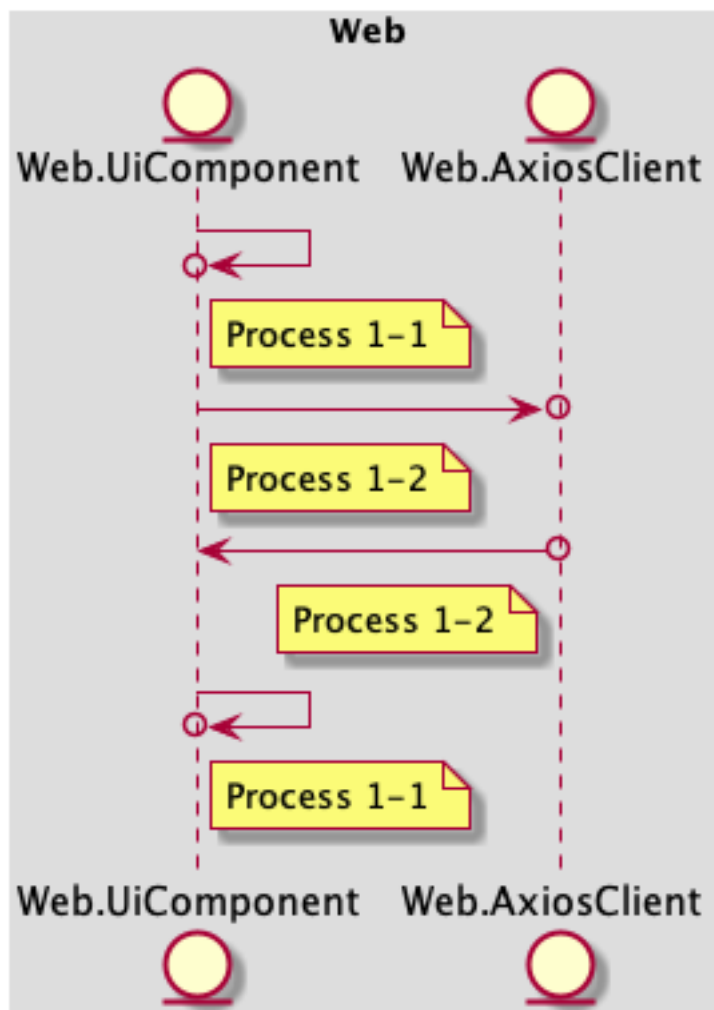
Processes

- **Process 1-1 | Web.UiComponent | 60 mins** 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**, depends on **Mock<Web.AxiosClient>**
| **60 mins** call the api *Web.UiComponent -> Mock<Web.AxiosClient>*
return empty object
-
- **Process 1-1** | **Web.UiComponent** | **60 mins** display message 'Your shopping cart is empty!'
-

Sequence Diagram

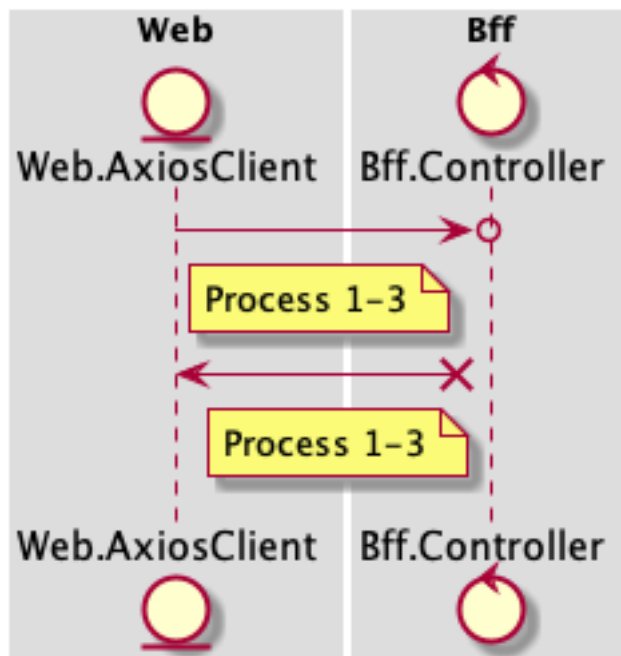


Flow 1-2 call bff api

Processes

- **Process 1-3** | **Web.AxiosClient**, depends on **Fake<Bff.Controller>**
| **0 mins** > GET /shoppingCart *Web.AxiosClient* -> *Fake<Bff.Controller>*
< 404 NOT_FOUND
-

Sequence Diagram

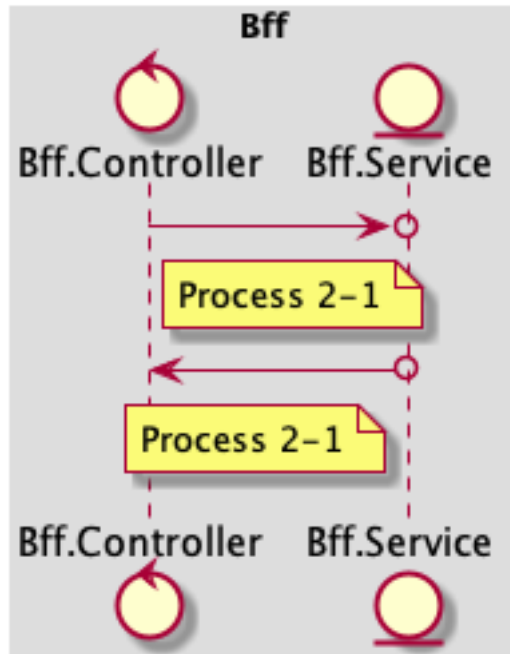


Flow 1-3 call service to get dto

Processes

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

Sequence Diagram

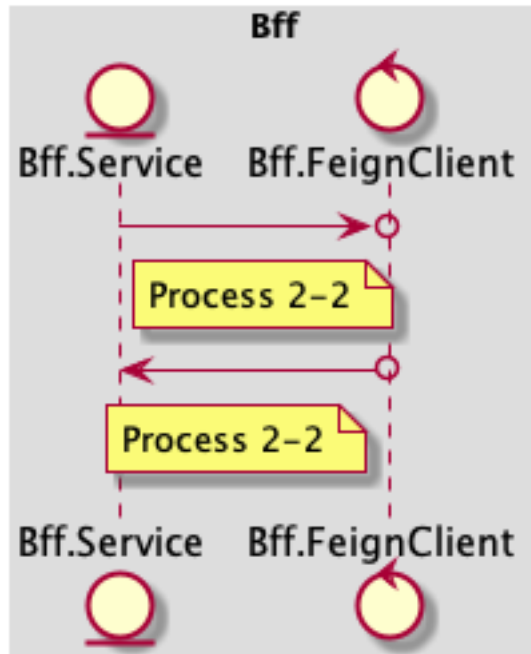


Flow 1-4 call feign client to get dto

Processes

- **Process 2-2 | Bff.Service, depends on Mock<Bff.FeignClient> | 60 mins** call feign client with user id *Bff.Service* -> *Mock<Bff.FeignClient>* throw not found exception

Sequence Diagram

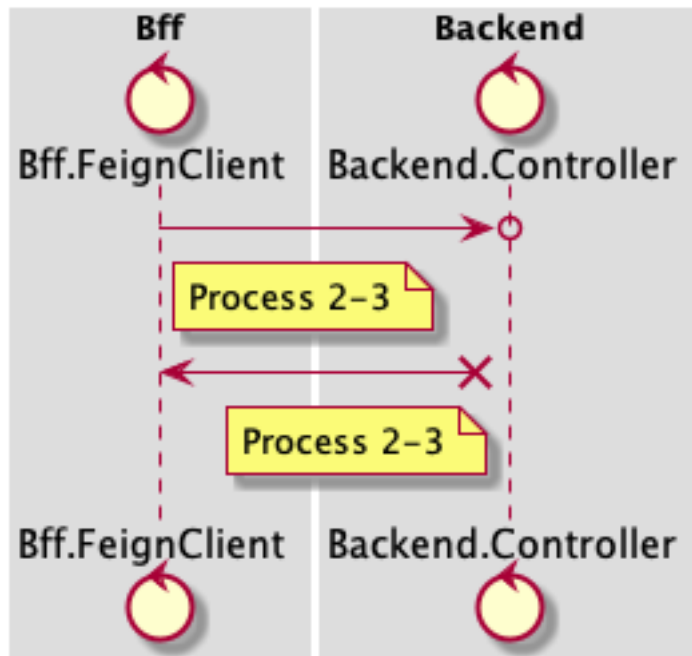


Flow 1-5 call backend to get dto

Processes

- **Process 2-3** | **Bff.FeignClient**, depends on **Fake<Backend.Controller>**
 | **60 mins** > GET /shoppingCart *Bff.FeignClient* -> *Fake<Backend.Controller>*
 < 404 NOT_FOUND

Sequence Diagram

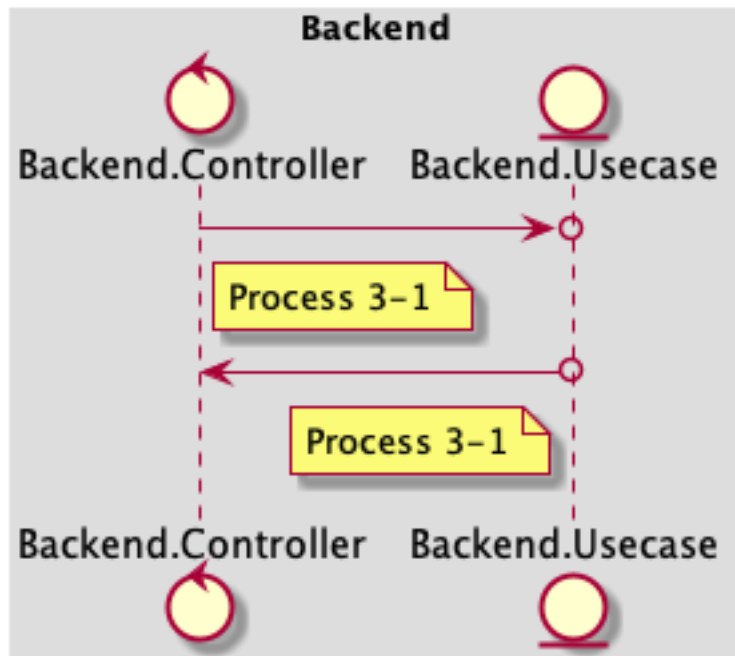


Flow 1-6 call usecase

Processes

- **Process 3-1** | **Backend.Controller**, depends on **Mock<Backend.Usecase>**
 | **60 mins** 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

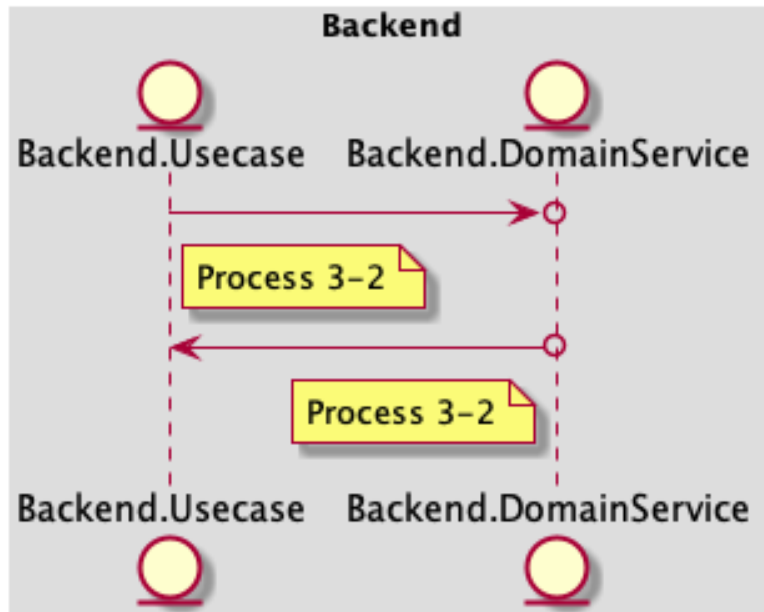


Flow 1-7 call domain service

Processes

- Process 3-2 | Backend.Usecase, depends on Mock<Backend.DomainService>
| 60 mins

Sequence Diagram

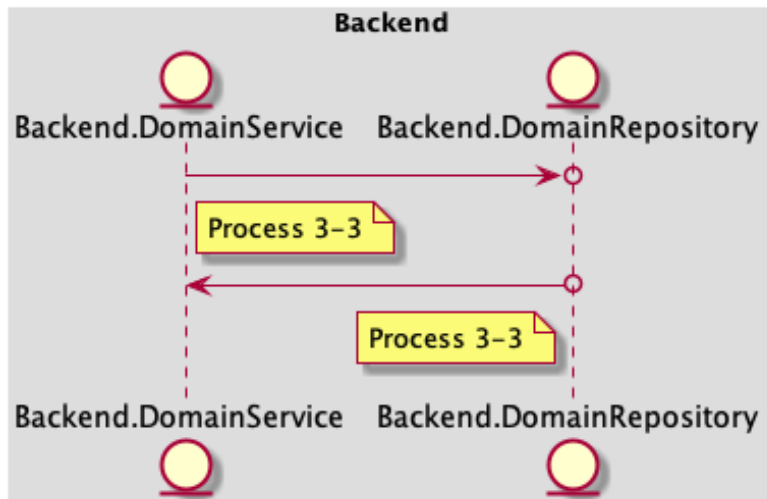


Flow 1-8 call repository

Processes

- Process 3-3 | Backend.DomainService, depends on Mock<Backend.DomainRepository>
| 60 mins

Sequence Diagram

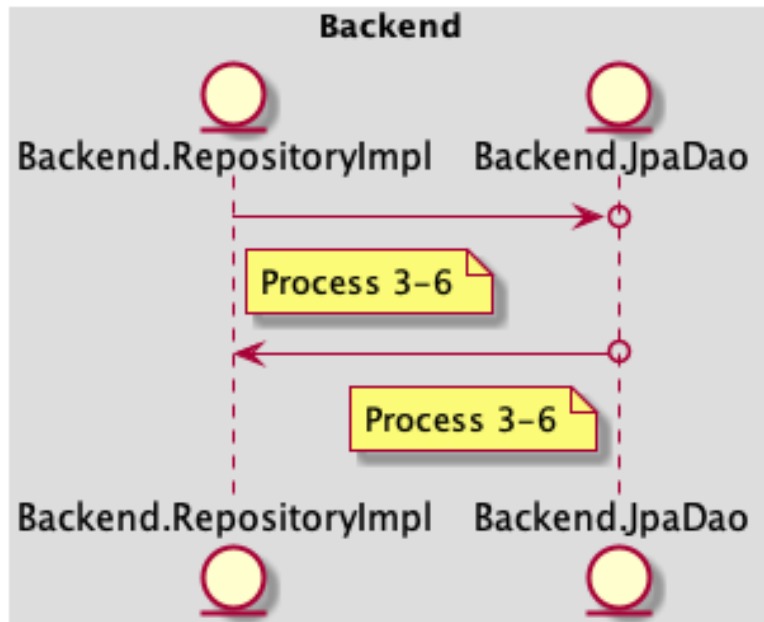


Flow 1-9 implement repository and inject the implementation

Processes

- **Process 3-6** | `Backend.RepositoryImpl`, depends on `Mock<Backend.JpaDao>`
 | **60 mins** implement domain repository and search shopping cart in db
Backend.RepositoryImpl -> Mock<Backend.JpaDao> returns null

Sequence Diagram

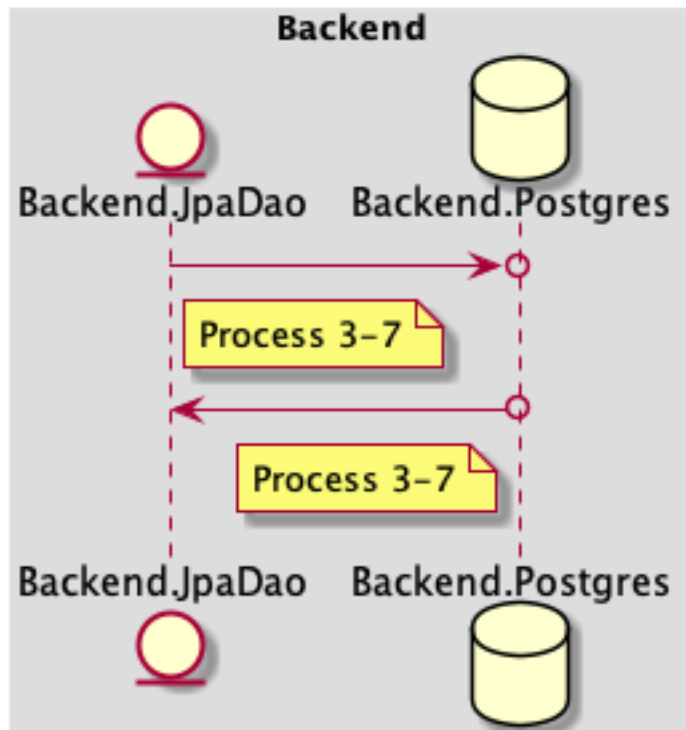


Flow 1-10 verify the sql

Processes

- Process 3-7 | `Backend.JpaDao`, depends on `Mock<Backend.Postgres>`
| 60 mins

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

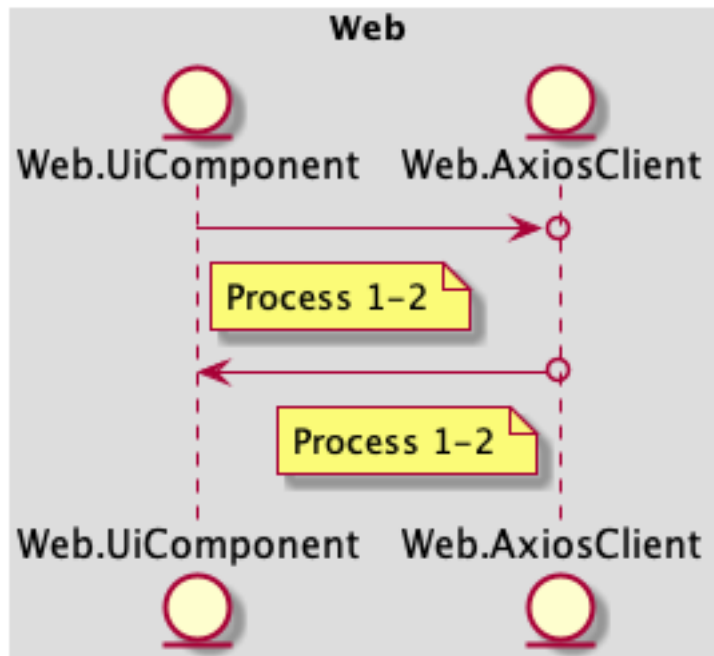


Flow 2-1 render shopping cart

Processes

- **Process 1-2 | Web.UiComponent, depends on Mock<Web.AxiosClient>**
| **60 mins** 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

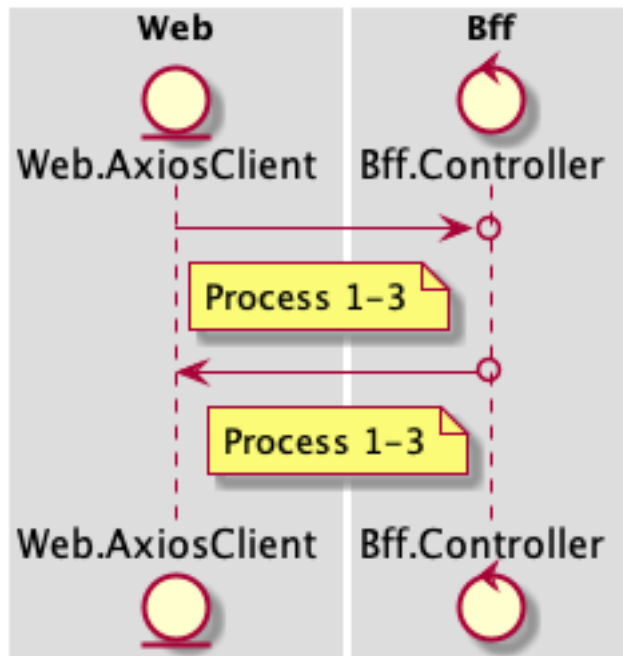


Flow 2-2 call bff api

Processes

- **Process 1-3** | **Web.AxiosClient**, depends on **Fake<Bff.Controller>**
 | **0 mins** > GET /shoppingCart *Web.AxiosClient* -> *Fake<Bff.Controller>*
 < 200 OK

Sequence Diagram

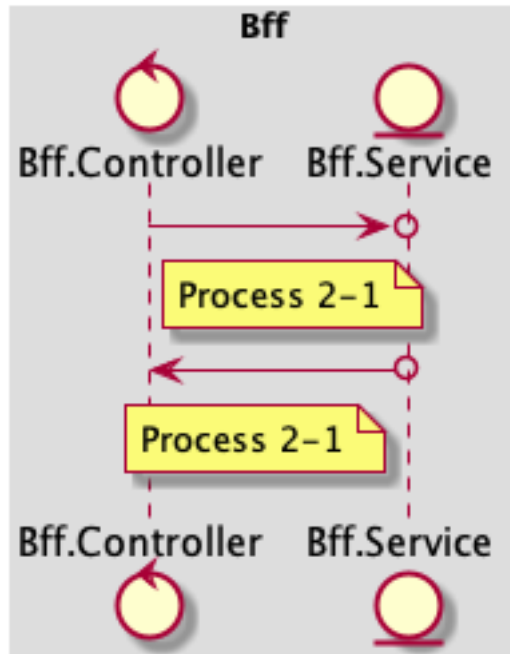


Flow 2-3 call service

Processes

- **Process 2-1** | **Bff.Controller**, depends on **Mock<Bff.Service>** | **60 mins** retrieve user id from authentication header *Bff.Controller* -> *Mock<Bff.Service>*

Sequence Diagram

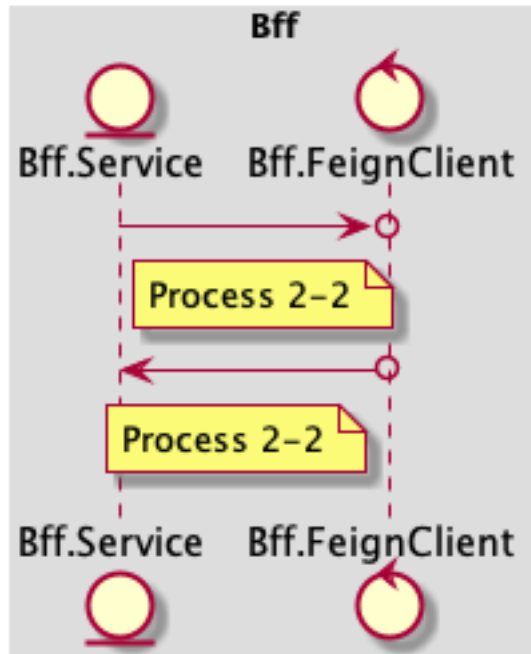


Flow 2-4 call feign client

Processes

- Process 2-2 | Bff.Service, depends on Mock<Bff.FeignClient> | 60 mins

Sequence Diagram

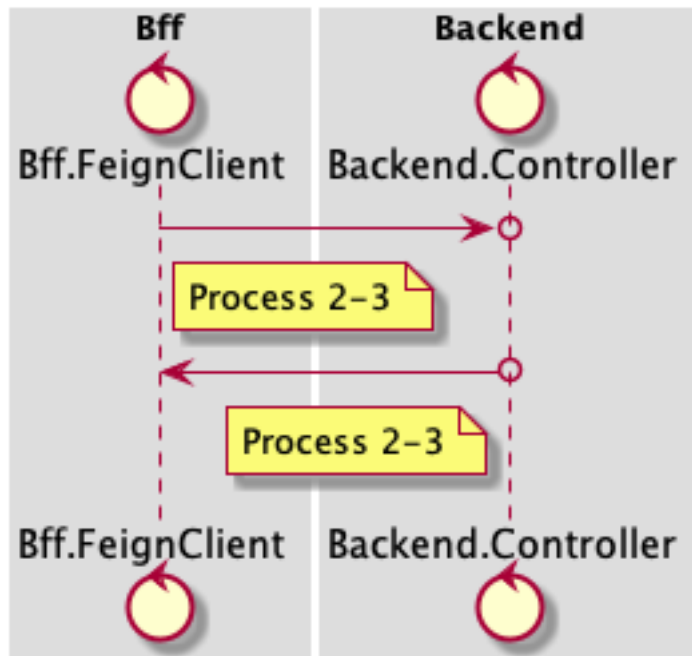


Flow 2-5 call backend api

Processes

- **Process 2-3** | Bff.FeignClient, depends on Fake<Backend.Controller>
 | 60 mins > GET /shoppingCart Bff.FeignClient -> Fake<Backend.Controller>
 < 200 OK

Sequence Diagram

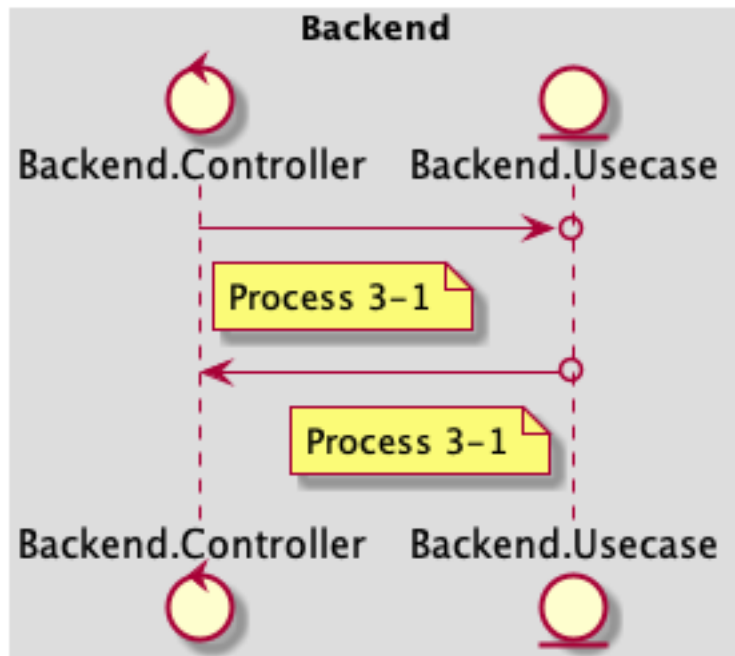


Flow 2-6 call usecase

Processes

- **Process 3-1** | **Backend.Controller**, depends on **Mock<Backend.Usecase>**
 | **60 mins** call usecase to find the shopping cart by user id *Backend.Controller* -> *Mock<Backend.Usecase>*

Sequence Diagram

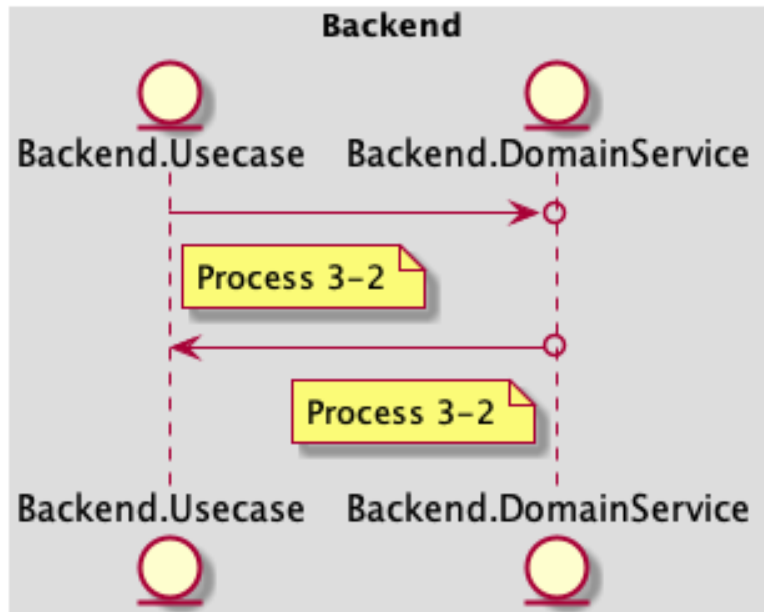


Flow 2-7 call domain service

Processes

- Process 3-2 | Backend.Usecase, depends on Mock<Backend.DomainService>
| 60 mins

Sequence Diagram

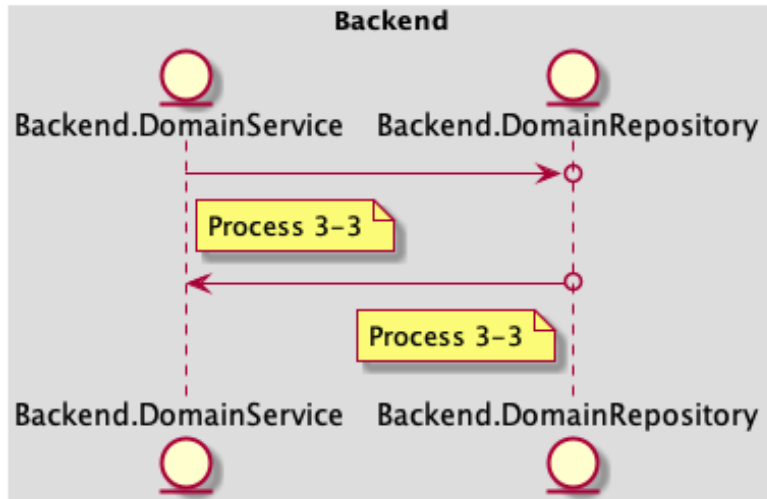


Flow 2-8 call domain repo

Processes

- Process 3-3 | Backend.DomainService, depends on Mock<Backend.DomainRepository>
| 60 mins

Sequence Diagram



Flow 2-9 call dao and client to collect data

Processes

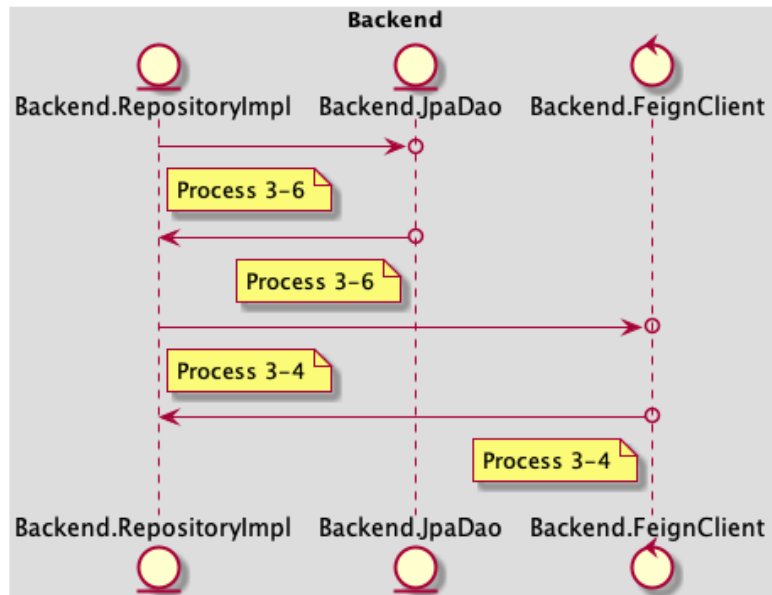
- **Process 3-6** | Backend.RepositoryImpl, depends on Mock<Backend.JpaDao>
| 60 mins

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, depends on Mock<Backend.FeignClient>
| 60 mins get product by id *Backend.RepositoryImpl -> Mock<Backend.FeignClient>*
returns shopping cart

Sequence Diagram

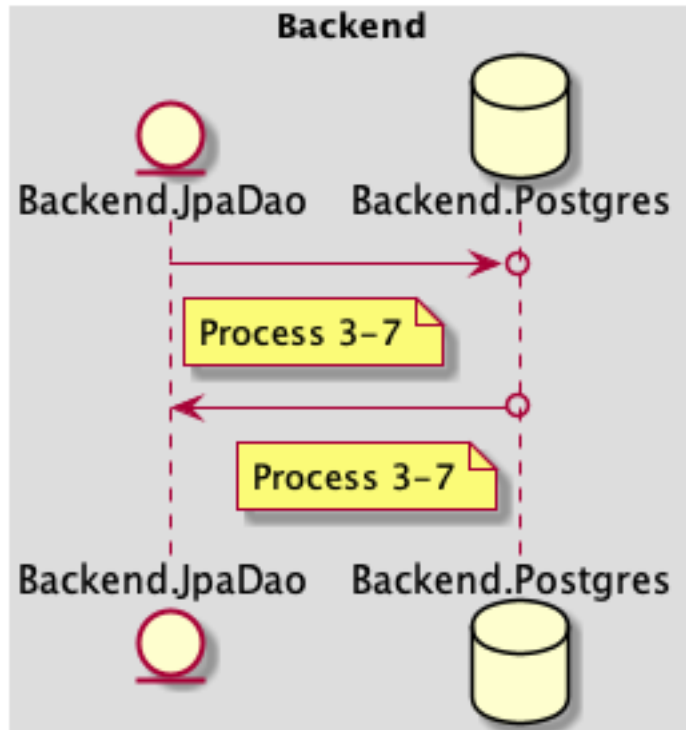


Flow 2-10 call db

Processes

- Process 3-7 | Backend.JpaDao, depends on Mock<Backend.Postgres>
| 60 mins use h2 Backend.JpaDao -> Mock<Backend.Postgres>

Sequence Diagram

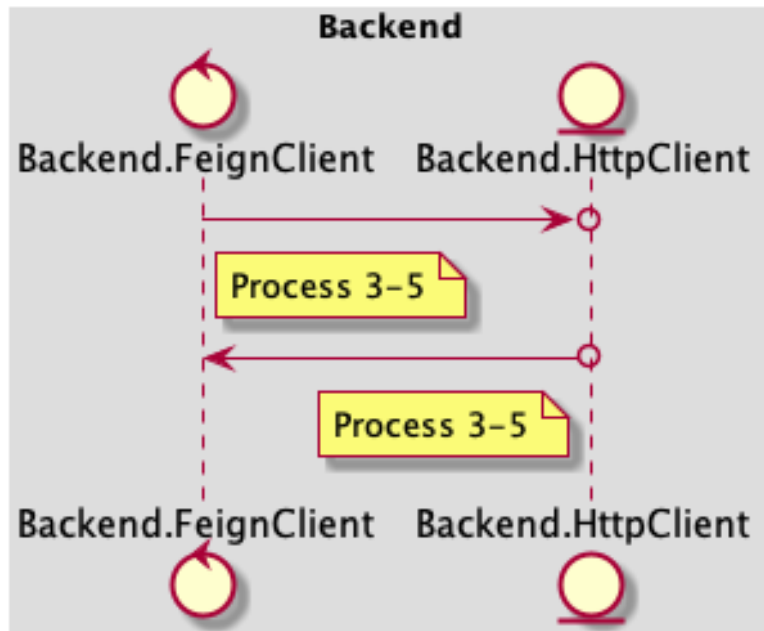


Flow 2-11 call api

Processes

- Process 3-5 | Backend.FeignClient, depends on Mock<Backend.HttpClient>
| 60 mins use Wiremock *Backend.FeignClient* -> *Mock<Backend.HttpClient>*

Sequence Diagram



AC 3

dsl demo

Mockup

Google



Links

- Google 1
- Google 2

Flow 3-1 nested calls

Processes

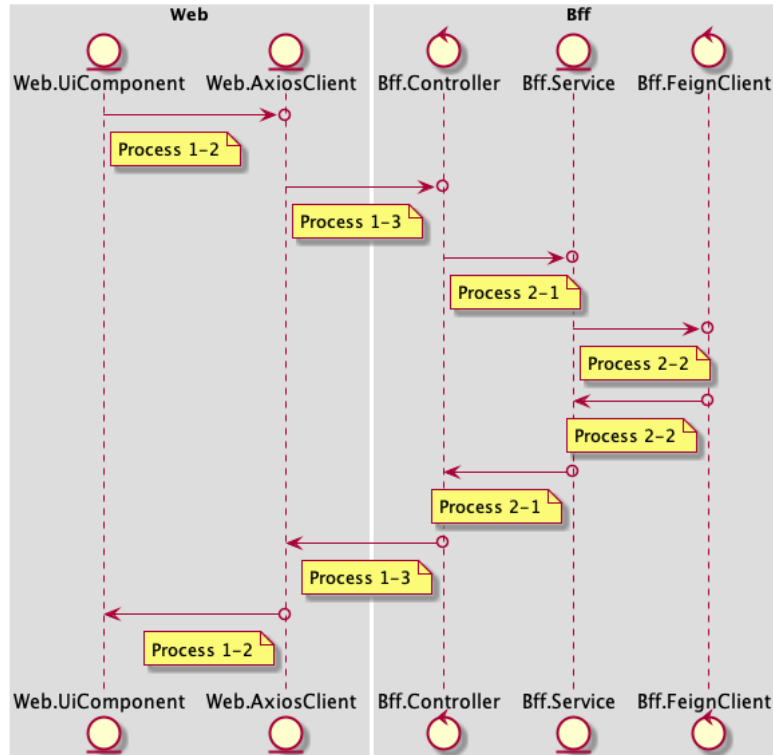
- **Process 1-2 | Web.UiComponent, depends on Mock<Web.AxiosClient>**
| **60 mins** click *Web.UiComponent* -> *Mock<Web.AxiosClient>* send request

- **Process 1-3 | Web.AxiosClient, depends on Fake<Bff.Controller>**
| **0 mins** > GET /go-google *Web.AxiosClient* -> *Fake<Bff.Controller>* < 200 OK

- **Process 2-1 | Bff.Controller, depends on Mock<Bff.Service>** |
60 mins execute *Bff.Controller* -> *Mock<Bff.Service>*

- **Process 2-2 | Bff.Service, depends on Mock<Bff.FeignClient>** |
60 mins > GET /go-google *Bff.Service* -> *Mock<Bff.FeignClient>* < 200 OK

Sequence Diagram



API Schema

Get ShoppingCart

GET /shoppingCart

- 200 OK
- 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

Process 2-3 | FeignClient => Fake<Backend.Controller>

- Setup endpoints in wiremock with fake payload
- Setup wiremock's url as base url
- Call upstream endpoints and verify the data object that formatted from json is expected

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