Technical Assessment – User Guide
Gapstars

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Document Control

Date	Version	Modification	Author
2021/06/19	1.0	Initial Documentation	B.K. Lorenuzhewa

Contents

Introduction

Documentation elaborates operational and technical information of the technical assessment.

Setting up the project

Software prerequisites

Majorly below components will be required to setup and run the project.

1. Java 11
2. Maven
3. MySql Server

Step 1 – Cloning the project

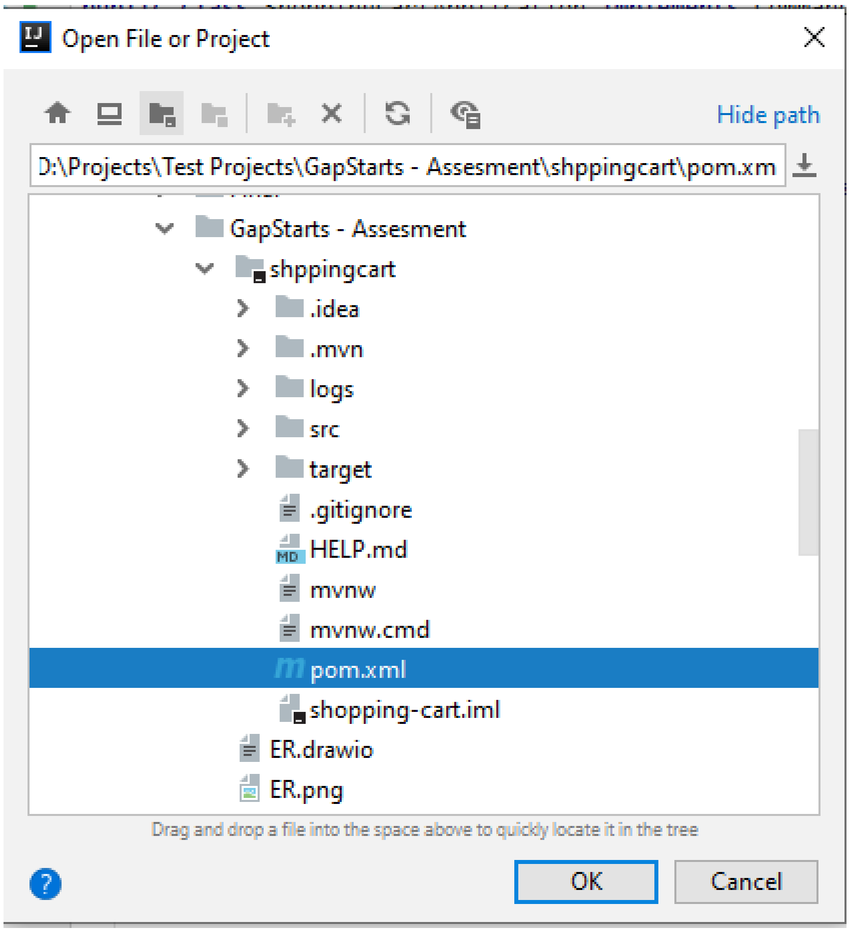
Project is pushed into GitHub Public Repository.

Clone URL: https://github.com/BynuLorenz/shopping-cart.git

Step 2 – Open the project via IDE

Assumptions: Java, Maven and MySql are already configured.

Go to Clone location and go to folder Code. Open folder shopping-cart. Open pom.xml via IDE.



```
D:\Projects\Test Projects\GapStarts - Assesment\shppingcart\pom.xm
GapStarts - Assesment
  shppingcart
    .idea
    .mvn
    logs
    src
    target
    .gitignore
    HELP.md
    mvnw
    mvnw.cmd
    pom.xml
    shopping-cart.iml
  ER.drawio
  ER.png
```

Drag and drop a file into the space above to quickly locate it in the tree

Step 3 – Executing the database script

Go to clone location.

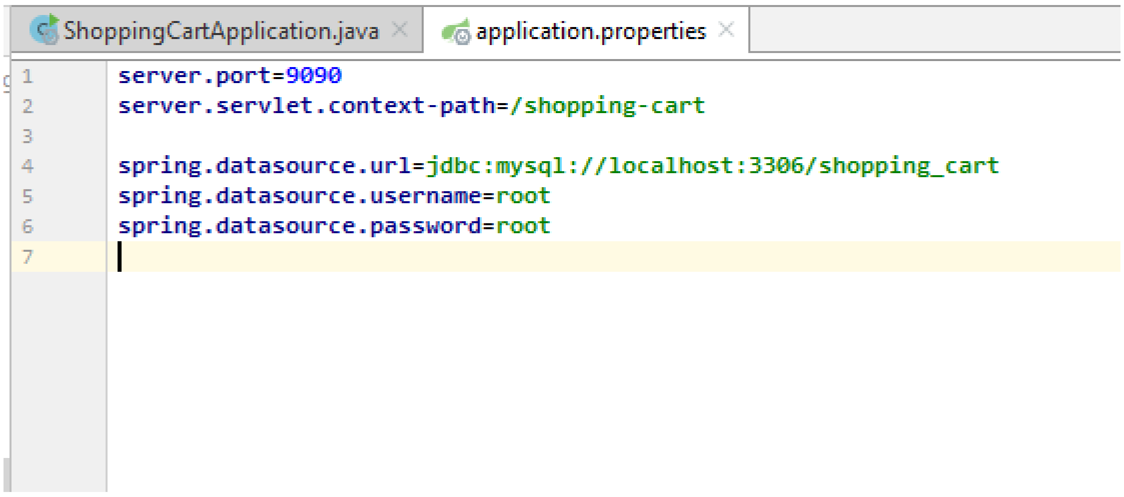
Open folder Docs, execute file “shopping_cart.sql” in mysql server.

Step 4 – Changing the application configurations

Open file “application.properties” in resource folder of the project.

Amend below properties with local machine configuration

- spring.datasource.username
- spring.datasource.password



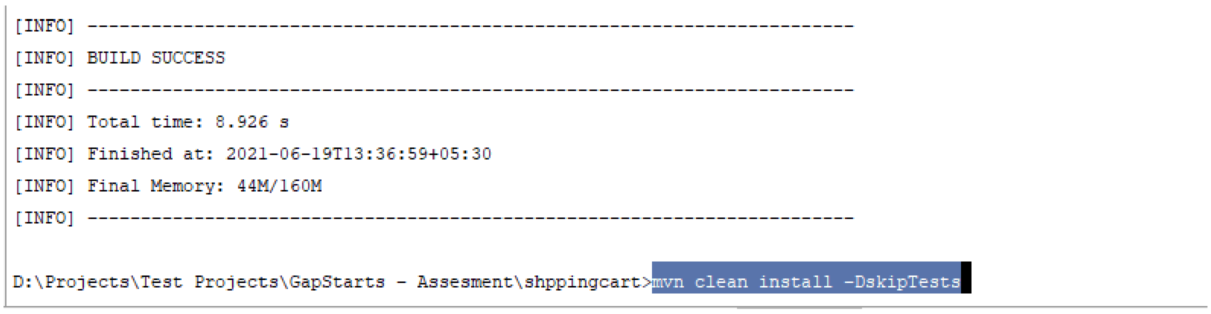
```
server.port=9090
server.servlet.context-path=/shopping-cart

spring.datasource.url=jdbc:mysql://localhost:3306/shopping_cart
spring.datasource.username=root
spring.datasource.password=root
```

Step 5 – Building the application

Assumptions: Java 11, Maven and MySql are already configured.

Execute command "mvn clean install -DskipTests" and application will build successfully.

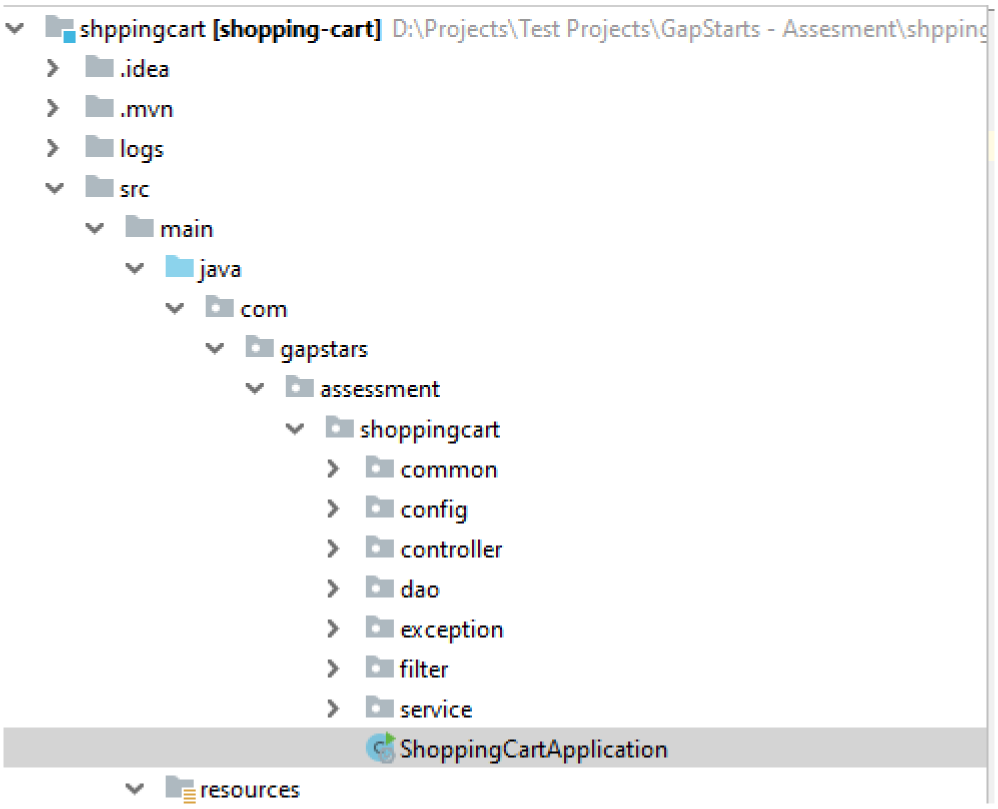


```
[INFO] ------------------------------------------------------------------------
[INFO] BUILD SUCCESS
[INFO] ------------------------------------------------------------------------
[INFO] Total time: 8.926 s
[INFO] Finished at: 2021-06-19T13:36:59+05:30
[INFO] Final Memory: 44M/160M
[INFO] ------------------------------------------------------------------------

D:\Projects\Test Projects\GapStarts - Assesment\shppingcart>mvn clean install -DskipTests
```

Step 6 – Running the application

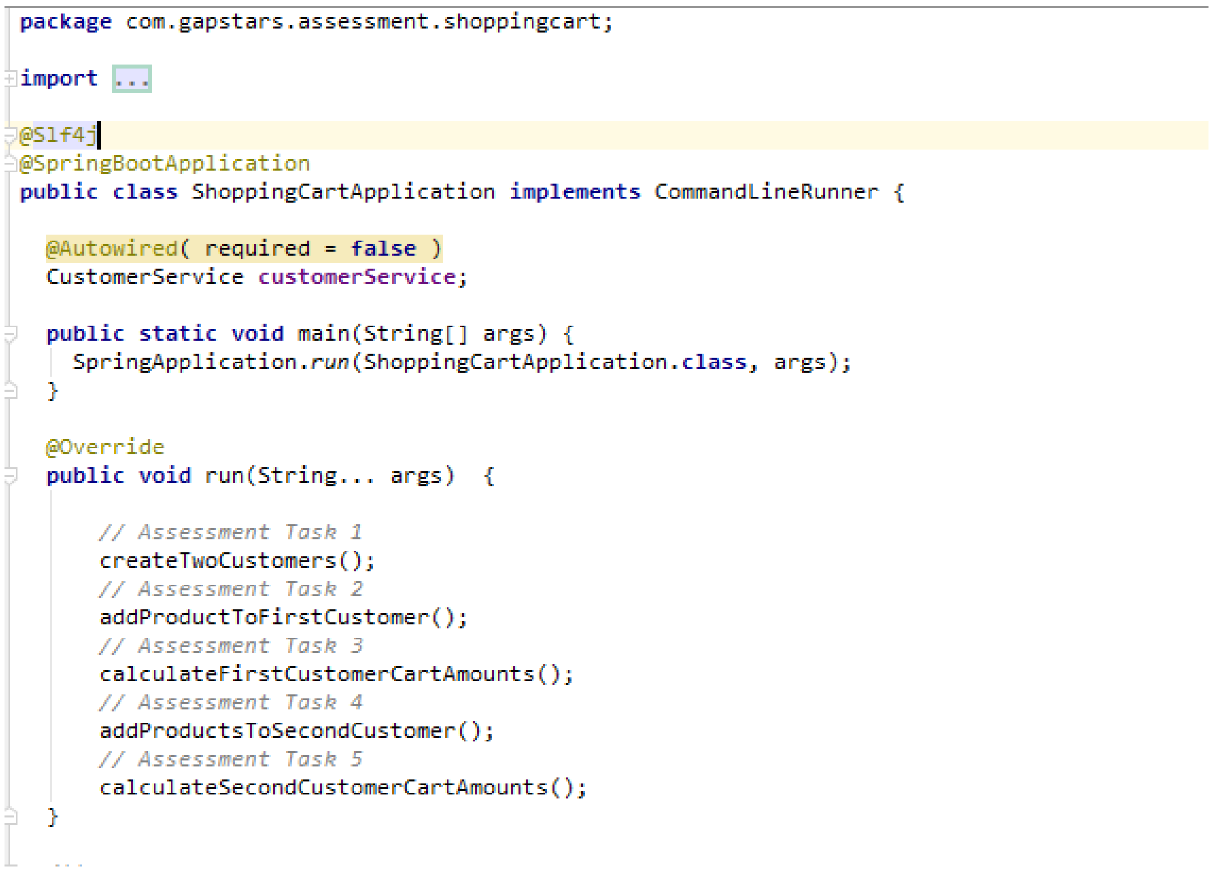
Run the class "ShoppingCartApplication.java"



```
shppingcart [shopping-cart] D:\Projects\Test Projects\GapStarts - Assesment\shpping
  .idea
  .mvn
  logs
  src
    main
      java
        com
          gapstars
            assessment
              shoppingcart
                common
                config
                controller
                dao
                exception
                filter
                service
                ShoppingCartApplication
      resources
```

Special Note

With Main Application class extended to command line runner, it will automatically execute several predefine methods on each Application run. Methods are directly related to Assessment.



```
package com.gapstars.assessment.shoppingcart;

import ...

@Slf4j
@SpringBootApplication
public class ShoppingCartApplication implements CommandLineRunner {

  @Autowired( required = false )
  CustomerService customerService;

  public static void main(String[] args) {
    SpringApplication.run(ShoppingCartApplication.class, args);
  }

  @Override
  public void run(String... args)  {

      // Assessment Task 1
      createTwoCustomers();
      // Assessment Task 2
      addProductToFirstCustomer();
      // Assessment Task 3
      calculateFirstCustomerCartAmounts();
      // Assessment Task 4
      addProductsToSecondCustomer();
      // Assessment Task 5
      calculateSecondCustomerCartAmounts();
  }

  ...
```

There are five methods implemented focusing on the assessment tasks.

1. createTwoCustomers() – Assessment Task 1
2. addProductToFirstCustomer() - Assessment Task 2
3. calculateFirstCustomerCartAmounts() – Assessment Task 3
4. addProductsToSecondCustomer() - Assessment Task 4
5. calculateSecondCustomerCartAmounts() - Assessment Task 5

Also Swagger API is also integrated for API testing. Please refer to section "Testing the application"for more information.

Testing the application

Application can be tested via two methods,

1. Predefined methods
2. Swagger UI

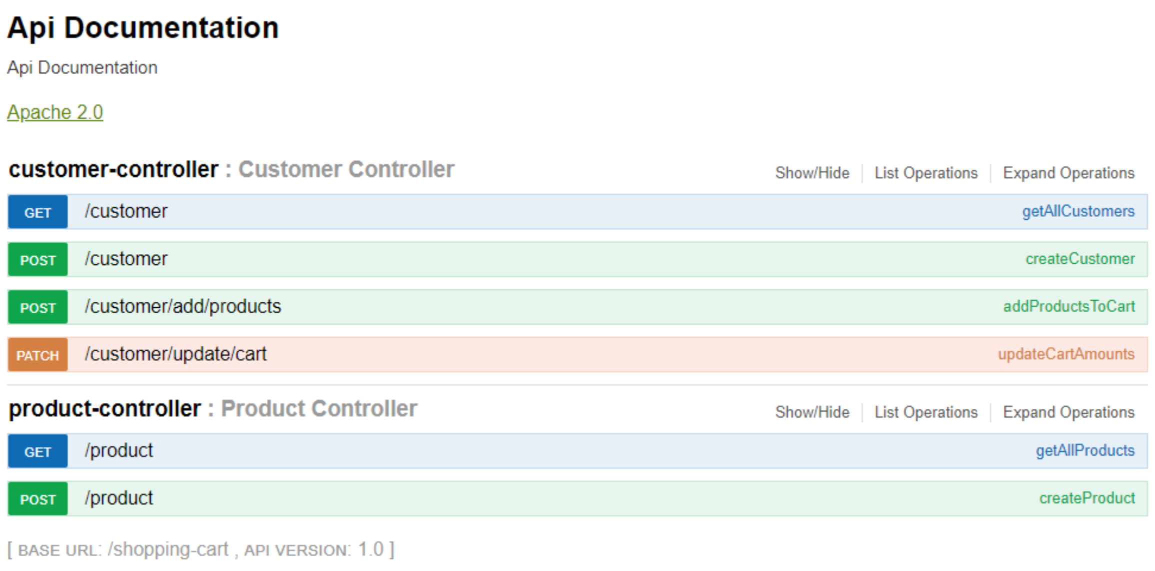
Testing via predefined methods

Please refer to previous section “Special Note”

This method executes with pre-set static values. Please refer to class “ShoppingCartApplication.java” run() method.

Testing via Swagger UI

Swagger UI URL: http://localhost:9090/shopping-cart/swagger-ui.html



Api Documentation

Api Documentation

Apache 2.0

customer-controller : Customer Controller — Show/Hide | List Operations | Expand Operations

GET	/customer	getAllCustomers
POST	/customer	createCustomer
POST	/customer/add/products	addProductsToCart
PATCH	/customer/update/cart	updateCartAmounts

product-controller : Product Controller — Show/Hide | List Operations | Expand Operations

GET	/product	getAllProducts
POST	/product	createProduct

[BASE URL: /shopping-cart , API VERSION: 1.0]

Performing Assessment Task 1 – Create Two Customers

API URL	/customers
HTTP Method	POST
Request Params	• firstName • lastName
Response Params	• id - Id of created customer

Performing Assessment Task 2 – Add product to first customer

API URL	/customer/add/products
HTTP Method	POST
Request Params	• customerId – id of the created customer (Returned from previous API call or can be retrieved by calling API "/customer" in Customer Controller) • productIds – Existing Product Id's can be retrieved via API "/product" on Product Controller.
Response Params	• cartId – Customer cart id

Performing Assessment Task 3 – Calculate Amounts

API URL	/customer/update/cart
HTTP Method	PATCH
Request Params	• cartId – Customer's cart id (Returned from previous API call or can be retrieved by calling API "/customer" in Customer Controller)
Response Params	• status

Performing Assessment Task 4 – Add products to second customer

Perform the same API twice as in Task 2.

Performing Assessment Task 5 – Calculate Amounts

Perform the same API as in Task 3.

Application Features

Additional Features

- Additional APIs implemented.
  - Get all Customers API
  - Get all Products API
  - Add Product API
- Product’s available quantity handling implementation.
- Product Titles managed separately in both application layer and data layer.
- High-level Architecture Diagram
- ER Diagram

Improvements and Optimizations

- Swagger implementation
  - API Docs implementation URL : http://localhost:9090/shopping-cart/v2/api-docs
  - API Docs UI implementation URL : http://localhost:9090/shopping-cart/swagger-ui.html
- Application loggers
  - Rollback policy implementation
  - MDC logging with MDC Filter
- Application specific property file implementation – “shopping-cart.properties”
- Exception Handling
  - Business Exception implementation
  - Global Exception Handler implementation
- Spring Boot Data Validation Constraint Layer implementation for API Payload Request classes.
- Application specific property file added “shopping-cart.properties”
- Technical Diagrams
  - ER Diagram
  - Application Architecture Diagram – High Level