

# Demo Subscription Service

## API reference guide.

Demo-Subscription-Service is a Spring Boot application that provides REST interfaces for subscribing to the products and manage user subscriptions. It supports the following functionalities:

- Fetch the list of available products and filter them based on the applicable voucher code.
- Fetch the information on a single product.
- Subscribe to a product with a voucher code if applicable.
- Fetch all the subscriptions made by the customer.
- Pause, resume and cancel the subscription on a product.

## Rest Endpoints:

### 1. GET /api/product[?voucherCode=FLAT10]

Retrieves the list of products. Products can be filtered based on a valid voucher code. Returns an error if the voucher code is invalid.

Auth: None

Example: <http://localhost:8089/api/product> OR <http://localhost:8089/api/product?voucherCode=NY25OFF>

Response:

```
[
  {
    "productId": 1,
    "name": "Yoga Basics",
    "description": "Full-Body Yoga for Beginners",
    "trainingLevel": "Easy",
    "price": 400.00,
    "status": true,
    "durationInWeeks": 15,
    "accessType": 1,
    "vouchers": [
      {
        "voucherId": 1,
        "code": "FLAT10",
        "description": "Flat 10% off",
        "percentageDiscount": 10,
        "expiryTimestamp": "2021-02-14T06:29:59.000+00:00"
      }
    ]
  },
  {
    "productId": 2,
    "name": "Get In Shape",
    "description": "A Mix of Cardio and Full-Body Toning",
    "trainingLevel": "Medium",
    "price": 367.00,
    "status": true,
    "durationInWeeks": 10,
    "accessType": 1,
```

## 2. GET /api/product/{productId}

Fetch information related to a single product. Returns an error if product id is invalid.

Auth: None

Example: <http://localhost:8089/api/product/5>

Response:

```
{
  "productId": 5,
  "name": "Body Shape",
  "description": "Total-Body Toning",
  "trainingLevel": "Medium",
  "price": 310.00,
  "status": true,
  "durationInWeeks": 12,
  "accessType": 2,
  "vouchers": [
    {
      "voucherId": 2,
      "code": "NY250FF",
      "description": "New year sale! 25% Off",
      "percentageDiscount": 25,
      "expiryTimestamp": "2021-02-28T06:29:59.000+00:00"
    }
  ]
}
```

## 3. POST /api/subscription/subscribe

Subscribe to a product with a voucher code if applicable. This endpoint is open to only premium and trial customers. Returns error if –

- Invalid customer or customer has no role as mentioned below.
- Product not found.
- Voucher code is invalid.
- If customer has already subscribed to this product.

Auth: Authenticated customer having role – CUSTOMER, CUSTOMER\_ON\_TRIAL

Example: <http://localhost:8089/api/subscription/subscribe>

Authorization:

|                               |                 |   |
|-------------------------------|-----------------|---|
| <b>TYPE</b>                   | <b>Username</b> | donald@gmail.com                                  |
| Basic Auth                    | <b>Password</b> | duck  |
| The authorization header will |                 | <input checked="" type="checkbox"/> Show Password |

Request:

```
{
  "requestId": "request001",
  "productId": 5,
  "startTimestamp": 1613804400000,
  "voucherCode": "NY250FF"
}
```

Response:

```
{
  "subscriptionId": 1,
  "startTimestamp": "2021-02-20T07:00:00.000+00:00",
  "endTimestamp": "2021-05-15T07:00:00.000+00:00",
  "lastPausedTimestamp": null,
  "isActive": true,
  "isCancelled": false,
  "createdTimestamp": "2021-02-14T04:55:41.014+00:00",
  "updatedTimestamp": "2021-02-14T04:55:41.014+00:00",
  "product": {
    "productId": 5,
    "name": "Body Shape",
    "description": "Total-Body Toning",
    "trainingLevel": "Medium",
    "price": 310.00,
    "durationInWeeks": 12,
    "accessType": 2
  },
  "payment": {
    "paymentId": 1,
    "amount": 232.50,
    "mode": "Credit Card",
    "status": 1
  }
}
```

#### 4. GET /api/subscription

Fetch all the subscriptions made by the customer. Returns error if invalid customer or customer has no roles as mentioned below.

Auth: Authenticated customer having role – CUSTOMER, CUSTOMER\_ON\_TRIAL

Example: <http://localhost:8089/api/subscription>

Authorization:

|                               |                 |   |
|-------------------------------|-----------------|---|
| <b>TYPE</b>                   | <b>Username</b> | donald@gmail.com                                  |
| Basic Auth                    | <b>Password</b> | duck  |
| The authorization header will |                 | <input checked="" type="checkbox"/> Show Password |

Response: (List of subscriptions made by the customer)

```
{
  "subscriptionId": 1,
  "startTimestamp": "2021-02-20T07:00:00.000+00:00",
  "endTimestamp": "2021-05-15T07:00:00.000+00:00",
  "lastPausedTimestamp": null,
  "isActive": true,
  "isCancelled": false,
  "createdTimestamp": "2021-02-14T04:55:41.014+00:00",
  "updatedTimestamp": "2021-02-14T04:55:41.014+00:00",
  "product": {
    "productId": 5,
    "name": "Body Shape",
    "description": "Total-Body Toning",
    "trainingLevel": "Medium",
    "price": 310.00,
    "durationInWeeks": 12,
    "accessType": 2
  },
  "payment": {
    "paymentId": 1,
    "amount": 232.50,
    "mode": "Credit Card",
    "status": 1
  }
}
```

## 5. PATCH /api/subscription/{subscriptionId}/pause

Pause a valid subscription made by the customer. This endpoint is open to premium customers only. Returns error if –

- Invalid customer or customer has no role as mentioned below.
- Subscription not linked to the customer actioning it.
- If subscription is cancelled.
- If customer has already paused this subscription.

Auth: Authenticated customer having role – CUSTOMER

Example: <http://localhost:8089/api/subscription/1/pause>

Authorization:

|                               |   |                  |
|-------------------------------|---|------------------|
| <b>TYPE</b>                   | <b>Username</b>                                   | donald@gmail.com |
| Basic Auth                    | <b>Password</b>                                   | duck             |
| The authorization header will | <input checked="" type="checkbox"/> Show Password |                  |

Response:

```
{
  "subscriptionId": 1,
  "startTimestamp": "2021-02-20T07:00:00.000+00:00",
  "endTimestamp": "2021-05-15T07:00:00.000+00:00",
  "lastPausedTimestamp": "2021-02-14T05:30:35.583+00:00",
  "isActive": false,
  "isCancelled": false,
  "createdTimestamp": "2021-02-14T04:55:41.014+00:00",
  "updatedTimestamp": "2021-02-14T05:30:35.583+00:00",
  "product": {
    "productId": 5,
    "name": "Body Shape",
    "description": "Total-Body Toning",
    "trainingLevel": "Medium",
    "price": 310.00,
    "durationInWeeks": 12,
    "accessType": 2
  },
  "payment": {

```

## 6. PATCH /api/subscription/{subscriptionId}/resume

Resume a valid subscription previously paused by the customer. This endpoint is open to premium customers only.

Returns error if –

- Invalid customer or customer has no role as mentioned below.
- Subscription not linked to the customer actioning it.
- If subscription is cancelled.
- If the subscription is already ongoing.

Auth: Authenticated customer having role – CUSTOMER

Example: <http://localhost:8089/api/subscription/1/resume>

Authorization:

|                               |   |                  |
|-------------------------------|---|------------------|
| <b>TYPE</b>                   | <b>Username</b>                                   | donald@gmail.com |
| Basic Auth                    | <b>Password</b>                                   | duck             |
| The authorization header will | <input checked="" type="checkbox"/> Show Password |                  |

Response: (Note – endTimeStamp is updated with the difference in days between last paused date and current date)

```
{
  "subscriptionId": 1,
  "startTimestamp": "2021-02-20T07:00:00.000+00:00",
  "endTimestamp": "2021-05-15T07:00:00.000+00:00",
  "lastPausedTimestamp": "2021-02-14T05:30:35.583+00:00",
  "isActive": true,
  "isCancelled": false,
  "createdTimestamp": "2021-02-14T04:55:41.014+00:00",
  "updatedTimestamp": "2021-02-14T05:36:31.722+00:00",
  "product": {
    "productId": 5,
    "name": "Body Shape",
    "description": "Total-Body Toning",
    "trainingLevel": "Medium",
    "price": 310.00,
    "durationInWeeks": 12,
    "accessType": 2
  },
  "payment": {
```

## 7. DELETE /api/subscription/{subscriptionId}

Cancel a valid and active subscription. Returns error if invalid customer or customer has no roles as mentioned below. Returns error if –

- Invalid customer or customer has no role as mentioned below.
- Subscription not linked to the customer actioning it.
- If subscription is cancelled already.

Auth: Authenticated customer having role – CUSTOMER, CUSTOMER\_ON\_TRIAL

Example: <http://localhost:8089/api/subscription/1>

Authorization:

|                               |   |                  |
|-------------------------------|---|------------------|
| <b>TYPE</b>                   | <b>Username</b>                                   | donald@gmail.com |
| Basic Auth                    | <b>Password</b>                                   | duck             |
| The authorization header will | <input checked="" type="checkbox"/> Show Password |                  |

Response:

```
1 true
```

## Starting the application in docker environment:

To start the application in docker env, execute the below commands. The application will start with 'qa' profile and connects to MySql db.

```
cd subscription-service-demo
```

```
mvn clean package
```

```
docker-compose -f docker-compose.yaml up
```

## Starting the application in local:

To start the application in local, run `com.tst.shop.subscription.SubscriptionServiceApplication` as Java application on passing environment variable: `spring.profiles.active=local`.

**Application health:** Application health and info can be monitored via actuator management context.

<http://localhost:8089/actuator/health>

<http://localhost:8089/actuator/info>

**H2 In-memory DB:** Local profile uses H2 in-memory database to store the data which can be accessed using H2 console. To open the H2 console, open <http://localhost:8089/api/h2> in the browser. The H2 console window should appear as follows:

English Preferences Tools Help

Login

Saved Settings: Generic H2 (Embedded)

Setting Name: Generic H2 (Embedded) Save Remove

Driver Class: org.h2.Driver

JDBC URL: jdbc:h2:mem:Subscription

User Name: test

Password:

Connect Test Connection

Initial data set:

### Product table:

SELECT \* FROM PRODUCT;

| PRODUCTID | ACCESSTYPE | DESCRIPTION  | DURATIONINWEEKS | NAME              | PRICE  | STATUS | TRAININGLEVEL |
|-----------|------------|--|-----------------|-------------------|--------|--------|---------------|
| 1         | 1          | Full-Body Yoga for Beginners                           | 15              | Yoga Basics       | 400.00 | TRUE   | Easy          |
| 2         | 1          | A Mix of Cardio and Full-Body Toning                   | 10              | Get In Shape      | 367.00 | TRUE   | Medium        |
| 3         | 2          | Holistic Training for Posture and Movement             | 8               | Pure Pilates      | 290.00 | TRUE   | Easy          |
| 4         | 2          | Fat-Burning Workouts to Get You Lean                   | 6               | Fat Burner        | 280.00 | TRUE   | Medium        |
| 5         | 2          | Total-Body Toning                                      | 12              | Body Shape        | 310.00 | TRUE   | Medium        |
| 6         | 2          | Core Strength Training for Sculpted Abs                | 12              | Six Pack          | 430.00 | TRUE   | Hard          |
| 7         | 2          | Calming and Relaxing Restorative Yoga Flows            | 6               | Yoga Recover      | 180.00 | TRUE   | Easy          |
| 8         | 2          | Full-Body Dumbbell Circuit Training for Beginners      | 9               | Full Body Circuit | 384.00 | TRUE   | Easy          |
| 9         | 2          | Dynamic Stretches to Increase Flexibility and Mobility | 7               | Mobility          | 340.00 | TRUE   | Medium        |
| 10        | 1          | A 4-Week Program Perfect for Beginners                 | 4               | Full-Body Starter | 130.00 | TRUE   | Easy          |

(10 rows, 2 ms)

### Customer table:

SELECT \* FROM CUSTOMER;

| CUSTOMERID | ACTIVE | ADDRESS                | EMAIL            | NAME          | PASSWORD | PHONE      | ROLE                   |
|------------|--------|------------------------|------------------|---------------|----------|------------|------------------------|
| 1          | TRUE   | 230, West road, Berlin | donald@gmail.com | Donald Duck   | duck     | 7866554422 | ROLE_CUSTOMER          |
| 2          | TRUE   | 230, West road, Berlin | leo@gmail.com    | Leonardo D    | caprio   | 7866554422 | ROLE_USER              |
| 3          | TRUE   | 230, West road, Berlin | tom@gmail.com    | Tom Cruise    | mission  | 7866554422 | ROLE_CUSTOMER_ON_TRAIL |
| 4          | TRUE   | 230, West road, Berlin | robin@gmail.com  | Robin Goodman | batman   | 7866554422 | ROLE_CUSTOMER          |

(4 rows, 2 ms)

### Voucher and Voucher\_Product tables:

SELECT \* FROM VOUCHER;

| VOUCHERID | CODE    | DESCRIPTION            | EXPIRYTIMESTAMP     | PERCENTAGEDISCOUNT |
|-----------|---------|------------------------|---------------------|--------------------|
| 1         | FLAT10  | Flat 10% off           | 2021-02-14 11:59:59 | 10                 |
| 2         | NY25OFF | New year sale! 25% Off | 2021-02-28 11:59:59 | 25                 |
| 3         | GET5D   | 5% Discount, Hurry!    | 2021-01-28 12:00:00 | 5                  |

(3 rows, 0 ms)

SELECT \* FROM VOUCHER\_PRODUCT;

| VOUCHERS_VOUCHERID | PRODUCTS_PRODUCTID |
|--------------------|--------------------|
| 1                  | 1                  |
| 1                  | 2                  |
| 1                  | 3                  |
| 2                  | 4                  |
| 2                  | 5                  |
| 2                  | 6                  |
| 3                  | 7                  |
| 3                  | 8                  |

(8 rows, 1 ms)

**Unit testing:** SpringRunner, Junit4 and Mockito has been used for unit testing. Due to the time constraint, I have demonstrated writing test cases for the 'Pause Subscription' functionality of SubscriptionService class only.

The unit testing status is as follows:

