

Grover's Fullstack Coding Challenge

Introduction

Welcome to the Fullstack Grover's Subscription Management code challenge! The live coding interview pretends to assess your skills in both frontend and backend development. You will be **tasked with implementing various features** related to subscription management and **build on top of our project**. This challenge is based on a simplified model of our business to maintain focus and manageability. It is built with a similar stack found in some of our services (Typescript, React, NextJS, REST API).

When starting, the interviewer will give you a link to join a **VSCode Live Share** session where you will find the project running with all dependencies installed. We recommend taking a few minutes to understand and navigate through the project. During the interview feel free to ask any questions if you need clarification on any aspect of the requirements.

Good luck with the challenge!

Objective

As a candidate, you will be working on our subscription management view. At Grover, we rent products to our customers. Each rented product becomes a subscription, involving a monthly payment. The subscription remains active from the time the product arrives in the customer's hands, and when it's terminated the customer returns the asset to Grover to be recirculated.

User Stories to implement during the challenge

1. As a user, I want to be able to view my subscription list, so that I can easily keep track of my subscriptions.
2. As a user, I want to be able to extend my subscriptions, so that I can keep the asset for a longer period.

Initial project & Design Handoff

Project starting point



Apple iPhone 14 Pro Max - 128GB - Dual SIM

⌚ Active - until 02.10.2023

€114.90 per month

Extend rental

Design Handoff



Apple AirPods Pro 2 In-ear Bluetooth Headphones

⌚ Ended



Apple iPhone 14 Pro Max - 128GB - Dual SIM

⌚ Active - until 02.10.2023

€114.90 per month

Extend rental to 6 months for €89.90 per month



Grover Reach E-Scooter

⌚ In Transit

€18.90 per month

Reference

Project initial Tech Stack

The interview will start with a project boilerplate which includes everything that you will need to accomplish the goals.

- Frontend
 - NextJS 14.x with "Pages Router"
 - React 18.x
 - Styled Components 6.x
 - Vitest
- Backend
 - NextJS 14.x with "API Route Handler"
 - Prisma 5.22.x + SQLite
 - Vitest
- Miscellanea installed libraries
 - date-fns
 - react-icons
 - uuid

Project folder structure

```
├── __test__
│   └── api
├── public
└── src
    ├── components
    │   ├── Button
    │   ├── GroverLogo
    │   ├── SubscriptionCard
    │   └── SubscriptionWrapper
    ├── lib
    │   ├── currency.ts
    │   ├── fetch.ts
    │   ├── imageOptimizedUrl.ts
    │   └── prisma.ts
    ├── pages
    │   ├── _app.tsx
    │   ├── _document.tsx
    │   ├── api
    │   │   └── subscriptions
    │   │       ├── [sid].ts
    │   │       └── index.ts
    │   └── index.tsx
```

Database tables



- Subscription: Stores subscriptions, status and details of the subscription
- Products: List of products with title and image
- Rental Plans: Subscription prices for each product

Subscription lifecycle

A subscription starts by the customer placing an order, and it gets activated when the customer receives the product from our warehouse. The subscription will last until the end of the months selected by the customer.

- **DRAFT:** Customer is still customizing the subscription
- **FULFILLING:** Customer placed the order and our warehouse is working to deliver the product
- **ACTIVE:** Customer received the product and subscription is now active
- **TERMINATED:** Customer finished the subscription and returned the product

A customer could extend their subscription only if the subscription is active and the desired extension period is longer than their current subscription period.

Available API Endpoints

- `GET /api/subscriptions` List of subscriptions for the user
- `GET /api/subscriptions/[subscriptionId]` A specific subscription

Example of `GET /api/subscriptions`

```
[
  {
    "id": "41af8909-6dab-4d81-b18f-d495c0fd7c6b",
    "referenceId": "G-YKFLX6M6",
    "createdAt": "2023-06-27T14:07:46.898Z",
    "updatedAt": "2023-07-04T19:32:49.682Z",
    "activatedAt": "2023-07-02T19:32:49.680Z",
    "activeUntil": "2023-10-02T19:32:49.681Z",
    "terminatedAt": null,
    "terminationReason": null,
    "terminationComment": null,
    "rentalPeriod": 3,
    "monthlyPrice": 11490,
    "state": "ACTIVE",
    "productId": "b79b8a3c-ec52-44ec-b753-1da0b82d593b",
    "product": {
      "id": "b79b8a3c-ec52-44ec-b753-1da0b82d593b",
      "slug": "apple-smartphone-iphone-14-pro-max-6gb-128gb",
      "title": "Apple iPhone 14 Pro Max - 128GB - Dual SIM",
      "coreAttribute": "6.7\" OLED, Triple Rear Camera, 6GB RAM, Apple A16
Bionic, 5G",
      "image": "gkqvy3mrt8s4gfakidf9.png",
      "rentalPlans": [
        {
          "id": "9f9e7cfd-d881-478d-b527-2220d7e31405",
          "period": 1,
          "price": 15990,
          "productId": "b79b8a3c-ec52-44ec-b753-1da0b82d593b"
        },
        {
          "id": "6549251c-e974-4eed-97d4-be97151844bf",
          "period": 3,
          "price": 11490,
          "productId": "b79b8a3c-ec52-44ec-b753-1da0b82d593b"
        },
        {
          "id": "49fd9c6a-d354-4bf7-b2a6-ec3644acedb8",
          "period": 6,
          "price": 8990,
          "productId": "b79b8a3c-ec52-44ec-b753-1da0b82d593b"
        },
        {
          "id": "050975e1-cbc2-4613-a4ad-93fab31a770d",
          "period": 12,
          "price": 7490,
          "productId": "b79b8a3c-ec52-44ec-b753-1da0b82d593b"
        }
      ]
    }
  }
]
```

```
    ]  
  },  
},  
]
```

Testing

The project includes a basic test setup (for both React & API) which you could extend if desired.