Take Home Assignment

About PiePay

At PiePay, we're solving a problem you've likely faced yourself—finding a great deal on an e-commerce platform, only to realize the best discount isn't available on your card.

Millions of online shoppers miss out on bank offers simply because they don't have the right credit card. That's where PiePay comes in. We help users unlock the best bank offers without needing to own specific cards.

Objective

Build a simple backend service in a language of your choice that can detect offers listed on the payment page of Flipkart and store them in a database. This backend service also offers functionality to calculate the best (highest) discount amount for given payment details.

Time Allotment

Less than 4 hours.

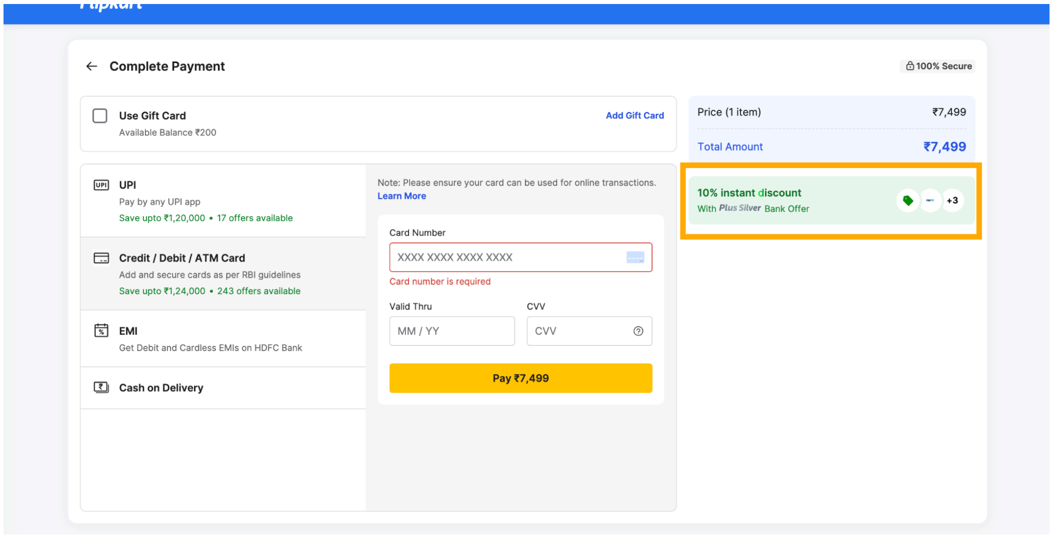
Development Tools

Feel free to use any development tool including AI tools like Cursor, ChatGPT etc. to complete the assignment.

Assignment

Part 1: Understanding Flipkart's Offer API

You need to first identify and understand the Flipkart's api which provides the offers listed on the Flipkart payment page when you try to place an order through the Flipkart Laptop Web App (not mobile app). You need to inspect the network activity to identify the api. Check the attached image to understand the location of the section (highlighted box) where flipkart provides the offers in case of a Laptop web app.



Complete Payment

100% Secure

□ Use Gift Card
Available Balance ₹200

Add Gift Card

Price (1 item) ₹7,499

Total Amount ₹7,499

10% instant discount
With Plus Silver Bank Offer
+3

UPI
Pay by any UPI app
Save upto ₹1,20,000 • 17 offers available

Credit / Debit / ATM Card
Add and secure cards as per RBI guidelines
Save upto ₹1,24,000 • 243 offers available

EMI
Get Debit and Cardless EMIs on HDFC Bank

Cash on Delivery

Note: Please ensure your card can be used for online transactions.
Learn More

Card Number
XXXX XXXX XXXX XXXX
Card number is required

Valid Thru
MM / YY

CVV
CVV

Pay ₹7,499

Part 2: Create Offers API

Create an api endpoint which receives the complete response of the Flipkart’s offer api in request payload and then identify the offers from the payload and store identified offers in the database.

- **Endpoint:** `POST /offer`
- **Action:** This endpoint will receive a JSON payload containing the response of the Flipkart’s offer api. It will identify all the offers present in the payload and store them in the database. Make sure to pick and store all the necessary information related to offers like banks etc.
- **Storage:** Persist the identified offer in a database of your choice.
- **Response:** Return a JSON object with the no of offers identified from payload and no of new offers created. These both numbers may not be the same if one or more duplicate offers are already present in the database, then you don’t have to insert those offers again.

Example Request Body:

JSON

```
{
 "flipkartOfferApiResponse": {
          //JSON containing the response
 }
}
```

Example Response Body:

JSON

```
{
 "noOfOffersIdentified": 5,
 "noOfNewOffersCreated": 3,
}
```

Part 3: Find Highest Discount Amount API

Now that you're storing offers, the next step is to make them useful. Implement an API endpoint that receives the payment related information and identifies the best offer applicable and calculate the discount amount. The offer which gives the highest discount among all applicable offers will be considered the best offer.

- **Endpoint:** `GET /highest-discount`
- **Query Parameters:**
    1. `amountToPay`: `number` - The final amount which the user needs to pay to Flipkart to place an order.
    2. `bankName`: `string` - Name of the bank as per Flipkart standards (AXIS, IDFC etc.)

- **Action:**
    1. Query the database to fetch a list of offers which support bankName (received in payload).
    2. Find the best offer and calculate the discount amount
- **Response:** Return a JSON object with the calculated discount amount.
- **Notes:** Flipkart considers a lot of parameters to calculate discount amount. So, it's ok if the highest discount amount calculated by you doesn't match the highest discount amount shown by flipkart.

Example Request:

GET /highest-discount?amountToPay=10000&bankName=AXIS

Example Response Body:

JSON

```
{
 "highestDiscountAmount": 500
}
```

Part 4: (Bonus) Support For Payment Instrument

Add the support for payment instruments (CREDIT and EMI_OPTIONS) (You will understand what payment instruments are once you understand the Flipkart's offer API)

- **Modify:** Update both endpoints.
- **Action:**
    - Update the **POST /offer** api to also identify the payment instruments supported by offer and store them in the database.
    - Update the **GET /highest-discount** api as follows
        - Also receive paymentInstrument in the request payload
        - Query the database to fetch a list of offers which support bankName and paymentInstrument received in payload
        - Find the best offer and calculate the discount amount and return calculated discount amount in response

What to Submit

- A link to a Git repository (use your full name or roll no as repository name) with your solution. Make the git repo public so that we can access it.
- A `README.md` file that includes:

1. Clear instructions on how to set up the project (install dependencies, run migrations, start the server).
2. Assumptions you made to complete the assignment
3. A brief explanation of your design choices (e.g., why you chose a specific framework, database schema decisions).
4. A short note on how you would scale the **GET /highest-discount** endpoint to handle 1,000 requests per second.
5. A short note on what you will improve if you had more time to complete the assignment.

Note: This assignment uses Flipkart's offer API purely for evaluation purposes. We do not support or encourage any misuse of their APIs—please use them responsibly and only as intended for this task.