API Assignment

Adrian Boo

1. Consuming an API (Open Banking) (30%)

After you have seen what was done for the Barclays banking platform, make calls to 2 APIs locally (after creating a mock server) without using the example APIs taught in class.

For example, the 'Card Details' and 'Check balance' examples are 2 separate APIs.

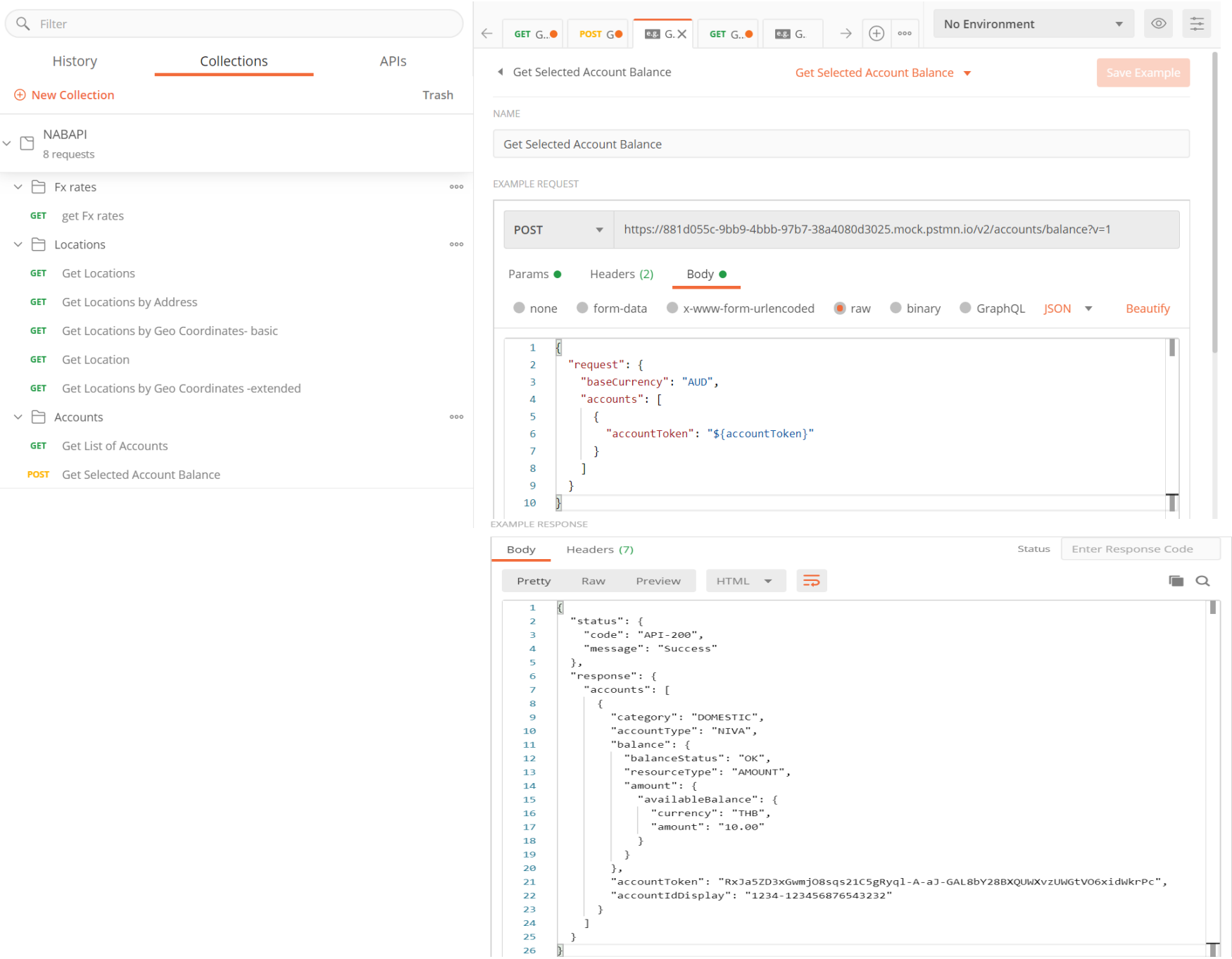
You can get the API files of a bank developer portal to accomplish this. Some examples include DBS Developer portal, Standard Chartered aXess (https://axess.sc.com), NAB Developer portal, Barclays Developer Portal.

Per function:

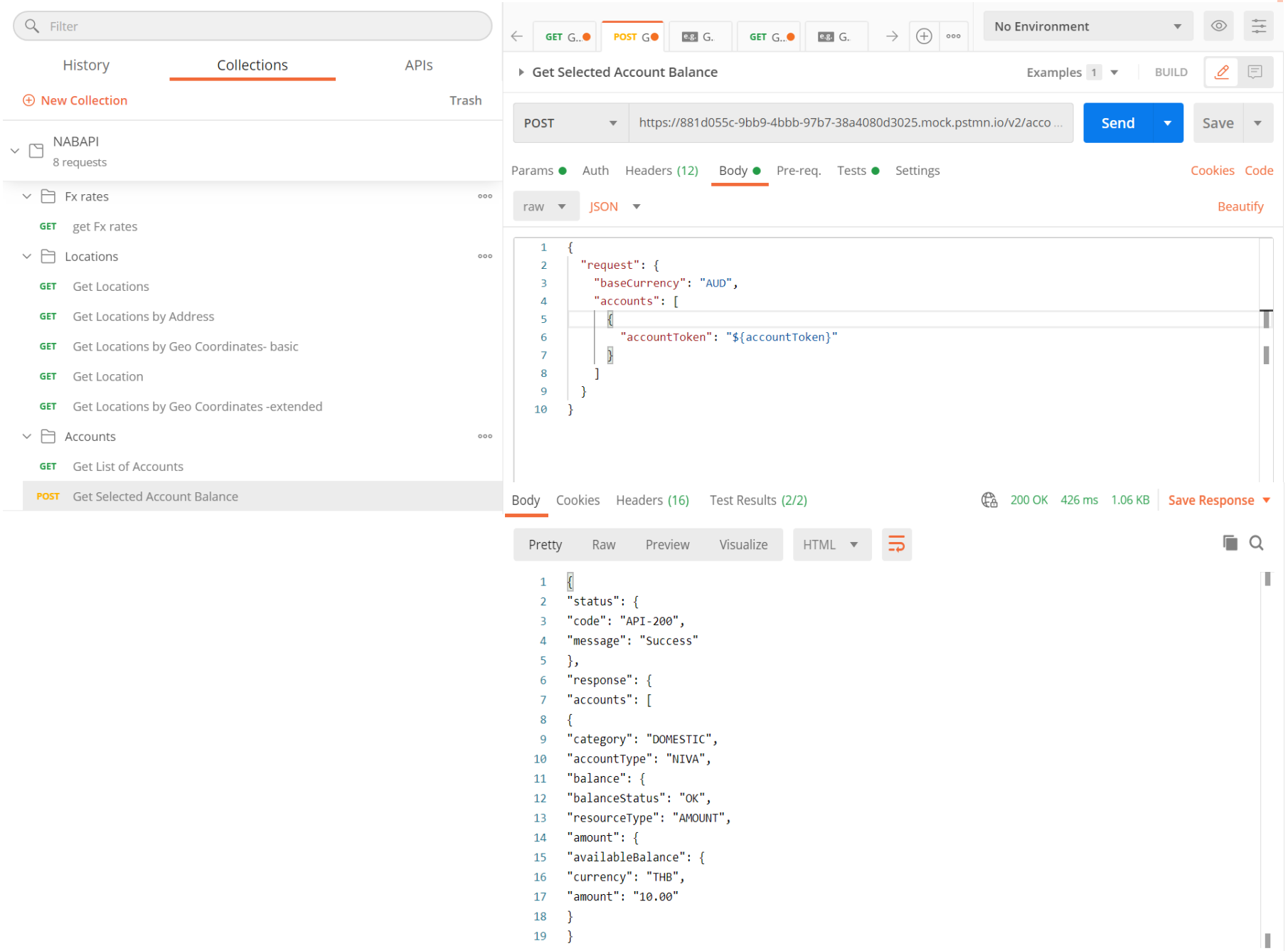
- Review the institution's API documentation
  - Describe on what functions will you be using, and from which platform. Marks will be based on clarity of description.
- Mock the API hosted via Postman
- Test the API
- (BONUS) Call the mock API from Javascript

API Name	Get Selected Account Balance
Description	Retrieve the nominated account's balance (accounts are identified by a session based accountToken- call the Get List of Accounts API to retrieve these tokens)
Platform	NAB Developer portal
Method	POST
URI	/v2/accounts/balance?v=1
Headers, Parameters, Body	Parameters: v Headers: Content-Type, User-Agent Body: baseCurrency, accountToken
Authentication & Authorisation	
Response	Success - status code: 200 OK. body: category, accountType, balance, balanceStatus, resourceType, amount, availableBalance, currency, amount, accountToken, accountIdDisplay

Postman – Get Selected Account Balance Example

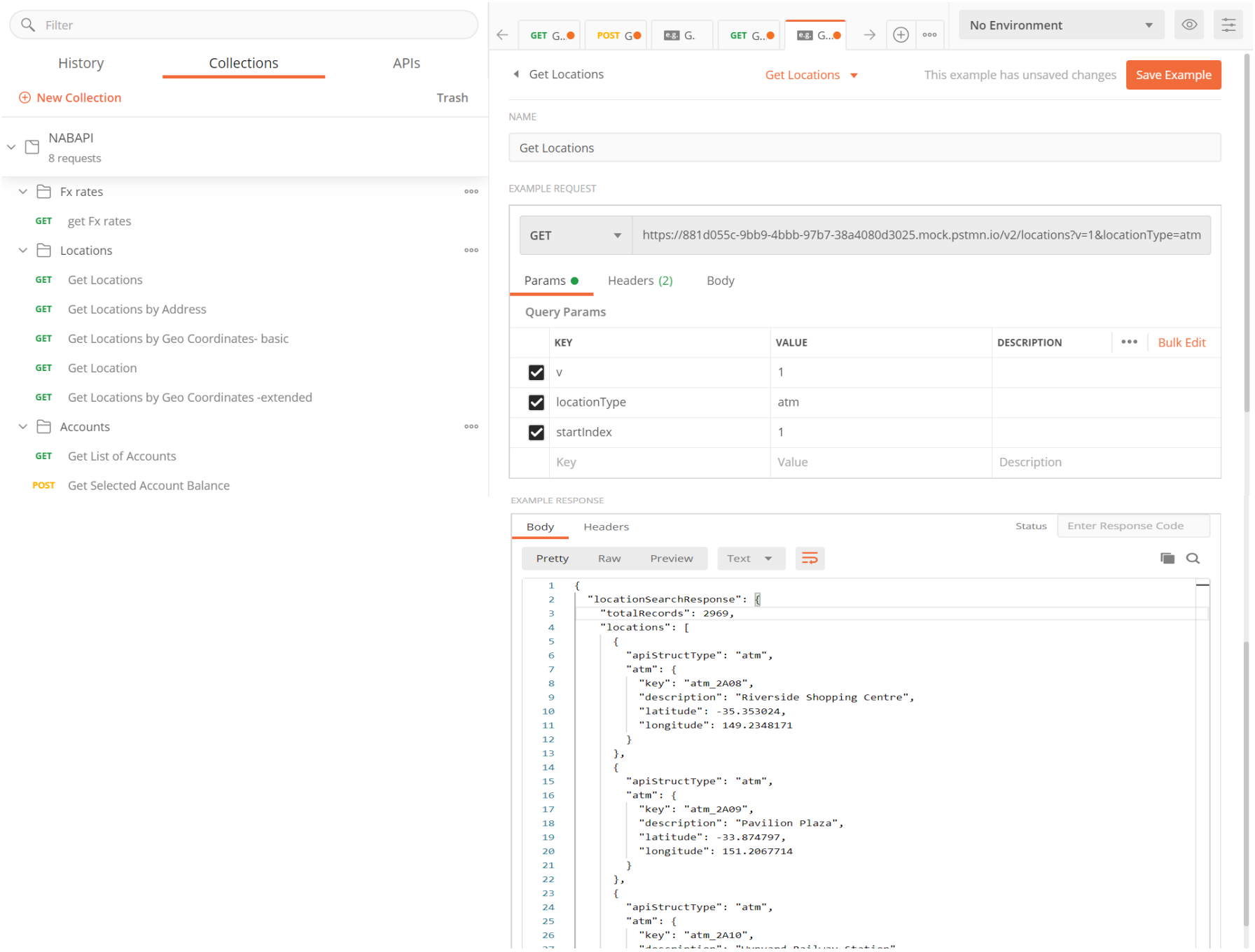


Postman – Get Selected Account Balance API

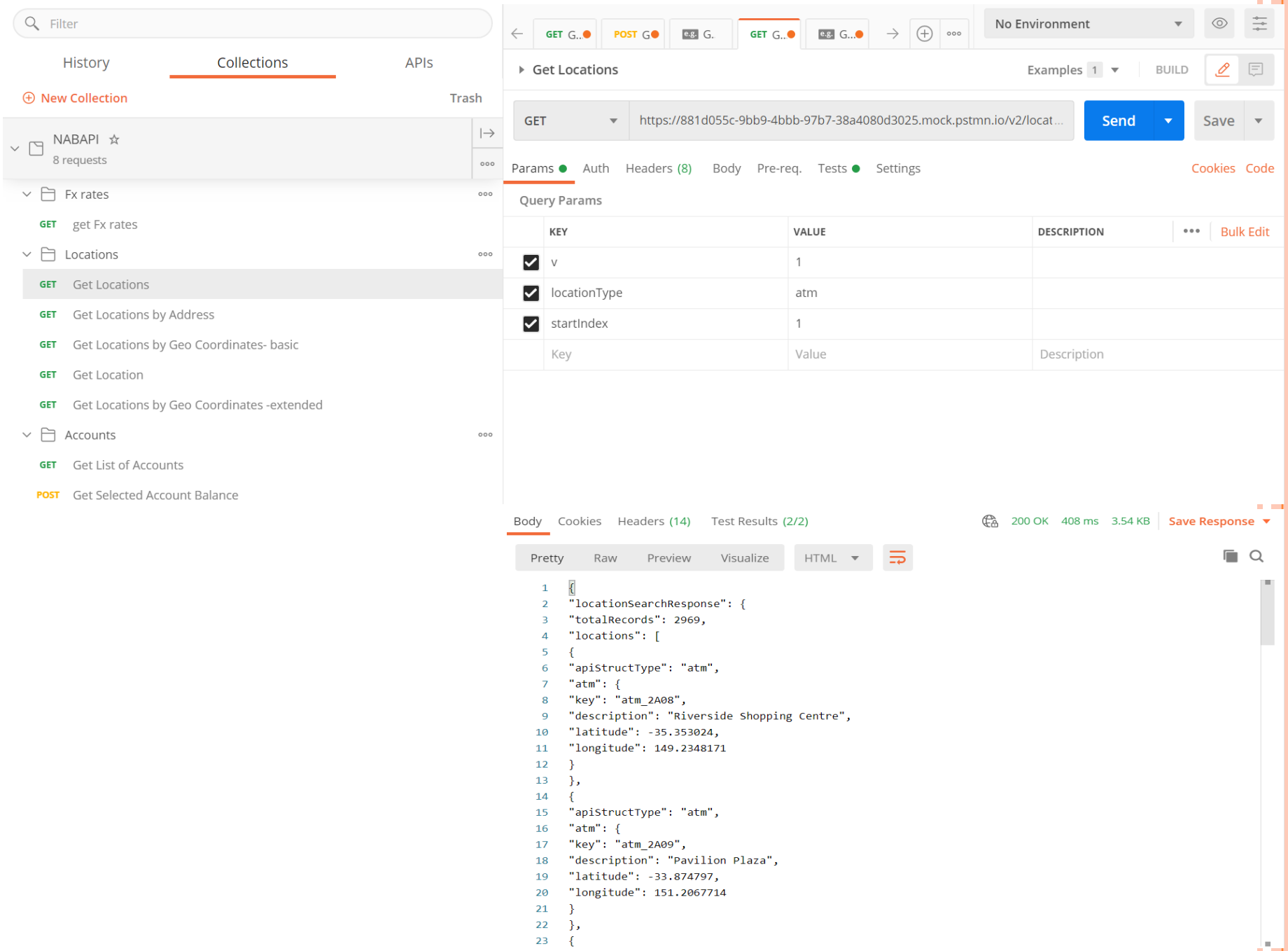


API Name	Get Locations
Description	Get list of all locations for a type such as ATM, Branch, Kiosk, Agency, Business Banking Centre, Agri Banking Centre, Health Banking Centre
Platform	NAB Developer portal
Method	GET
URI	/v2/locations?v=1&locationType=atm&startIndex=1
Headers, Parameters, Body	Parameters: v, locationType, startIndex Headers: Content-Type, User-Agent
Authentication & Authorisation	
Response	Success - status code: 200 OK. body: totalRecords, apiStructType, key, description, latitude, longitude

Postman – Get Locations Example



Postman – Get Locations API



2. Executing a Payments related API (40%)

In this task, you are to execute an API that has a payment-related function. Some examples of this include sending/receiving transactions, merchant queries on account balances, payment status enquiries. Any process that has to do with moving money around is considered payments related in the context of this question.

Here, an institution here can refer to a bank, insurance provider, robo advisor, payments gateway or even stockbrokers or financial institutions.

Example: Stripe/ VISA/ Mastercard/Paypal/ Banks on open banking platforms

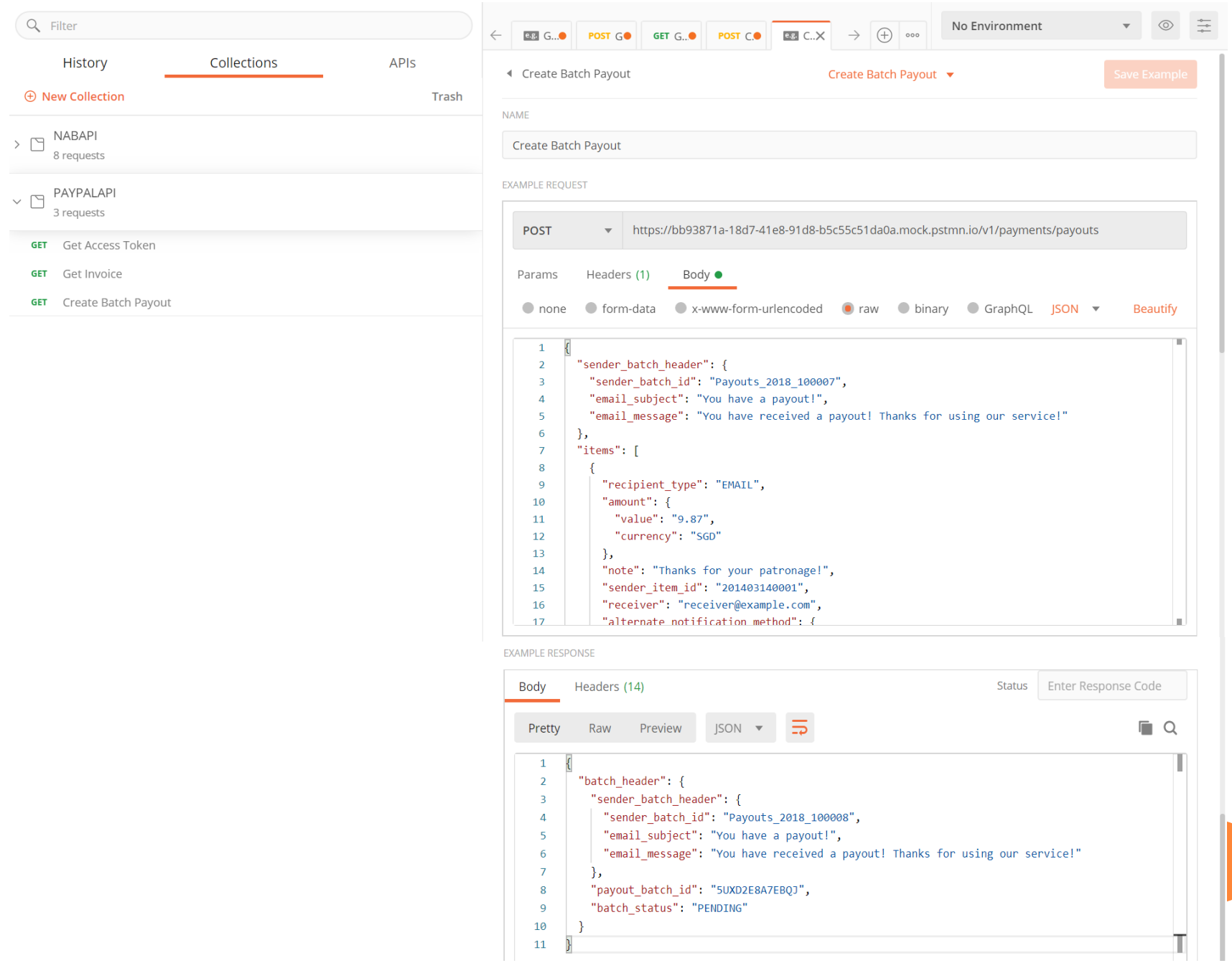
Same as the function above, make a call to an API locally (after creating a mock server) without using the example APIs taught in class.

Per function:

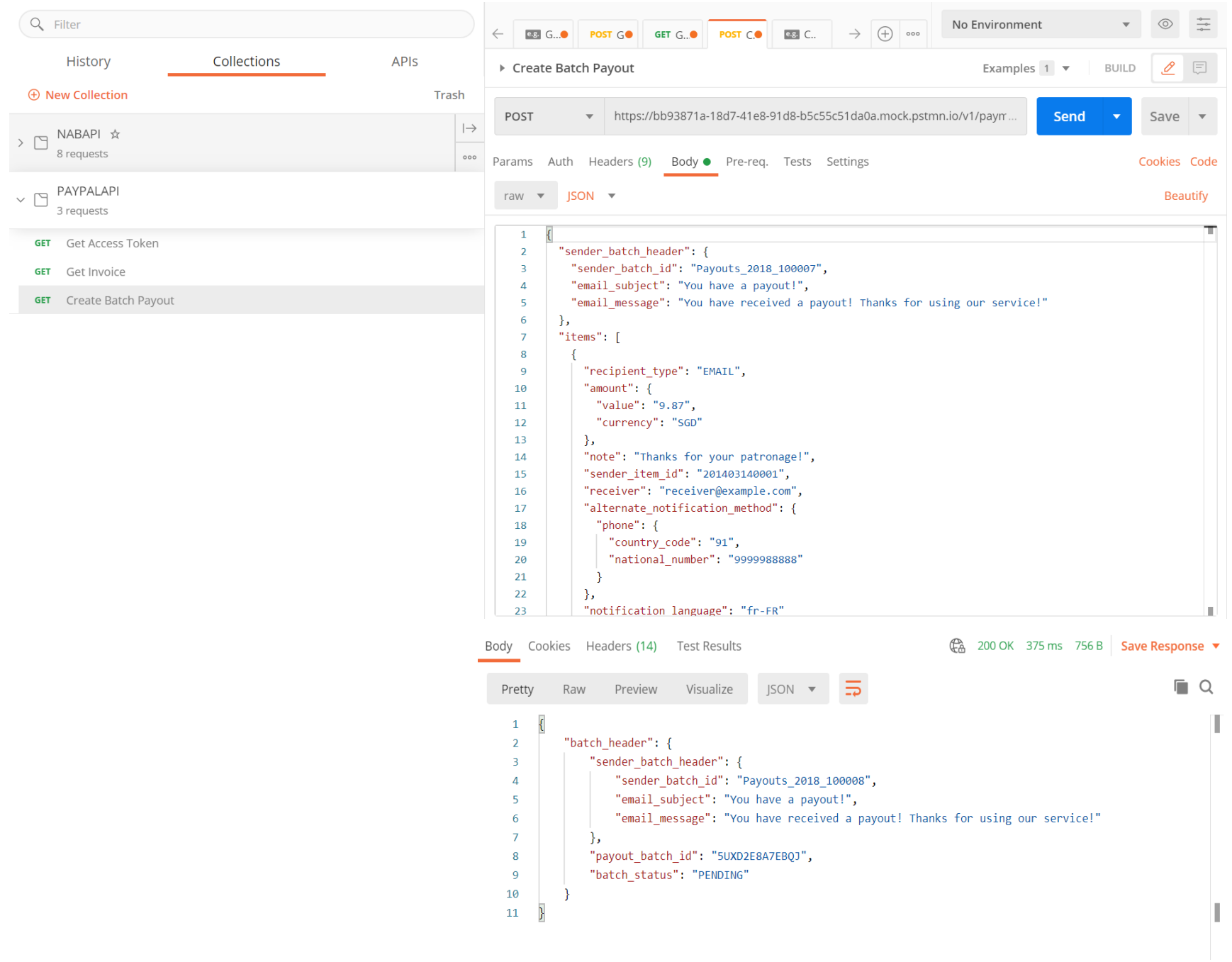
- Review the institution's API documentation
  - Describe on what functions will you be using, and from which platform. Marks will be based on clarity of description.
- Mock the API hosted via Postman
- Test the API
- (BONUS) Call the mock API from Javascript

API Name	Create Batch Payout
Description	Payouts API can be used to make payments to multiple PayPal or Venmo recipients. The Payouts API is a fast, convenient way to send commissions, rebates, rewards, and general disbursements. You can send up to 15,000 payments per call. /payouts resource can be used to create a batch payout, update the status for a batch payout, show the status of a batch payout with the transaction status and other data for individual payout items, and request approval for a batch payout. In this example, we specifically look at creating a batch payout. In the JSON request body, pass sender_batch_header and an items array. The sender_batch_header defines how to handle the payout. The items array defines the payout items. You can make payouts to one or more recipients.
Platform	PayPal Developer portal
Method	POST
URI	/v1/payments/payouts
Headers, Parameters, Body	Headers: Content-Type, User-Agent Body: sender_batch_id, email_subject, email_message, recipient_type, amount, value, currency, note, sender_item_id, receiver, country_code, national_number, notification_language
Authentication & Authorisation	
Response	Success - status code: 200 OK. body: sender_batch_id, email_subject, email_message, payout_batch_id, batch_status

Postman – Create Batch Payout Example



Postman – Create Batch Payout API



3. Designing an API (30%)

Suggest an API that could be built to expose a service. This could be a new or existing service, data, or combination of several services.

Describe why an organisation would want to publish the API, including how they would achieve a return on their investment (e.g. pay-per-use, transaction fee, or reward a customer loyalty, or gather data to provide customer insights).

Answer these questions:

- Who are the consumers of the API?
- What value would the service provide to the consumer of the API?
- Who are the end users of the client app that would consume the API?
- What additional value would the API consumer provide to their end user?
- How would your API create value for the company from the service lifecycle perspective?
- What information would be passed in the API request/response?

Suggest an API that could be built to expose a service. This could be a new or existing service, data, or combination of several services.

An API that will return the analyst buy, hold, sell call ratings for the requested stock listed in the Singapore Exchange as part of the Securities Services.

Describe why an organisation would want to publish the API, including how they would achieve a return on their investment (e.g. pay-per-use, transaction fee, or reward a customer loyalty, or gather data to provide customer insights).

By publishing the API, the bank can charge a transaction fee for each call to the API in utilizing the market analysis service.

Answer these questions:

- **Who are the consumers of the API?**

Investment portal developers

- **What value would the service provide to the consumer of the API?**

It will allow the investment portal developers to tag the call ratings for the recommended stocks to the client.

- **Who are the end users of the client app that would consume the API?**

Corporate investors

- **What additional value would the API consumer provide to their end user?**

Based on the client risk profile and sector preference, the client app will only pull out the recommended stocks and with the call ratings tagged, client can be better informed to make their investment decision.

- **How would your API create value for the company from the service lifecycle perspective?**

The API create an opportunity for monetization and drive additional revenue for the bank.

- **What information would be passed in the API request/response?**

API Request – Stock Counter

API Response – Stock Counter, Stock Name, Call Rating, Rating Reason, Date Published, Analyst Name, Reference Links.

Thank You