API Assignment

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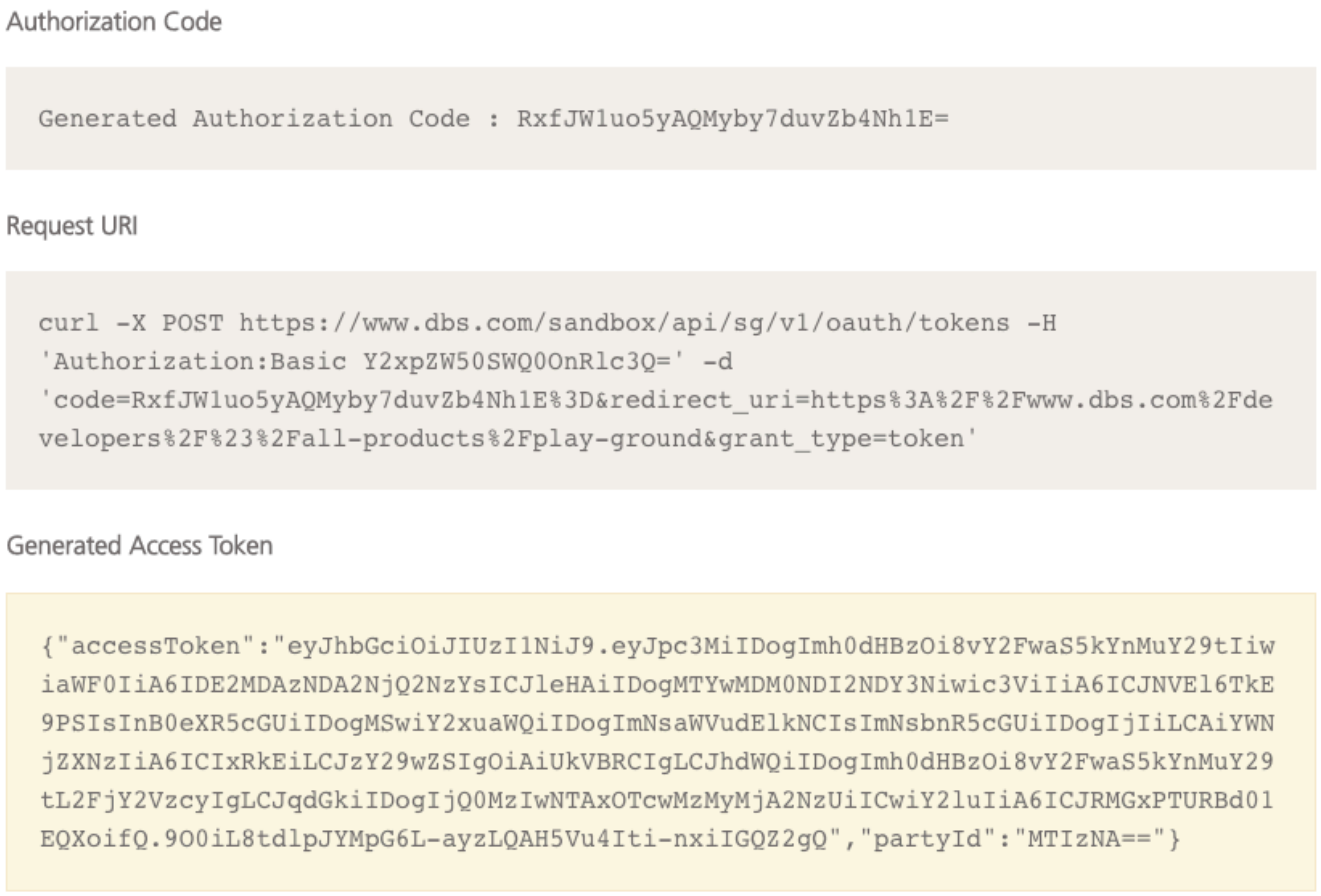
Open Banking API

DBS API (Using cURL and Postman)

- DBS provides cURLs that can be imported to Postman



Authorization Code

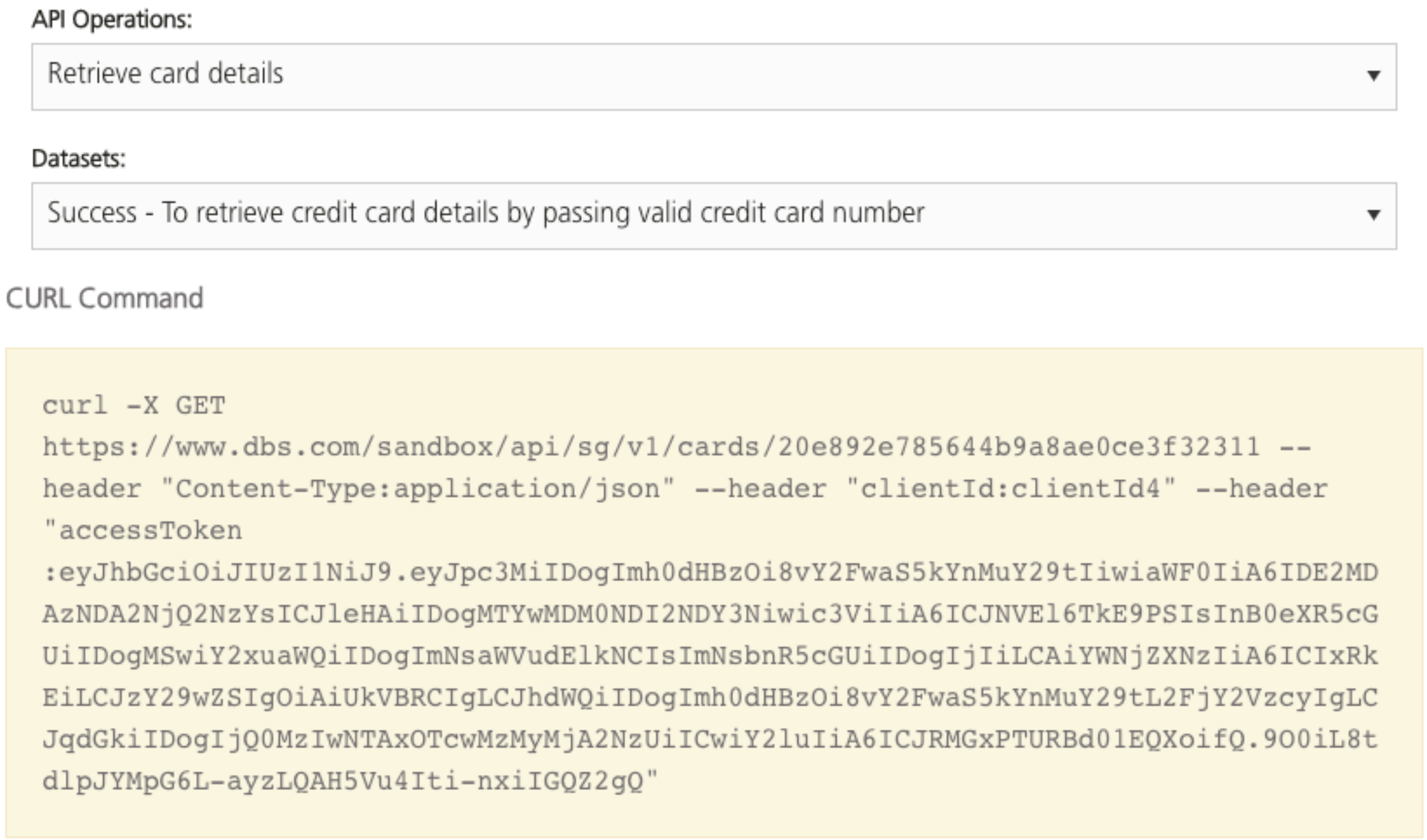
```
Generated Authorization Code : RxfJW1uo5yAQMyby7duvZb4Nh1E=
```

Request URI

```
curl -X POST https://www.dbs.com/sandbox/api/sg/v1/oauth/tokens -H
'Authorization:Basic Y2xpZW50SWQ0OnRlc3Q=' -d
'code=RxfJW1uo5yAQMyby7duvZb4Nh1E%3D&redirect_uri=https%3A%2F%2Fwww.dbs.com%2Fde
velopers%2F%23%2Fall-products%2Fplay-ground&grant_type=token'
```

Generated Access Token

```
{"accessToken":"eyJhbGciOiJIUzI1NiJ9.eyJpc3MiIDogImh0dHBzOi8vY2FwaS5kYnMuY29tIiw
iaWF0IiA6IDE2MDAzNDA2NjQ2NzYsICJleHAiIDogMTYwMDM0NDI2NDY3Niwic3ViIiA6ICJNVEl6TkE
9PSIsInB0eXR5cGUiIDogMSwiY2xuaWQiIDogImNsaWVudElkNCIsImNsbnR5cGUiIDogIjIiLCAiYWN
jZXNzIiA6ICIxRkEiLCJzY29wZSIgOiAiUkVBRCIgLCJhdWQiIDogImh0dHBzOi8vY2FwaS5kYnMuY29
tL2FjY2VzcyIgLCJqdGkiIDogIjQ0MzIwNTAxOTcwMzMyMjA2NzUiICwiY2luIiA6ICJRMGxPTURBd01
EQXoifQ.9O0iL8tdlpJYMpG6L-ayzLQAH5Vu4Iti-nxiIGQZ2gQ","partyId":"MTIzNA=="}
```



API Operations:

Retrieve card details ▾

Datasets:

Success - To retrieve credit card details by passing valid credit card number ▾

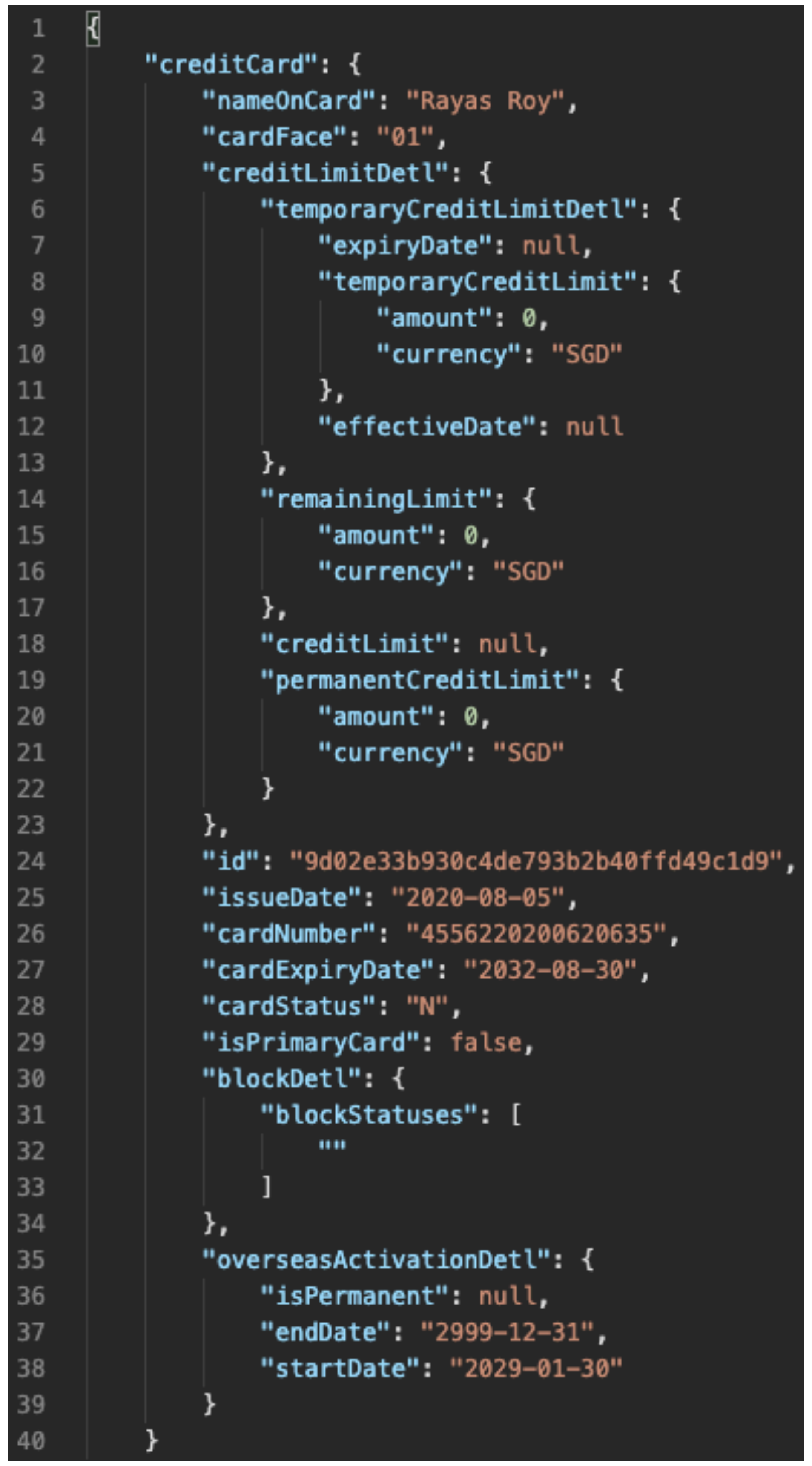
CURL Command

```
curl -X GET
https://www.dbs.com/sandbox/api/sg/v1/cards/20e892e785644b9a8ae0ce3f32311 --
header "Content-Type:application/json" --header "clientId:clientId4" --header
"accessToken
:eyJhbGciOiJIUzI1NiJ9.eyJpc3MiIDogImh0dHBzOi8vY2FwaS5kYnMuY29tIiwiaWF0IiA6IDE2MD
AzNDA2NjQ2NzYsICJleHAiIDogMTYwMDM0NDI2NDY3Niwic3ViIiA6ICJNVEl6TkE9PSIsInB0eXR5cG
UiIDogMSwiY2xuaWQiIDogImNsaWVudElkNCIsImNsbnR5cGUiIDogIjIiLCAiYWNjZXNzIiA6ICIxRk
EiLCJzY29wZSIgOiAiUkVBRCIgLCJhdWQiIDogImh0dHBzOi8vY2FwaS5kYnMuY29tL2FjY2VzcyIgLC
JqdGkiIDogIjQ0MzIwNTAxOTcwMzMyMjA2NzUiICwiY2luIiA6ICJRMGxPTURBd01EQXoifQ.9O0iL8t
dlpJYMpG6L-ayzLQAH5Vu4Iti-nxiIGQZ2gQ"
```

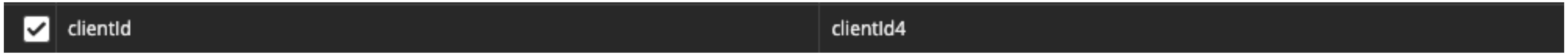
Open Banking API

DBS API (Using cURL and Postman)

- This particular example retrieves card details by setting the clientId in the header



```json
{
    "creditCard": {
        "nameOnCard": "Rayas Roy",
        "cardFace": "01",
        "creditLimitDetl": {
            "temporaryCreditLimitDetl": {
                "expiryDate": null,
                "temporaryCreditLimit": {
                    "amount": 0,
                    "currency": "SGD"
                },
                "effectiveDate": null
            },
            "remainingLimit": {
                "amount": 0,
                "currency": "SGD"
            },
            "creditLimit": null,
            "permanentCreditLimit": {
                "amount": 0,
                "currency": "SGD"
            }
        },
        "id": "9d02e33b930c4de793b2b40ffd49c1d9",
        "issueDate": "2020-08-05",
        "cardNumber": "4556220200620635",
        "cardExpiryDate": "2032-08-30",
        "cardStatus": "N",
        "isPrimaryCard": false,
        "blockDetl": {
            "blockStatuses": [
                ""
            ]
        },
        "overseasActivationDetl": {
            "isPermanent": null,
            "endDate": "2999-12-31",
            "startDate": "2029-01-30"
        }
    }
```

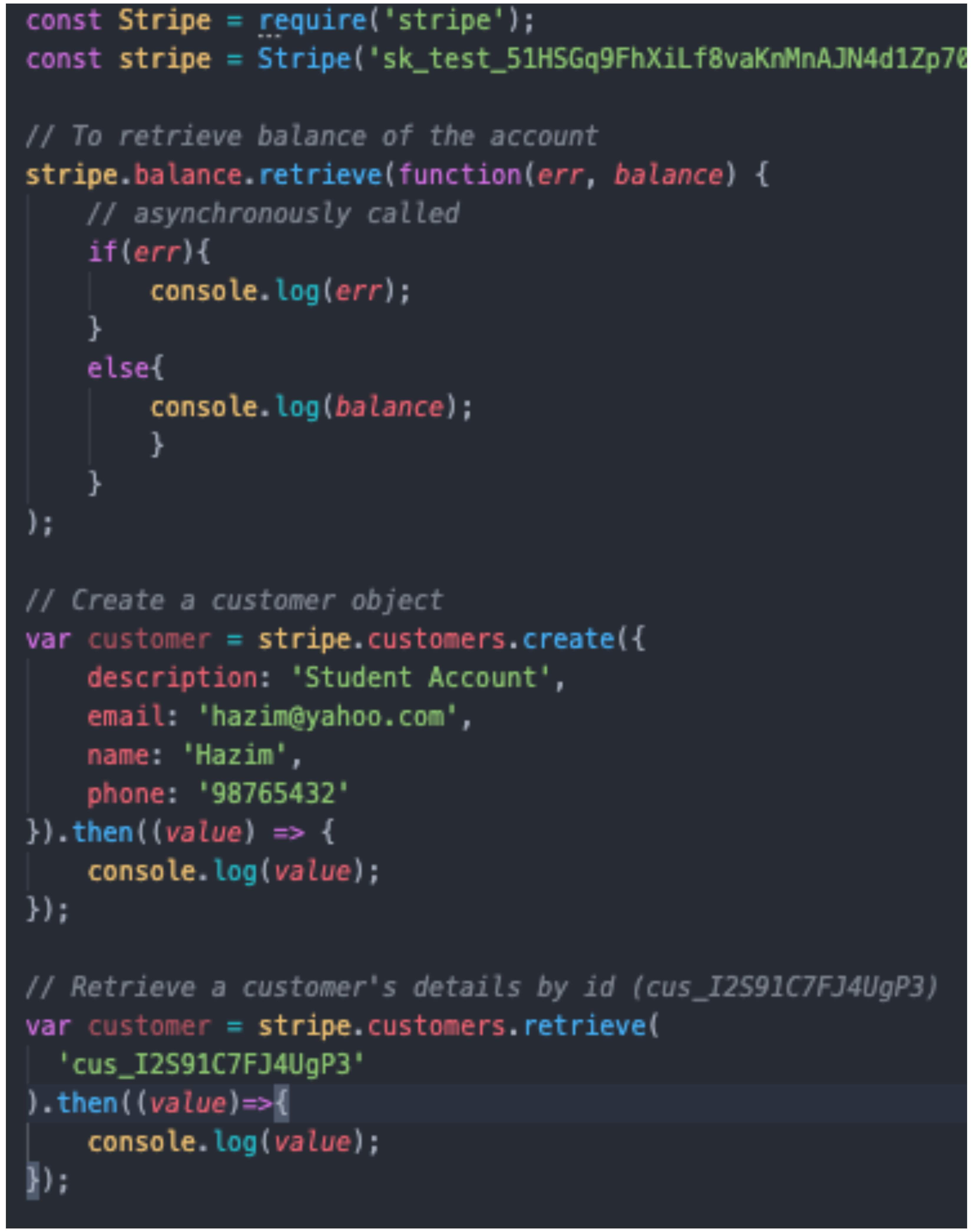


☑	clientId	clientId4

Payment API

Stripe API (Using Javascript)

- Documentation - https://stripe.com/docs/api/balance/balance_retrieve?lang=node
- Using the npm provided by Stripe, we can create and retrieve specific APIs.

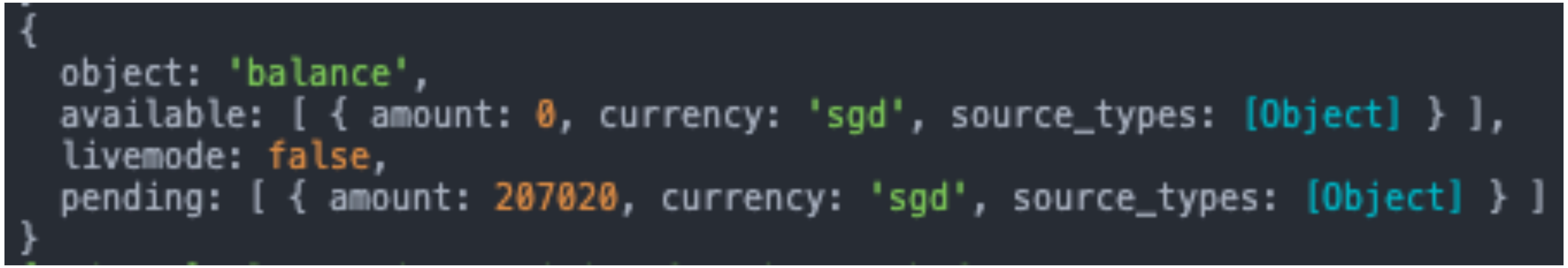


```
const Stripe = require('stripe');
const stripe = Stripe('sk_test_51HSGq9FhXiLf8vaKnMnAJN4d1Zp70

// To retrieve balance of the account
stripe.balance.retrieve(function(err, balance) {
    // asynchronously called
    if(err){
        console.log(err);
    }
    else{
        console.log(balance);
        }
    }
);

// Create a customer object
var customer = stripe.customers.create({
    description: 'Student Account',
    email: 'hazim@yahoo.com',
    name: 'Hazim',
    phone: '98765432'
}).then((value) => {
    console.log(value);
});

// Retrieve a customer's details by id (cus_I2S91C7FJ4UgP3)
var customer = stripe.customers.retrieve(
  'cus_I2S91C7FJ4UgP3'
).then((value)=>{
    console.log(value);
});
```

Payment API

Stripe API (Using Javascript)

- Response of retrieving balance of account

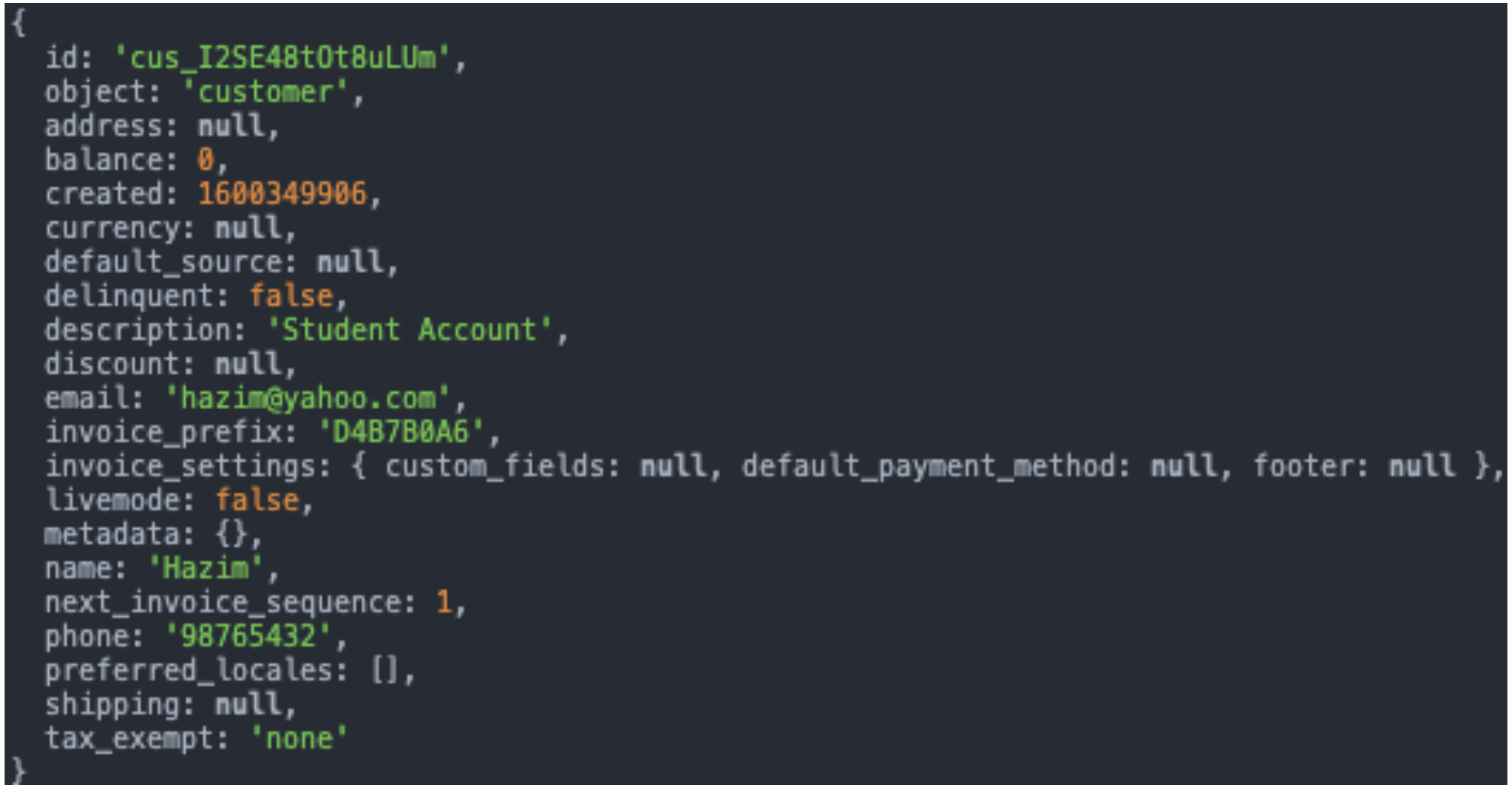


```
{
  object: 'balance',
  available: [ { amount: 0, currency: 'sgd', source_types: [Object] } ],
  livemode: false,
  pending: [ { amount: 207020, currency: 'sgd', source_types: [Object] } ]
}
```

Payment API

Stripe API (Using Javascript)

- Response of creating customer object

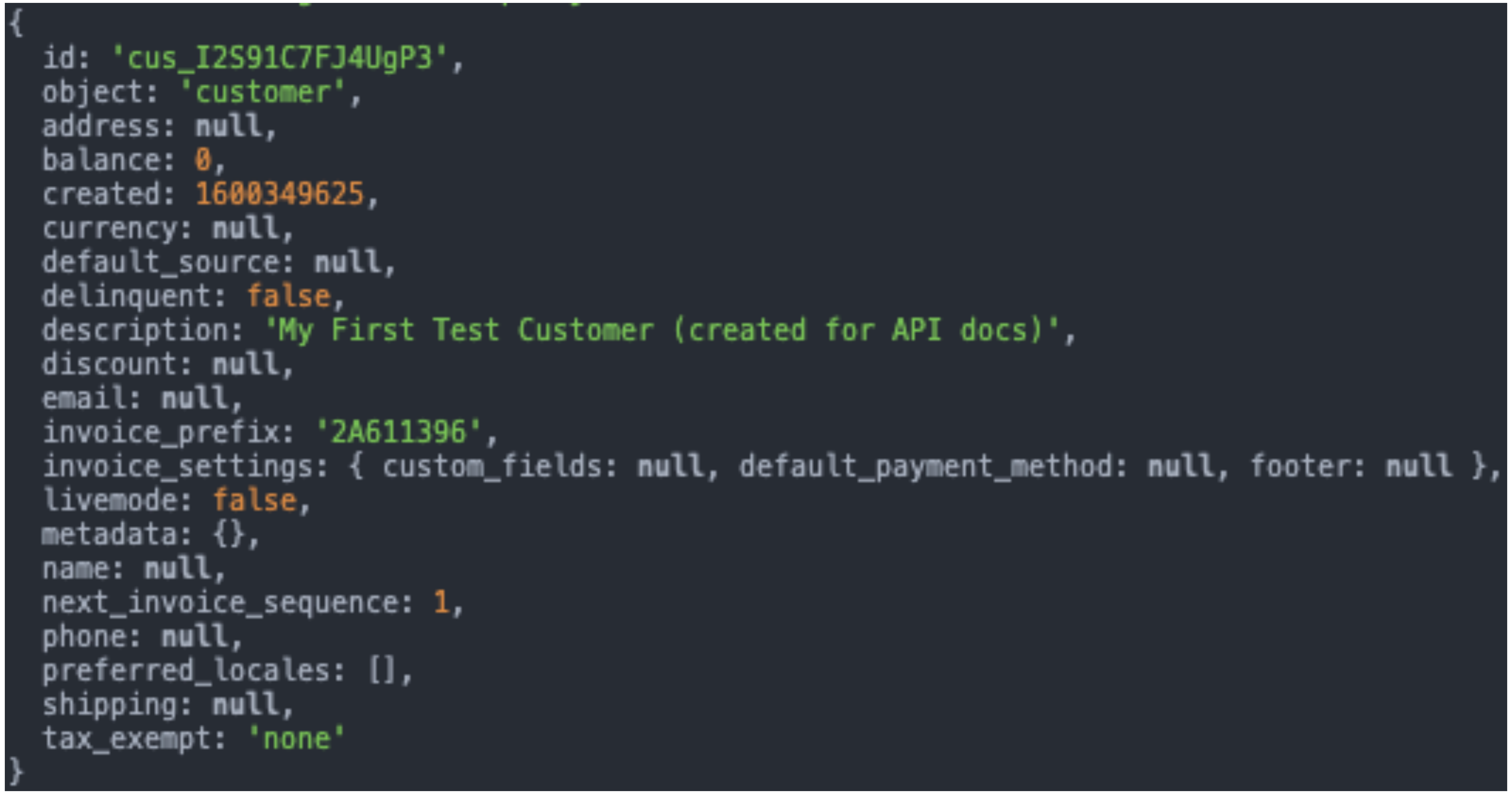


```
{
  id: 'cus_I2SE48tOt8uLUm',
  object: 'customer',
  address: null,
  balance: 0,
  created: 1600349906,
  currency: null,
  default_source: null,
  delinquent: false,
  description: 'Student Account',
  discount: null,
  email: 'hazim@yahoo.com',
  invoice_prefix: 'D4B7B0A6',
  invoice_settings: { custom_fields: null, default_payment_method: null, footer: null },
  livemode: false,
  metadata: {},
  name: 'Hazim',
  next_invoice_sequence: 1,
  phone: '98765432',
  preferred_locales: [],
  shipping: null,
  tax_exempt: 'none'
}
```

Payment API

Stripe API (Using Javascript)

- Response of retrieving customer details by id



```
{
  id: 'cus_I2S91C7FJ4UgP3',
  object: 'customer',
  address: null,
  balance: 0,
  created: 1600349625,
  currency: null,
  default_source: null,
  delinquent: false,
  description: 'My First Test Customer (created for API docs)',
  discount: null,
  email: null,
  invoice_prefix: '2A611396',
  invoice_settings: { custom_fields: null, default_payment_method: null, footer: null },
  livemode: false,
  metadata: {},
  name: null,
  next_invoice_sequence: 1,
  phone: null,
  preferred_locales: [],
  shipping: null,
  tax_exempt: 'none'
}
```

Designing an API

An API service by Shopee

- Base URL: https://api.shopee.com
- REST principles apply for this web API (GET, POST, PUT, DELETE)
- Suggested endpoints:
  - GET /item - retrieves item by calling item_id
  - POST /item - when a new item is added by vendor (request can have a body that includes, vendor name, price and its specifications)
  - PUT /item - requested when the item price or specifications changes
  - DELETE /item - when item is no longer sold

1.Desinin an API (30%)

○ Suest an API that could be built to expose a service. This could be a new or existin service, data, or combination o several services.