Simple Bank Application

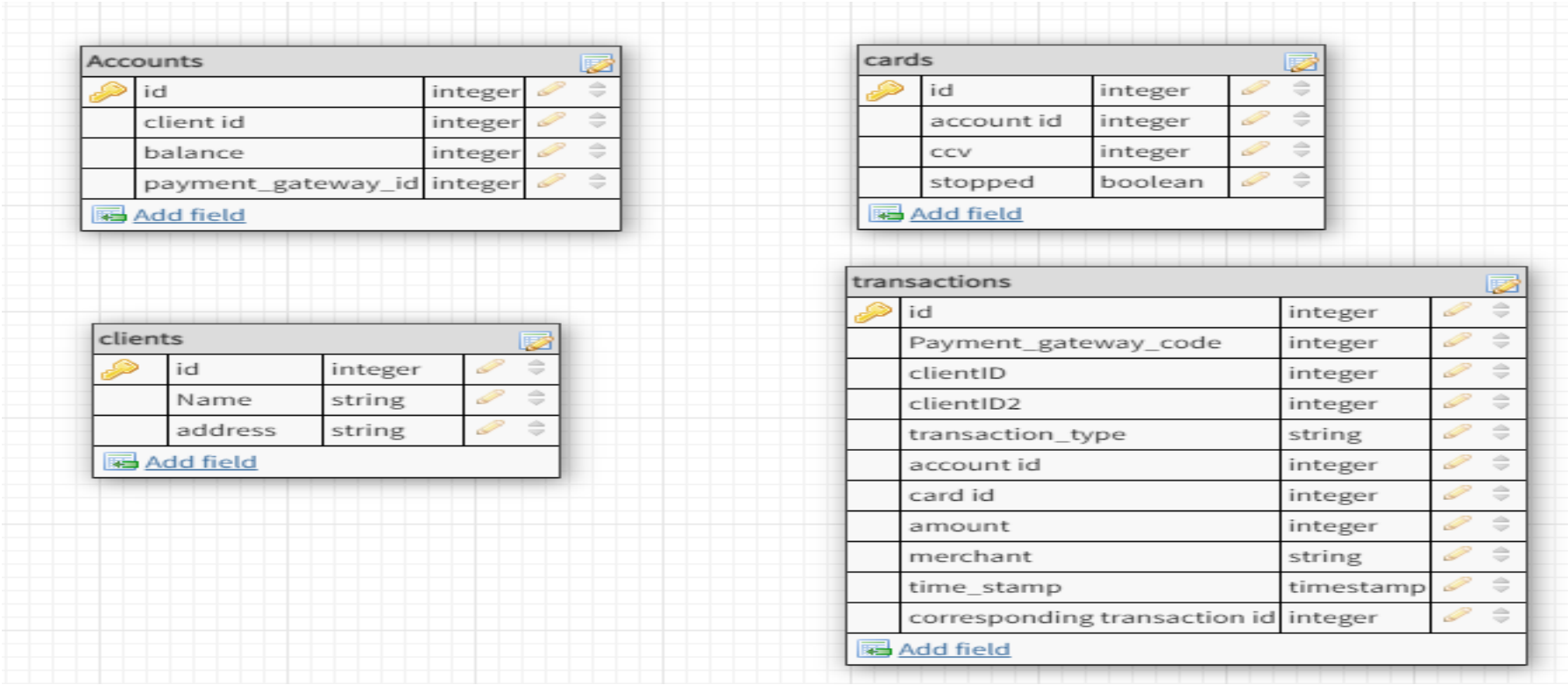
Technologies used:

- TypeScript
- Mongodb

Database:

- We used No SQL Database
- Contains four collections
  accounts ,cards,clients,transactions.
- User account collection points to card collection which points to the client data collection.
- Transaction collection contains client data,payment gateway data and time of the transaction

Visualization of database collections



How it work :

- When a call come from the payment gateway portal our API Authenticate if it is a valid user and a valid password which is saved encrypted in our system then validates the inputs coming first before complete the transaction:
  - If card ID belongs to a valid account In our system.
  - If this card is working
  - If the CCV is correct and belongs to the client card
  - If this client has enough balance in his account

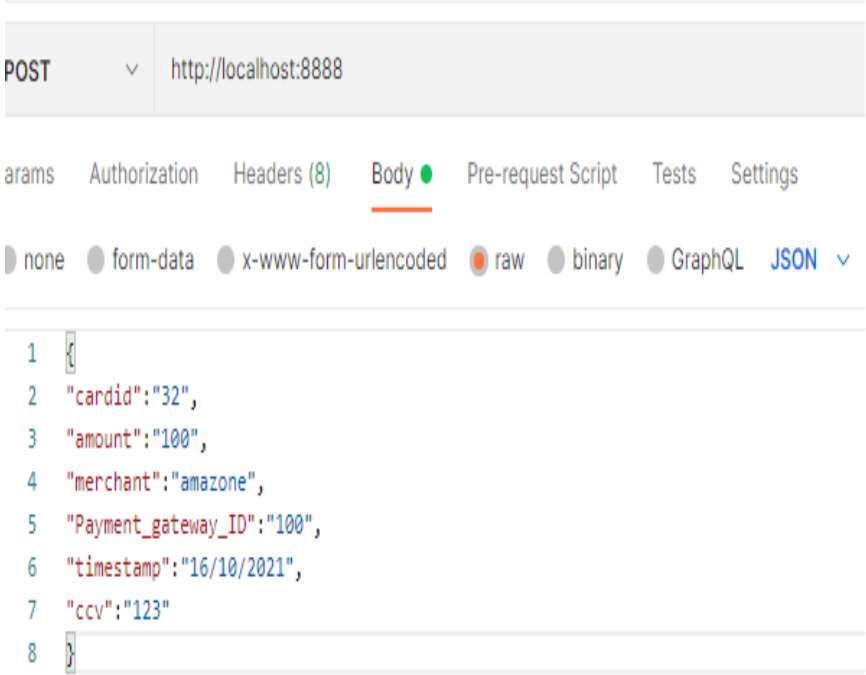
How it work :

- Two transaction are inserted to the database :
  - First one :contains the data of the client,his account id his card id ,the amount that will be deduct from his balance ,payment gateway portal code and id and transaction type
  - Second one :contains the data of the payment gateway portal id ,the amount that will be transferred to his balance,client id and his account id, his card id and transaction type
- we update the balance of the client account and the payment gateway account
- We return a simple response contains the new gateway balance and that the transaction done successfully

Transaction Example :

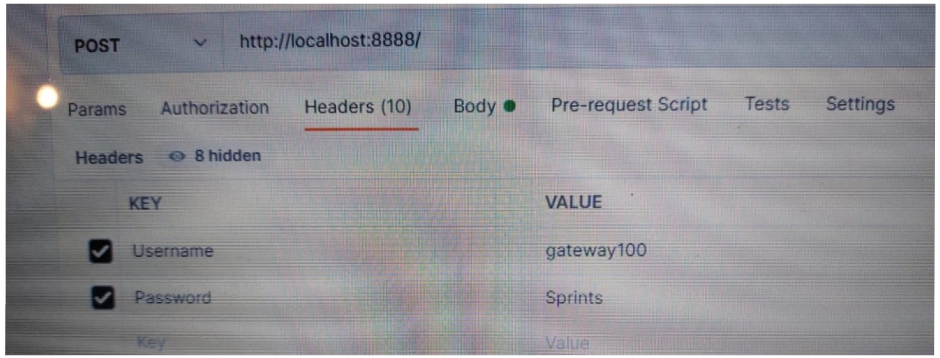
```
_id: ObjectId("616b2a6e327e236241784d7d")
Payment_gateway: 100
clientID: 12
clientID2: 13
T_type: "D"
accountID: 22
cardID: 32
amount: 100
merchant: "amazone"
timestamp: "20-1-2021"
Cooresponding_TID: "616b2a70327e236241784d7f"
```

```
_id: ObjectId("616b2a70327e236241784d7f")
Payment_gateway: 0
clientID: 13
clientID2: 12
T_type: "C"
accountID: 22
cardID: 32
amount: 100
merchant: "amazone"
timestamp: "20-1-2021"
Cooresponding_TID: "616b2a6e327e236241784d7d"
```



User Authentication example:


```
_id: ObjectId("616dc1e201b9282a508cb5df")
Username: "gateway100"
Passw…: "$2a$10$4qycTijSKuOx5Olb4oGPzeGpNRYgQgURUbWEm0K
oqKD1pVHYGVsIu"
```

Thank you