**1. Create an account:** use the Accounts and Cards table.

**2.** **Close an account:** use the Accounts table;

**3.View account balance:** use the Accounts table;

**4**. **View transactions:** use the Transfers table;

* Filter by date: use the date attribute;
* By type (expense/income) expense where SenderId = requester’s id, and income where RecieverId=requester’s id;
* By sender/recipient: get all transactions where sender matches that name or the receiver matches that name;

**4.1 Change transaction’s notes:** use the Transfers table;

**4.2 Get a proof of transaction:** use the Transfers table;

**5.Transfer Money:** use the Transfers table and the Accounts table. Create a transfer and remove the money from the sender’s balance and add the money to the receiver’s account;

**5.1 Make a bank transfer by IBAN:** use the Transfers table and the Accounts table. Use type = “BANK” and iban = “ENTERED\_IBAN” as the metadata. If the receiver’s account belongs to UPbank, add it to their account, otherwise place the money in the “Bank transfer” account;

**5.2** **Make a service payment:** use the Transfers table and the Accounts table. Use type = “SERVICE”, entity = “ENTERED\_ENTITY” and reference = “ENTERED\_REFERENCE” as the metadata. Place the money in the “Service payment” account;

**5.3** **Make a government payment:** use the Transfers table and the Accounts table. Use type = “GOVERNMENT” and reference = “ENTERED\_REFERENCE” as the metadata. Place the money in the “Government payment” account;

**5.4** **Make a telco payment:** use the Transfers table and the Accounts table. Use type = “TELCO”, number = “ENTERED\_NUMBER” and provider = “PROVIDER\_ID” as the metadata. Place the money in the respective provider’s account;

**6. View a scheduled transfer:**

**6.1 Schedule a transfer:** use the StandingOrders table and the Accounts table. With the given frequency, perform all StandingOrders;

**6.2 Change a schedule transfer:** use the StandingOrders table;

**6.3 Delete a schedule transfer:** use the StandingOrders table;

**7. View Direct debits:**

**7.1 Toggle a direct debit:** use the DirectDebits table;

**8.View cards:** use the Cards table, the card number is generated from the card ID;

**8.1 Toggle online payments:** use Cards table;

**8.2 Toggle NFC payments:** use Cards table;

**8.3 Change PIN:** use the Cards table;

**9.Get Documents:**

**9.1 Get IBAN proof:** use the Accounts table. The account id will be used to generate the account's IBAN;

**9.2 Get account statements:** use the Accounts table and the Transfers table. Include the account information and the transfers from the given month, using the criteria defined in 4 for filtering by date;

**10. Change account information:** use Accounts and Addresses table.

**Account Entity**

|  |  |  |
| --- | --- | --- |
| Atribute | data type | ADDITIONAL INFO |
| id | long | Unique, primary key, used to generate the account’s IBAN. |
| Fullname | varchar |  |
| birthdate | date |  |
| addressid | long |  |
| email | varchar | Unique, email format |
| taxnumber | varchar |  |
| idnumber | int |  |
| balance | long | Represents the account’s balance in cents. |

**Cards Entity**

|  |  |  |
| --- | --- | --- |
| Atribute | data type | ADDITIONAL INFO |
| id | long | Unique, primary key, used to generate the card’s number. |
| name | varchar |  |
| expirydate | date | Automatically 2 years after creation |
| pincode | int | 4 digits |
| onlinepayments | Boolean |  |
| nfcpayments | Boolean |  |
| accountid | long | Foreign key to Account |

**Transfers Entity**

|  |  |  |
| --- | --- | --- |
| Atribute | data type | ADDITIONAL INFO |
| id | long | Unique, primary key |
| Date | datetime |  |
| senderid | long | Foreign key to Accounts |
| reciverid | long | Foreign key to Accounts |
| amount | long |  |
| metadata | varchar | JSON, see use cases for schema |
| notes | varchar |  |
| images | image |  |

**TelcoProviders Entity**

|  |  |  |
| --- | --- | --- |
| Atribute | data type | ADDITIONAL INFO |
| id | long | Unique, primary key |
| Name | varchar |  |

**StandingOrder Entity**

|  |  |  |
| --- | --- | --- |
| Atribute | data type | ADDITIONAL INFO |
| id | long | Unique, primary key |
| ReciverID | long | Foreign key to Accounts |
| amount | long |  |
| Frequency | Enum | DAILY, WEEKLY, MONTHLY, YEARLY |
| Senderid | long | Foreign key to Accounts |

**DirectDebit Entity**

|  |  |  |
| --- | --- | --- |
| Atribute | data type | description |
| id | long | Unique, primary key |
| active | Boolean |  |
| amount | long |  |
| receiverid | long | Foreign key to Accounts |
| Senderid | long | Foreign key to Accounts |
| LASTDEBIT | datetime |  |

**Address Entity**

|  |  |  |
| --- | --- | --- |
| Atribute | data type | description |
| id | long | Unique, primary key |
| Line1 | varchar |  |
| line2 | varchar | Optional |
| postalcode | varchar |  |
| city | varchar |  |
| district | varchar |  |
| ACCOUNTID | Long | Foreign key to Accounts |

**All entities store the date of creation and the date of the last update.**