

CMPS 350 Web Development Fundamentals - Spring 2023

Lab 12 – Data Management using Prisma and SQLite Database

Part 2

Objective

This Lab is a continuation of Lab 11, and you will practice more advance concepts about Prisma.

- Data Modelling using Prisma Schema Language
- Cascade Delete and Update
- Relation Queries [Include, Select]
- Full Text Search [Search]
- Filtering and Sorting
- Aggregation, Grouping and Summarization

Project Setup

Download **Lab12-Data-Management** from the GitHub Repo and copy it to your repository. Open the **BankingApp** in VS Code and complete the tasks below.

1. Run `npm i` to install the dependencies
2. add the `.env` file and add the following line [`DATABASE_URL='file:./dev.db'`]
3. `npx prisma db seed`
4. `npm run dev`

Update the database Schema

1. Modify the previous weeks `schema.prisma` file and a new model named “**owner**”. See the entity relationship diagram below.

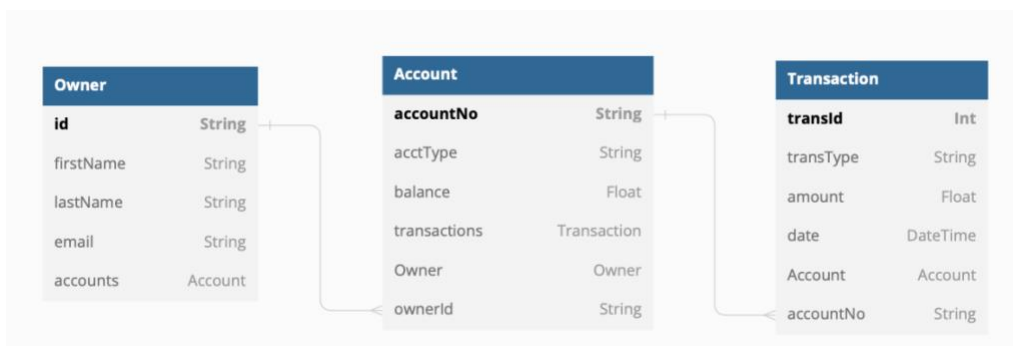


Figure 1 Banking Entities Diagram

- **id** is the primary key for owner and should be auto-assigned using `cuid()` as you did for the account model.
- 2. Export the models to your database by using the following Prisma command
`npx prisma migrate dev -name init`

Anytime you make changes to the models, you need to `npx prisma migrate dev`

- To view your database content, run the following command `npx prisma studio`

id A	firstName A	lastName A	email A	accounts []
ckockkdfg2fpt	John	Doe	john.doe@gmail.com	1 Account
dfghfrjki756gh	Alice	Smith	alicesmith@gmail.com	1 Account
uijklopt543ght	Bob	Johnson	bobjohnson@gmail.com	1 Account

accountNo	acctType	balance	transactions	Owner
search accountNo...	search acctType...	search balance...		
<input checked="" type="checkbox"/> poluytrewq1	Savings	10000	0 Transaction	Owner
<input type="checkbox"/> asw2rtyuio0	Savings	389	1 Transaction	Owner
<input type="checkbox"/> rsfrg2fprksfrg2fpt	Savings	50009999	4 Transaction	Owner

accountNo A	acctType A	balance #	transactions []	Owner ()	ownerId A
asw2rtyuio0	Savings	389	1 Transaction	Owner	dfghfrjki756gh
poluytrewq1	Savings	10000	0 Transaction	Owner	uijklopt543ght
rsfrg2fprksfrg2fpt	Savings	50009999	4 Transaction	Owner	ckockkdfg2fpt

transId	transType	amount	date	Account	accountNo
search transId...	search transType...	search amount...	search date...		search accountNo...
<input checked="" type="checkbox"/> 2	Withdraw	1000	2021-08-17T10:00:00.0...	Account	rsfrg2fprksfrg2fpt
<input checked="" type="checkbox"/> 7	deposit	5000	2021-09-01T10:00:00.0...	Account	rsfrg2fprksfrg2fpt
<input checked="" type="checkbox"/> 8	deposit	500	2021-10-01T10:00:00.0...	Account	rsfrg2fprksfrg2fpt
<input checked="" type="checkbox"/> 9	Withdraw	2000	2021-11-02T10:00:00.0...	Account	rsfrg2fprksfrg2fpt
<input type="checkbox"/> 12	Withdraw	111	2021-05-07T01:58:40.3...	Account	asw2rtyuio0

Querying the database with Prisma client

- Add to the `accounts-repo.js` repository the following functions that use **Prisma client**. **As you make progress** test each function using a console app, Postman or Mocha:
 - getOwners()** : returns all the owners.
 - deleteOwner(ownerId)** : deletes the particular owner and all its accounts and transactions.
 - searchOwner(name)** : return the owner that contains the given name.
 - getTrans(accountNo, fromDate, toDate)**: get transactions for a particular account for a date range.
 - getAvgBalance()**: returns average account balance by account type.
 - getMinAndMaxBalance()** : returns the minimum and maximum balance in the account table.
 - getTop3Accounts()**: returns the top three accounts with the highest balance sorted in descending order.
 - getTransSum(accountNo , fromDate, toDate)**: returns the total amount of withdrawals and deposits made within a specified date range for a given account sorted by trans date.
 - getOwnerReport(ownerId)**: returns all the information about the owner, including their accounts, and for each account, it should also include all its transactions.
- Test the app using the user interface by running the app `npm run dev`.