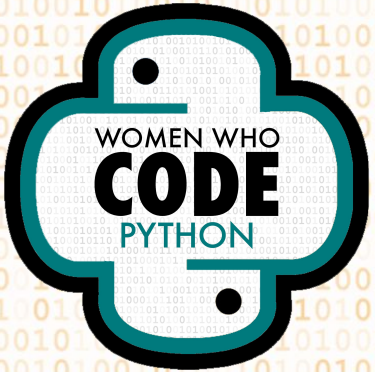
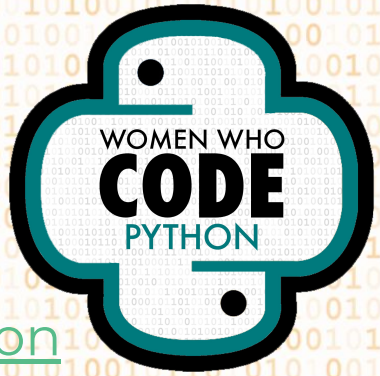
Women Who Code Python Track

Databases with Python: Quickstart



Session#2 - SQLite and Python

Welcome Everyone!!



- The slides available here on GitHub soon: https://github.com/WomenWhoCode/WWCodePython
- Our social media and events here: https://linktr.ee/wwcodepython
- Please make sure your chat is set to "**All panelists and attendees**".
- Few housekeeping rules:
  - Everyone will be muted throughout the webinar!
  - Please share your thoughts on the chat and/or ask questions in the Q&A.
  - Our team is here. Please reach out to us with any technical questions!

WELCOME

WOMEN WHO CODE

Hi! We are ...

Hala

WWCode Python Volunteer

Ramya

WWCode Python Lead

Karen

WWCode Python Lead

OUR MISSION

Inspiring women to excel in technology careers.

WOMEN WHO CODE

OUR VISION

A world where women are representative as technical executives, founders, VCs, board members and software engineers.

WOMEN WHO CODE

OUR TARGET

Engineers with two or more years of experience looking for support and resources to strengthen their influence and levelup in their careers.

WOMEN WHO CODE

CODE OF CONDUCT

WWCode is an inclusive community, dedicated to providing an empowering experience for everyone who participates in or supports our community, regardless of gender, gender identity and expression, sexual orientation, ability, physical appearance, body size, race, ethnicity, age, religion, socioeconomic status, caste, creed, political affiliation, or preferred programming language(s).

Our events are intended to inspire women to excel in technology careers, and anyone who is there for this purpose is welcome. We do not tolerate harassment of members in any form. Our **Code of Conduct** applies to all WWCode events and online communities.

Read the full version and access our incident report form at **womenwhocode.com/codeofconduct**

WOMEN WHO CODE

250,000+

Members

In 95 cities and 122 countries
with 70 networks,
10K+ events,
$1025 daily Conference tickets,
$2M Scholarships and
Access to jobs + resources
Infinite connections

WOMEN WHO CODE

OUR MOVEMENT

As the world changes, we can be a connecting force that creates a sense of belonging while the world is being asked to isolate.

WOMEN WHO CODE

AGENDA

1. Recap of Session#1
2. More on SQL - SQL and its Dialects
3. More on SQL - SQL and NoSQL
4. More on SQL - Common SQL Data type (SQLite)
5. Introduction to SQLite
6. SQLite Syntax
7. If demoing CRUD operations using Python code
8. Its use-cases (used for small scale and prototyping purpose)

One slide with Installation guidance on DB Browser for SQLite?

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8. SQLite with Python

Recap - Session#1

- ➔ Data and Database
- ➔ Relational Database Management System RDBMS
  - ◆ Data stored in table format and tables are related to each other by a common field
- ➔ Structured Query Language SQL
  - ◆ A language we use to communicate with the database

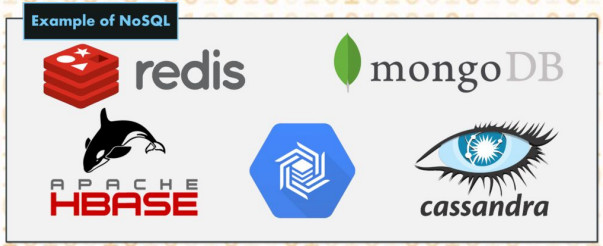
More on SQL - SQL and its Dialects

- ➔ Different vendors (companies) develop their own Database Management System (DBMS)
- ➔ Different “dialects” of SQL is used to communicate with the different databases

Microsoft SQL Server	MySQL	Oracle
PostgreSQL	SQLite	DB2

More on SQL - SQL and NoSQL

SQL	NoSQL
Design for relational database	Design for non-relational database
Data are stored in table structure	Data can be stored in various way i.e. document, key-value, graph
Vertical scaling	Horizontal Scaling
Fixed schema and structured data	Dynamic schemas and unstructured data
Multi-row transactions	Process data in document / JSON/ XML



CRUD Operations on SQL

➔ 4 fundamental functions for data storage

CRUD	Equivalent SQL Command
Create	INSERT
Read	SELECT
Update	Update
Delete	Delete

More on SQL - Common SQL Data type (SQLite)

Data Type	Example
TEXT	“snoopy”
NULL	NULL
INTEGER	1, 121, 12321
REAL	68.84
BLOB	Stores data exactly as it was input

Datetime data can be stored in TEXT, REAL OR INTEGER. A built-in function helps to store datetime data in a understandable format

Introduction to SQLite

- ➔ Relational Database Management System
- ➔ Lightweight software library
- ➔ Self-contained
- ➔ Serverless

SQLite Syntax Example

```
SELECT
        clientID, firstname, lastname
FROM
        Client
        JOIN Employee ON Client.employeeID = Employee.employeeID
WHERE lastname = “Smith”
ORDER BY Client.age
```

Column

Table

(Optional) Join with other table
Filter data
Sort data

Client

clientID	firstname	lastname	age	employeeID
24001	John	Smith	43	301
24002	Jane	Doe	45	301
24334	Mary	Jane	32	302

Employee

employeeID	firstname	lastname	age
301	Karen	W	50
302	Hala	S	55
303	Ramya	N	32

SQLite with Python

```
import sqlite3

connect = sqlite3.connect('bank.db')

cursor = connect.execute("select clientID, firstname, lastname from Client
join Employee on Client.employeeID = Employee.employeeID where
Client.lastname = 'Smith', order by Client.age

for row in cursor:
        print(row[0], row[1], row[2], row[3])

connect.close()
```

Import library

Connect to the database

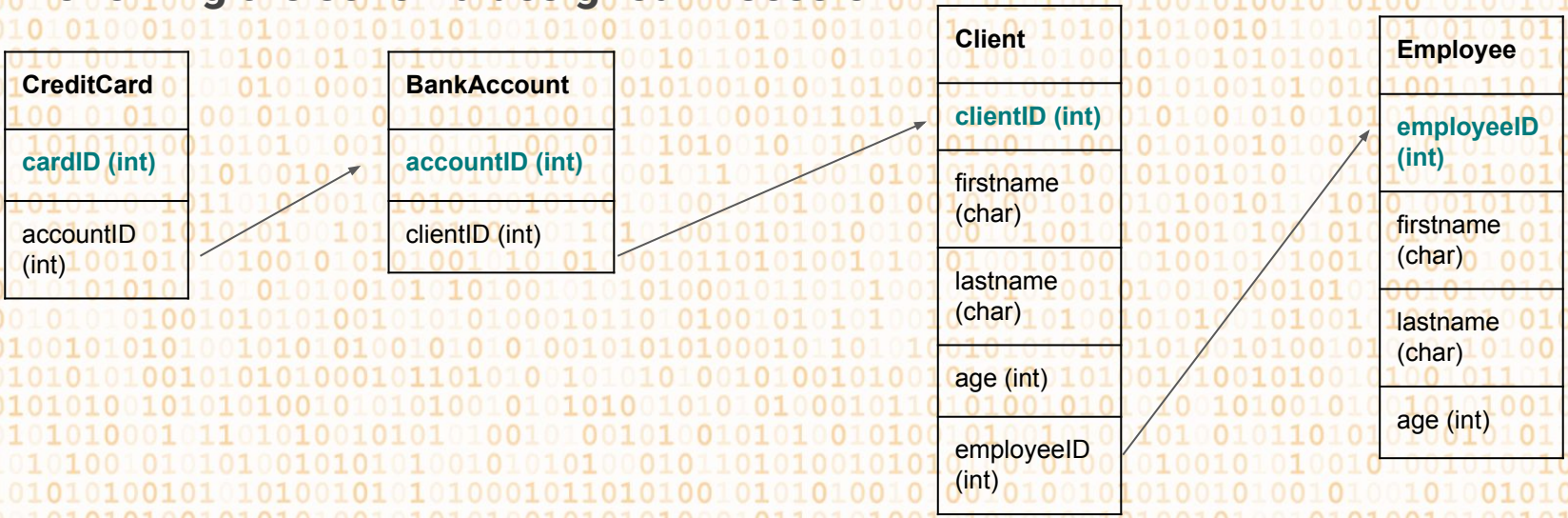
Execute SQL query

Print table result

Close the database connection

Demo - Live Coding

➔ Following the schema designed in session 1.



Sample Data

Credit Card

cardID	accountID
BZGH	552
FGHJ	552
ASDF	554

Bank Account

accountID	clientID
552	24002
553	24334
554	24334

Client

clientID	firstname	lastname	age	employeeID
24001	John	Smith	43	301
24002	Jane	Doe	45	301
24334	Mary	Jane	32	302

Employee

employeeID	firstname	lastname	age
301	Karen	W	50
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Wrap Up!

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WOMEN WHO CODE PYTHON

JOIN US ON SOCIAL MEDIA!

@WWCODEPYTHON

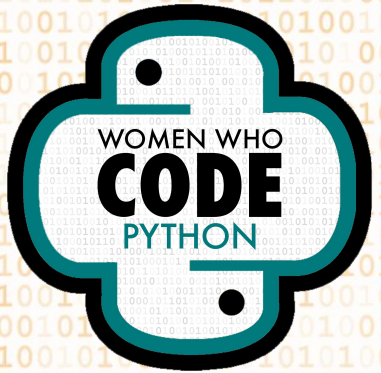
WOMENWHOCODE.COM/PYTHON

Upcoming Events

WED 17 FEB	Databases with Python: Quickstart: SQL and Python *Featured* 6:00 PM – 8:00 PM (EST) | Zoom	Register
WED 10 MAR	Databases with Python: Session on Firebase *Featured* 6:00 PM – 8:00 PM (EST) | Zoom	Register
WED 31 MAR	Databases with Python: Session on MongoDB *Featured* 7:00 PM – 8:00 PM (EDT) | Zoom	Register

Thank you

Databases with Python Series



Session#3 - **Firebase and Python**