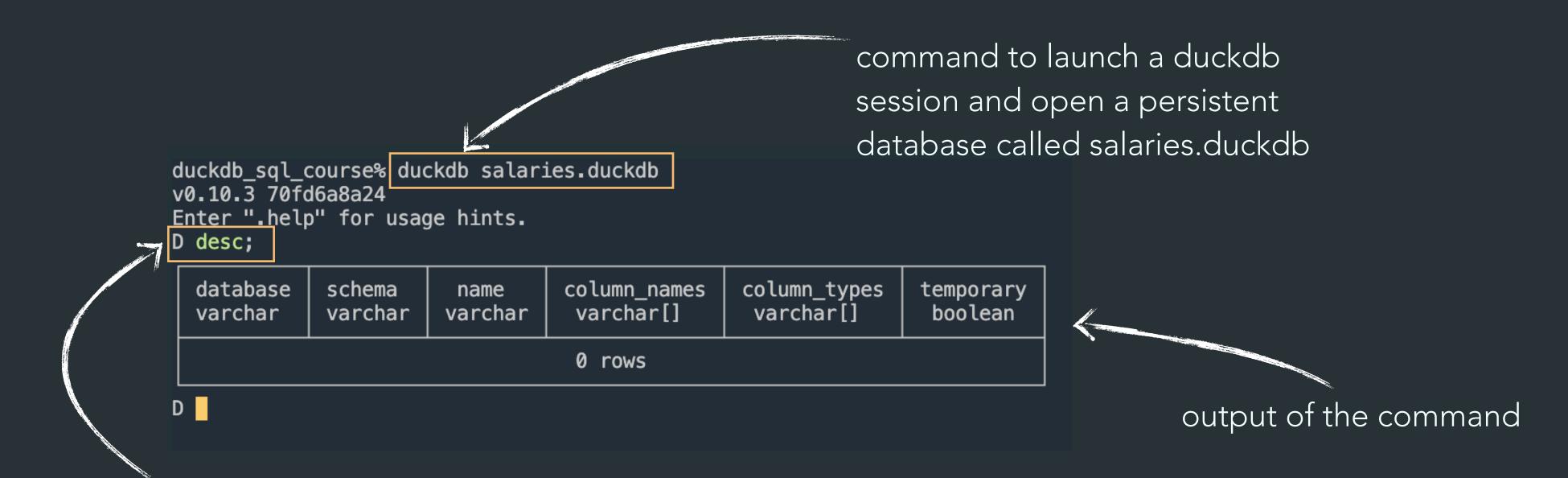kokchun giang

navigating around in **duckdb** in command line tool and the local ui

the interactive **command line interface** of duckdb

command to launch a duckdb
session and open a persistent
database called salaries.duckdb

```
duckdb_sql_course% duckdb salaries.duckdb
v0.10.3 70fd6a8a24
Enter ".help" for usage hints.
D desc;
```

database varchar	schema varchar	name varchar	column_names varchar[]	column_types varchar[]	temporary boolean
0 rows					

```
D
```

output of the command

interactive CLI accepts SQL
commands and duckdb specific
commands

this **sql script** ingests data from a csv file
into duckdb database

creates a table and
stores data read
from csv file

DUCKDB_SQL_COURSE   ingest_salaries.sql
  data   ▷ Run on active connection | ≡ Select block
    salaries.csv   1   CREATE TABLE
  ingest_salaries.sql   2   IF NOT EXISTS job_salaries AS (
  salaries.duckdb   3   SELECT
                          4   *
                          5   FROM
                          6   read_csv_auto ('data/salaries.csv')
                          7   );
                          8

path to csv file

two different ways of running **sql script** in duckdb CLI

input redirection, takes content from
ingest_salaries.sql as input

.read is a dot-command which
requires an active session

```
● duckdb_sql_course% duckdb salaries.duckdb < ingest_salaries.sql
○ duckdb_sql_course% duckdb salaries.duckdb
  v0.10.3 70fd6a8a24
  Enter ".help" for usage hints.
  D SELECT * FROM job_salaries;
```
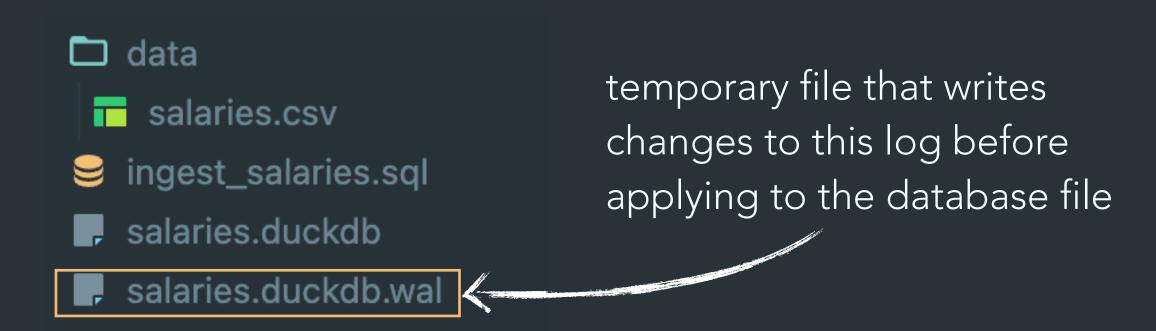
work_year int64	experience_level varchar	employment_type varchar	job va
2024	SE	FT	AI Engineer
2024	SE	FT	AI Engineer
2024	SE	FT	Data Engineer
2024	SE	FT	Data Engineer
2024	SE	FT	Machine Learnin
2024	SE	FT	Machine Learnin
2024	MI	FT	ML Engineer
2024	MI	FT	ML Engineer
2024	EN	FT	Data Analyst
2024	EN	FT	Data Analyst
2024	SE	FT	Data Engineer
2024	SE	FT	Data Engineer
2024	EX	FT	NLP Engineer
2024	EX	FT	NLP Engineer
2024	MI	FT	Data Scientist

```
  duckdb_sql_course% duckdb salaries.duckdb
  v0.10.3 70fd6a8a24
  Enter ".help" for usage hints.
  D .read ingest_salaries.sql
  D SELECT * FROM job_salaries;
```

work_year int64	experience_level varchar	employment_type varchar	job va
2024	SE	FT	AI Engineer
2024	SE	FT	AI Engineer
2024	SE	FT	Data Engineer
2024	SE	FT	Data Engineer
2024	SE	FT	Machine Learnin
2024	SE	FT	Machine Learnin
2024	MI	FT	ML Engineer
2024	MI	FT	ML Engineer
2024	EN	FT	Data Analyst
2024	EN	FT	Data Analyst
2024	SE	FT	Data Engineer
2024	SE	FT	Data Engineer
2024	EX	FT	NLP Engineer

the write-ahead log **.wal** file maintains data integrity and recoverability

```
📁 data
   📊 salaries.csv
   🗄 ingest_salaries.sql
   📄 salaries.duckdb
   📄 salaries.duckdb.wal
```

temporary file that writes changes to this log before applying to the database file

.wal file created when the database changes like in INSERT, UPDATE or DELETE operations

ensures ACID compliance to get data integrity

duckdb can use .wal file to restore database in case of crash

disappears after clean shutdown of duckdb session e.g. when you do ctrl+c or ctrl+d

the **local ui** is a friendly notebook style way to interact with duckdb

notebook cell for sql commands

choose database

summary statistics

run this command to start local ui

```
$ duckdb --ui yt_videos.duckdb
```

output