



kokchun giang

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

the interactive **command line interface** of 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
```

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

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

data

salaries.csv

ingest_salaries.sql

salaries.duckdb

ingest_salaries.sql

Run on active connection | Select block

```
1 CREATE TABLE
2   IF NOT EXISTS job_salaries AS (
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

```
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_title varchar
2024	SE	FT	AI Engineer
2024	SE	FT	AI Engineer
2024	SE	FT	Data Engineer
2024	SE	FT	Data Engineer
2024	SE	FT	Machine Learning Engineer
2024	SE	FT	Machine Learning Engineer
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

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

```
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_title varchar
2024	SE	FT	AI Engineer
2024	SE	FT	AI Engineer
2024	SE	FT	Data Engineer
2024	SE	FT	Data Engineer
2024	SE	FT	Machine Learning Engineer
2024	SE	FT	Machine Learning Engineer
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

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

output

The screenshot shows the DuckDB local UI interface. At the top, there's a header with the DuckDB logo, a 'Sign in to MotherDuck' button, and a 'Help' button. Below the header, there's a notebook-style interface. On the left, a SQL query is entered in a cell: `select * from videos;`. Below the query, the output is displayed as a table with 263 rows. The table has two columns: 'Innehåll' and 'Videotitel'. On the right, a summary statistics panel is shown, displaying 263 rows and 9 columns. The summary statistics include counts and percentages for various columns: 'Innehåll' (263), 'Videotitel' (263, 0.4%), 'Publiceringstid för vi...' (126, 6%), 'Längd' (0.4%), 'Visningar' (0.4%), 'Visningstid (timmar)', 'Prenumeranter', 'Exponeringar', and 'Klickfrekvens för ex...'. The interface is clean and modern, with a light blue and white color scheme.

	T Innehåll	T Videotitel
5	0tnq9eLNNWM	[ARCHIVED] DBeaver connect with DuckDB wit
6	EZ3MLmyhw68	Modern data stack project - introduction and pi
7	xSAvbH_v1R4	Building a CSV Data API with FastAPI and Pand
8	CGfrmZcfXJE	Modern data stack - automating dlt and dbt pip
9	JUOV2Boj52Y	Line chart in Taipy part 1
10	-PxkR3kCOI0	Taipy introduction
11	ZnDmTGgYMn0	Building a Streamlit Frontend for FastAPI & Scik
12	CPuyUvnqEi4	FastAPI and scikit-learn tutorial to create an AP
13	b9VMLSXKHwk	Setup duckdb and dbeaver (coding)
14	MSuMzOnZNno	Creating a chatbot in Excel to chat with your dat

263 Rows
9 Columns

T	Innehåll	263	-
T	Videotitel	263	0.4%
T	Publiceringstid för vi...	126	6%
123	Längd		0.4%
123	Visningar		-
#	Visningstid (timmar)		-
123	Prenumeranter		-
123	Exponeringar		-
#	Klickfrekvens för ex...		-

run this command to start local ui

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