Basic SQL

Trainer

Hi there! I am Agil Haykal, just call me **Agil**. I am a curious guy who end up involved in data technology.

I have experienced Data Science as a trainer, consultant, and developer. I have taught +300 Data Scientist, Engineer, and Business Intelligence in total.

I handled several industry from manufacturing, banking, telecommunication, government, and Insurance. Please feel free to contact me to discuss anything about data technology.

LinkedIn: Agil Haykal

DigitalSkola
Uncover The World Of Digital Skills With Us

Today's quote

Data will talk to you if you're willing to listen

- Jim Bergeson

DigitalSkola
Uncover The World Of Digital Skills With Us

Table of Content

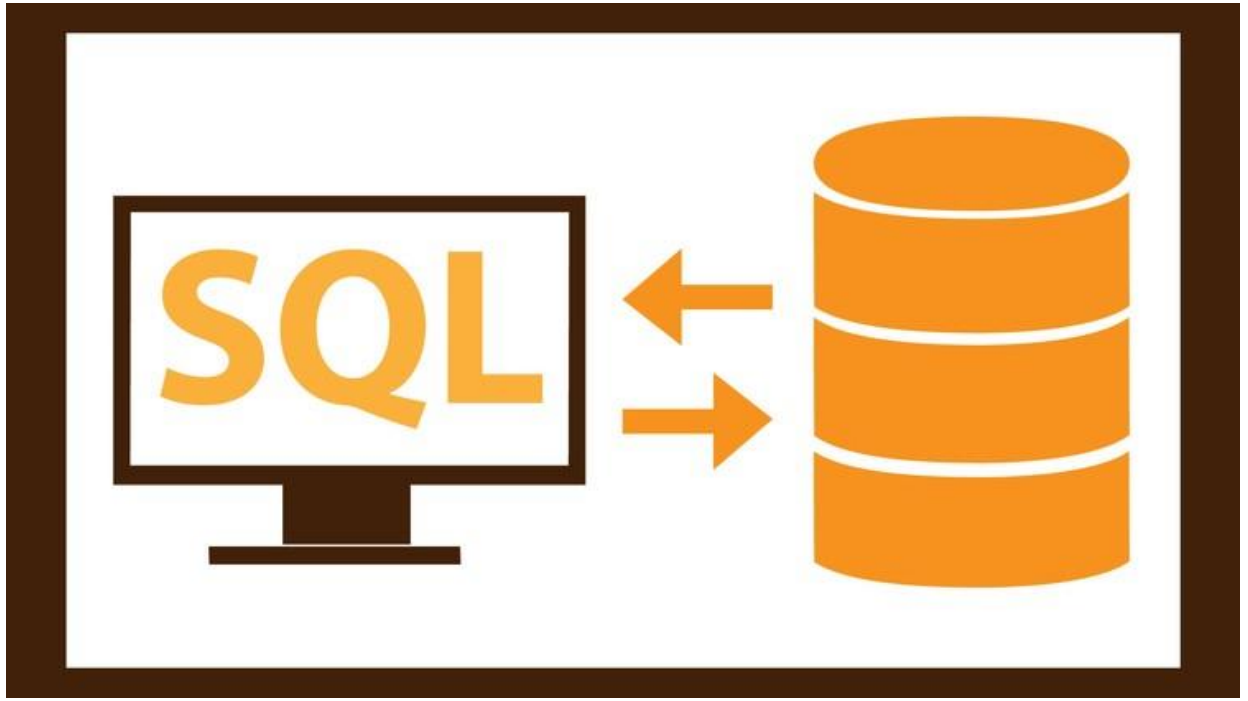
What will We Learn Today?

DigitalSkola
Uncover The World Of Digital Skills With Us

Database

A database is an organized collection of data, generally stored and accessed electronically from a computer system

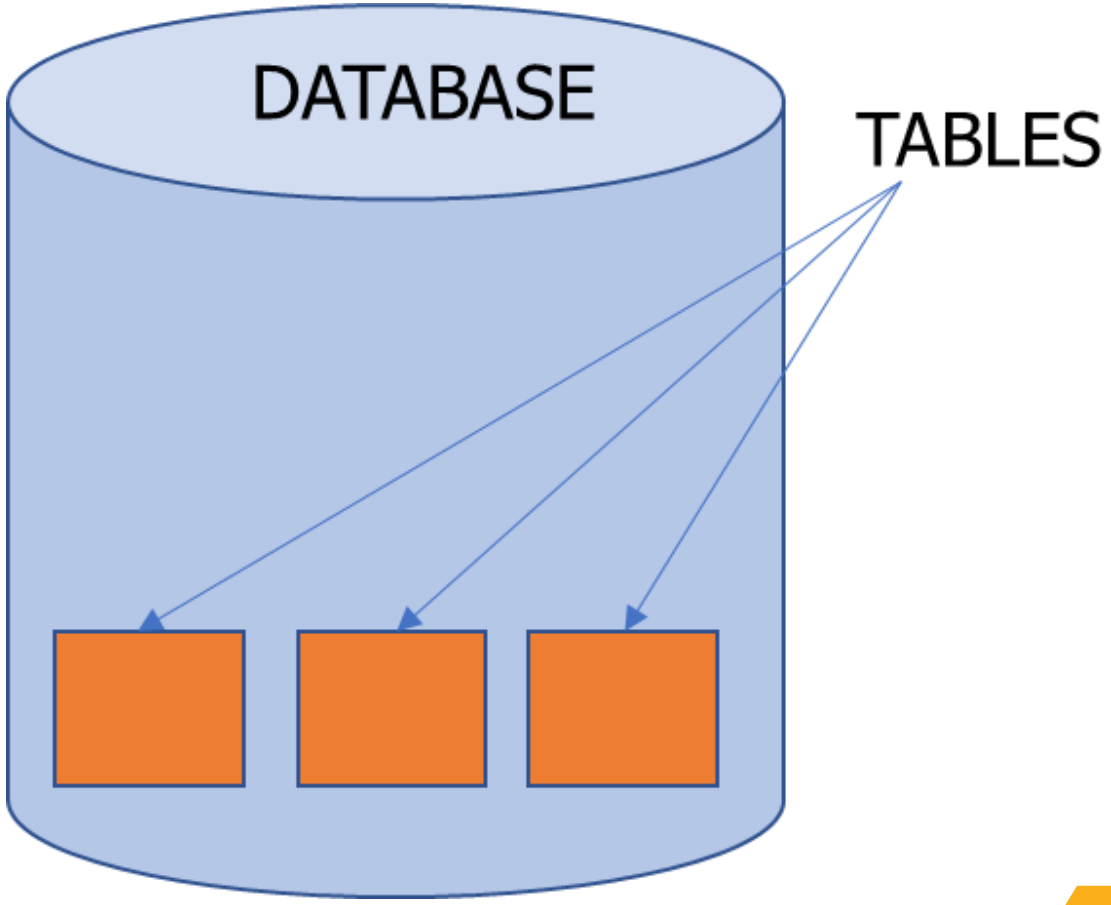
What is SQL?



- A language to communicate with the Database
- A tool to retrieve the required information from Database
- SQL is not case sensitive (MaMa = mama = MAMA)

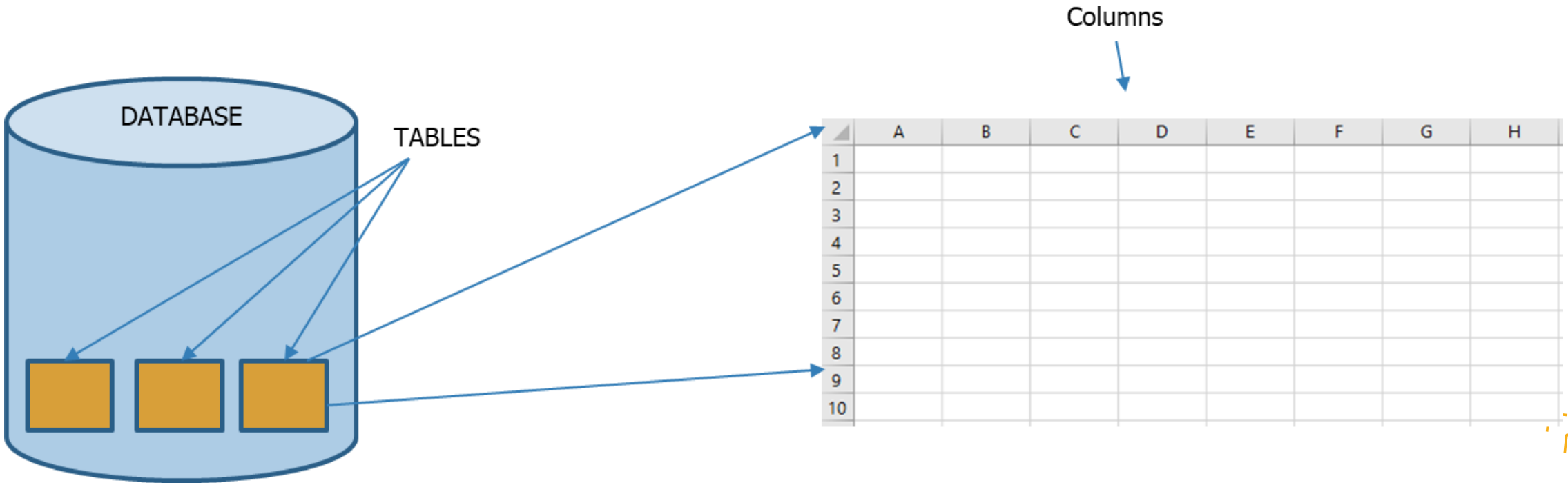
Database Basic

In Database, data is stored in tables



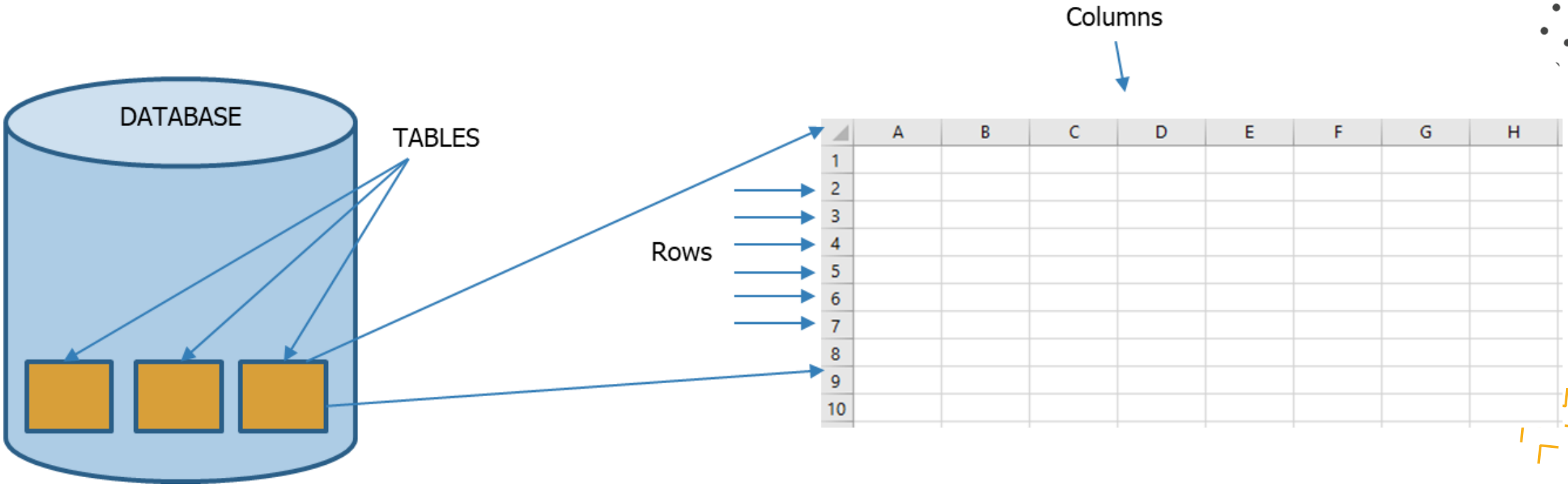
Database Basic

- Each table consists od columns and rows.
- Each columns is a field in a record, and there is a column name associated with each columns



Database Basic

- Each row represents one record.
- When we say how many records we have, we are referring to the number of rows

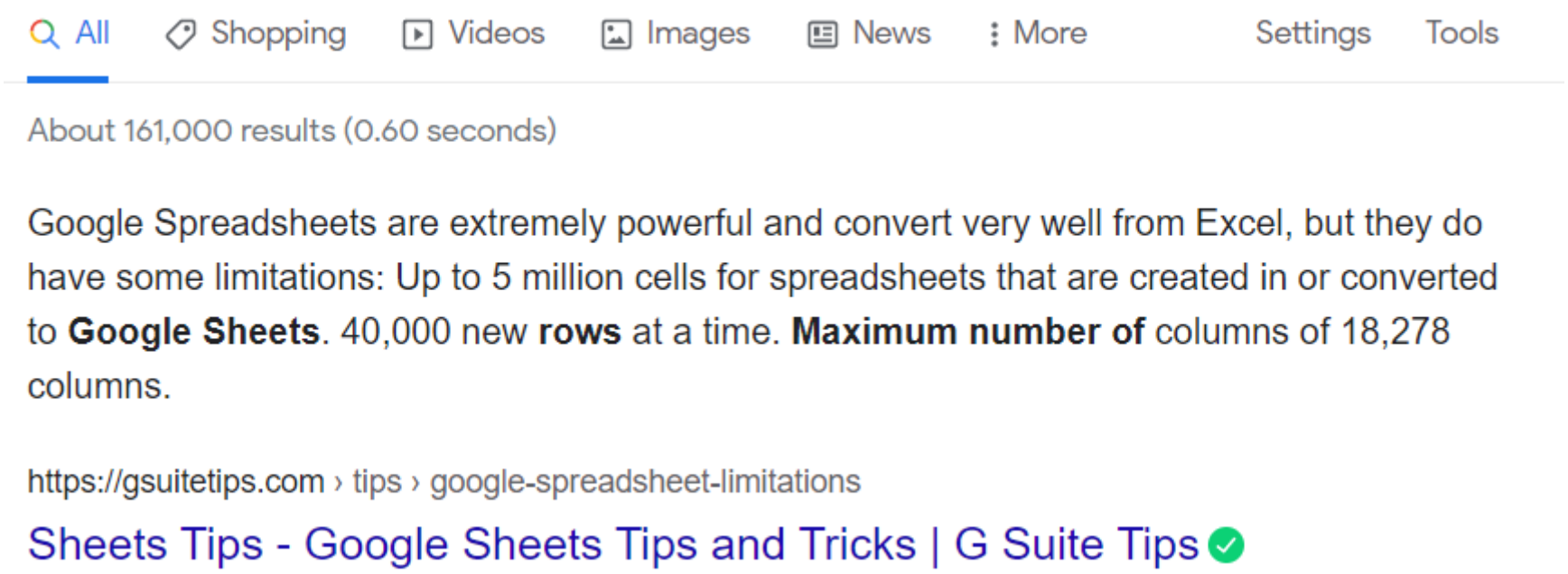


DigitalSkola
Uncover The World Of Digital Skills With Us

What Makes Database Better from Spreadsheet?

DigitalSkola
Uncover The World Of Digital Skills With Us

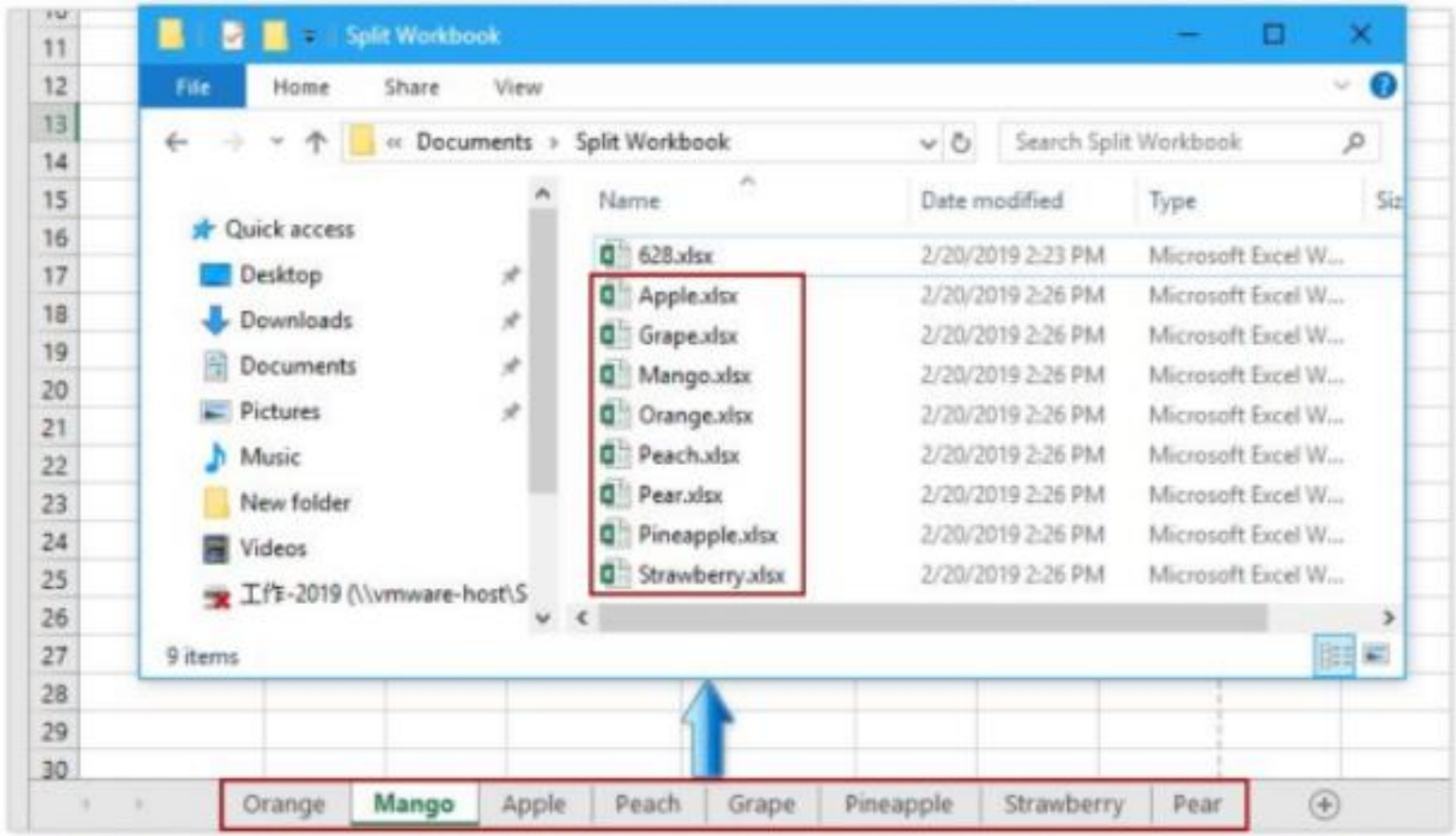
Spreadsheet has limited Rows



Data > 1.000.000 rows are hard to manipulate

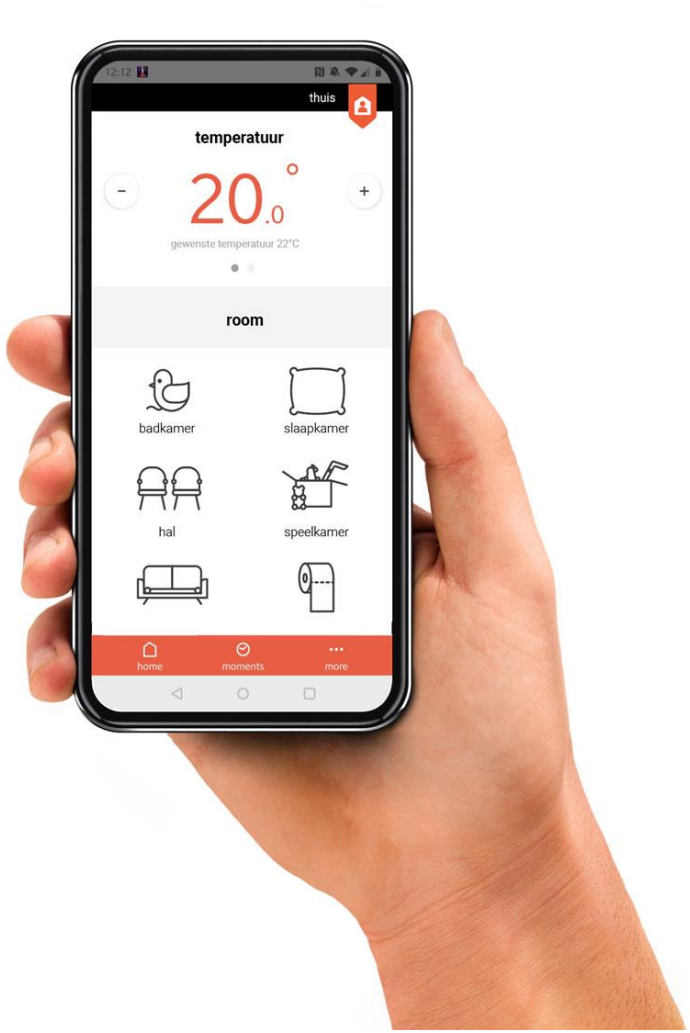
DigitalSkola
Uncover The World Of Digital Skills With Us

Join Table is easier in Database



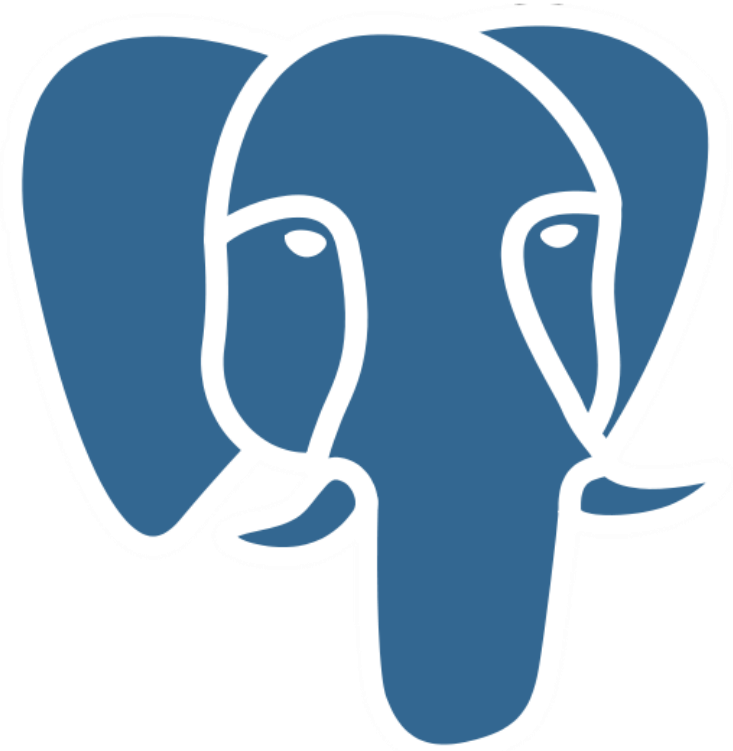
DigitalSkola
Uncover The World Of Digital Skills With Us

Applicable for any software



DigitalSkola
Uncover The World Of Digital Skills With Us

Why use PostgreSQL?



PostgreSQL comes with many features aimed to help developers build applications, administrators to protect data integrity and build fault-tolerant environments, and help you manage your data no matter how big or small the dataset.

- Data Types
- Data Integrity
- Concurrency and Performance
- Reliability, disaster recovery
- Security

DigitalSkola
Uncover The World Of Digital Skills With Us

Now Let’s Code!

SELECT … FROM

SQL is structured similar to the English language.
The basic command for retrieving data from a database table is to **SELECT** data **FROM** a table.
Not surprisingly, the keywords **"SELECT"** and **"FROM"** make up the core of a SQL statement

The syntax for "SELECT… FROM" is :

SELECT "COLUMN_NAME"
FROM "TABLE_NAME"

Different ways of selecting data :

Select more than 1 column :

```
SELECT
"COLUMN_NAME_1","COLUMN_NAME_2
"
FROM "TABLE_NAME"
```

Select all columns :

```
SELECT *
FROM "TABLE_NAME"
```

Select unique values :

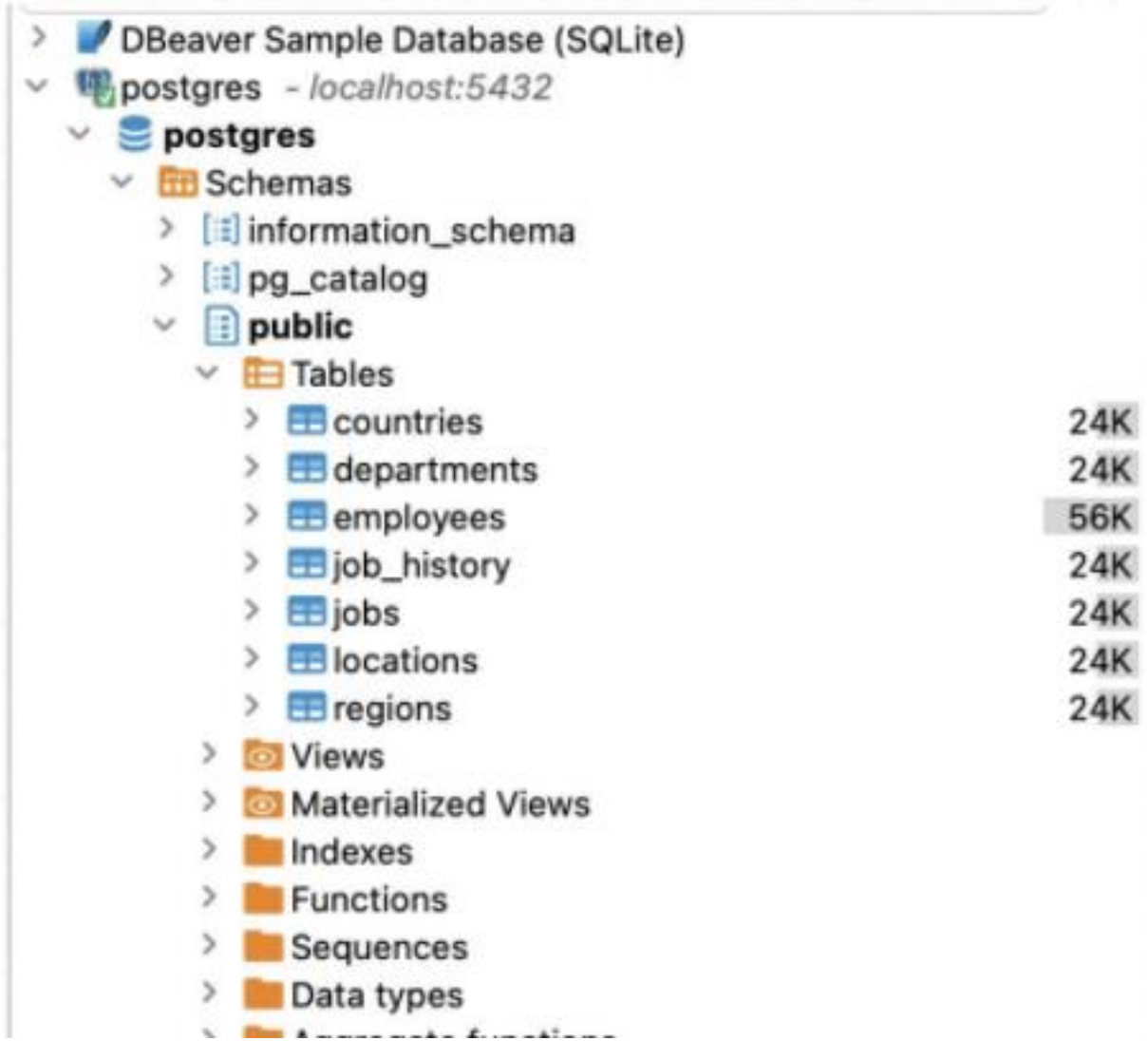
```
SELECT DISTINCT
"COLUMN_NAME"
FROM "TABLE_NAME"
```

DigitalSkola
Uncover The World Of Digital Skills With Us

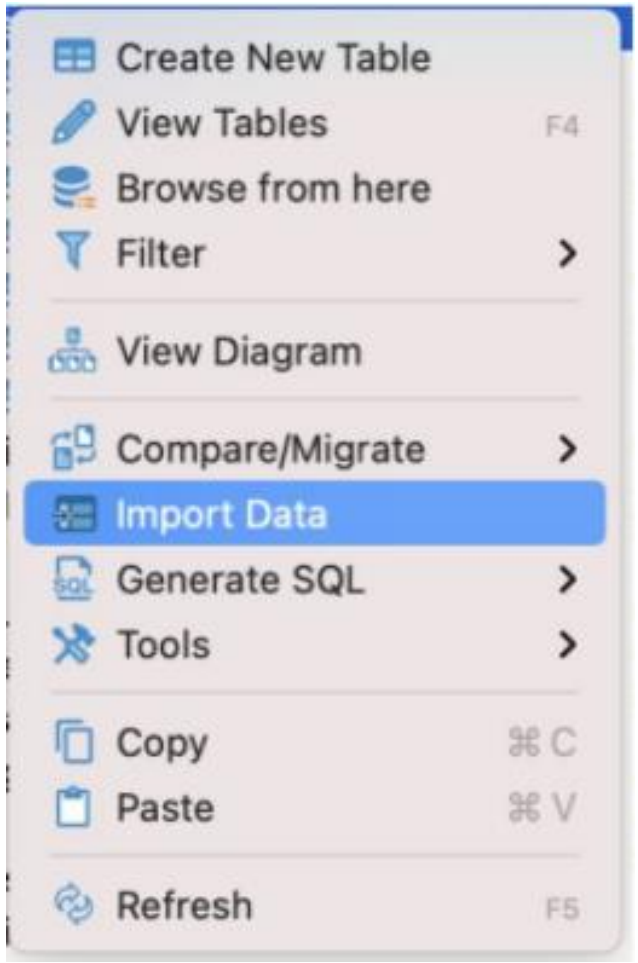
Sometimes We need to put our data in database

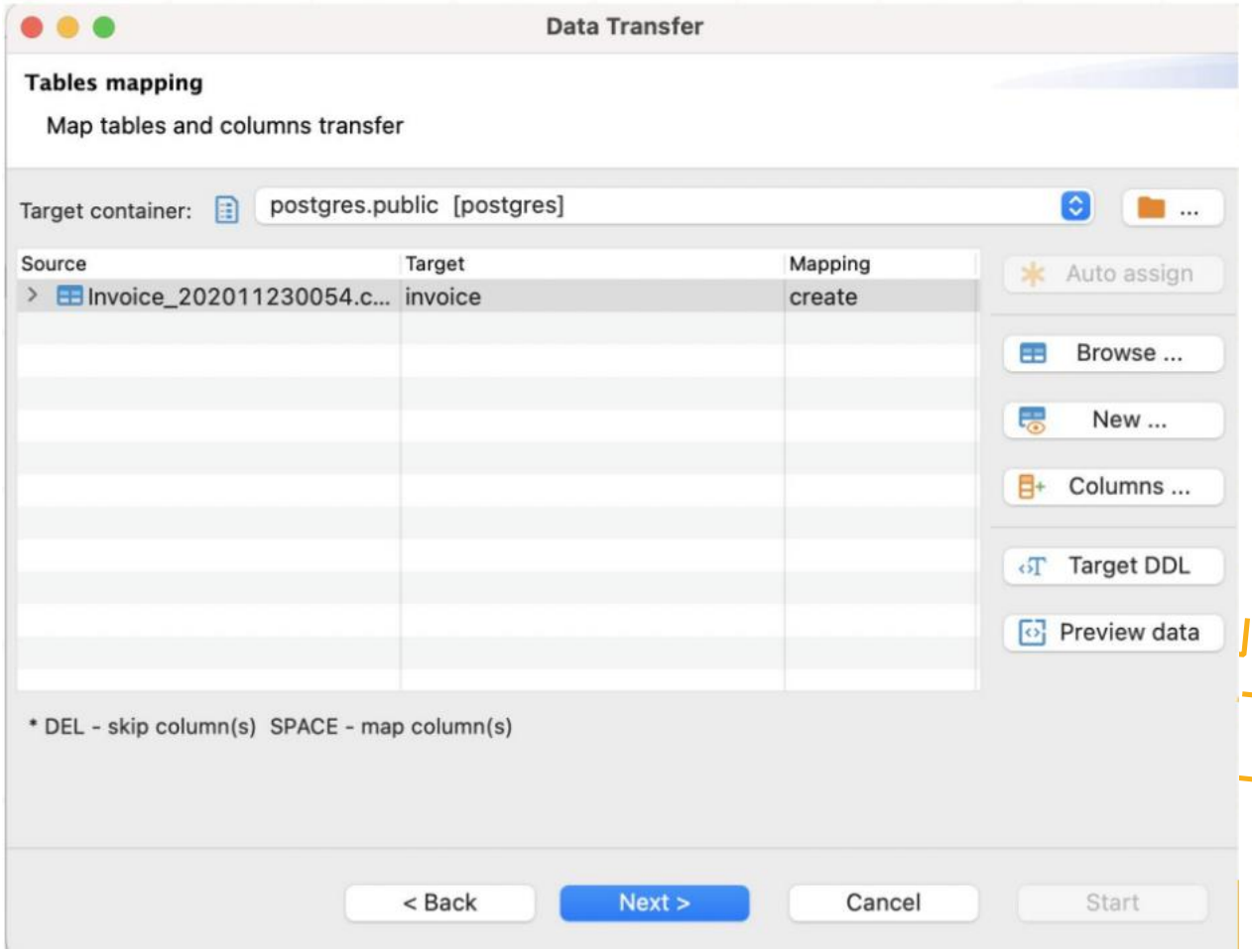
DigitalSkola
Uncover The World Of Digital Skills With Us

Import Data #1



Import Data #2





DigitalSkola
Uncover The World Of Digital Skills With Us

We can also Create Table

Create Table

```
CREATE TABLE SANDBOX.LEARNING.USERS (
        ID INT
        , NAMA VARCHAR
        , BIRTHDATE DATE
        , KTP BIGINT
        , BADGE VARCHAR
)
```

DigitalSkola
Uncover The World Of Digital Skills With Us

After that we insert data to the table

Insert Into

```
INSERT INTO SANDBOX.LEARNING.USERS VALUES
(1, ‘Udin’, ‘1990-01-01, 123123123, ‘Pelanggan Premium’),
(2, ‘Usep’, ‘1991-01-01, 32132121, ‘Pelanggan Biasa’)
```

	123 id	ABC nama	birthdate	123 ktp	ABC badge
1	1	Udin	1990-01-01	123,123,123	Pelanggan Premium
2	2	Usep	1991-01-01	321,321,321	Pelanggan Biasa

DigitalSkola
Uncover The World Of Digital Skills With Us

We can also Update the data inside table

Update

```
UPDATE SANDBOX.LEARNING.USERS
SELECT BIRTHDATE = '1997-01-01'
WHERE ID = 4
```

123 id	ABC nama	birthdate	123 ktp	ABC badge
1	Udin	1990-01-01	123,123,123	Pelanggan Premium
2	Usep	1991-01-01	321,321,321	Pelanggan Biasa
3	Alex	[NULL]	[NULL]	[NULL]
4	Asep	1997-01-01	[NULL]	[NULL]

DigitalSkola
Uncover The World Of Digital Skills With Us

How about adding new column?

Alter Table

```
ALTER TABLE SANDBOX.LEARNING.USERS ADD ALAMAT VARCHAR;

ALTER TABLE SANDBOX.LEARNING.USERS ADD PEKERJAAN VARCHAR;
```

id	nama	birthdate	ktp	badge	alamat	pekerjaan
1	Udin	1990-01-01	123,123,123	Pelanggan Premium	[NULL]	[NULL]
2	Usep	1991-01-01	321,321,321	Pelanggan Biasa	[NULL]	[NULL]
3	Alex	[NULL]	[NULL]	[NULL]	[NULL]	[NULL]
4	Asep	1997-01-01	[NULL]	[NULL]	[NULL]	[NULL]

Alter Table

```
ALTER TABLE SANDBOX.LEARNING.USERS DROP COLUMN ALAMAT;

ALTER TABLE SANDBOX.LEARNING.USERS DROP COLUMN PEKERJAAN;
```

123 id	ABC nama	birthdate	123 ktp	ABC badge
1	Udin	1990-01-01	123,123,123	Pelanggan Premium
2	Usep	1991-01-01	321,321,321	Pelanggan Biasa
3	Alex	[NULL]	[NULL]	[NULL]
4	Asep	1997-01-01	[NULL]	[NULL]

DigitalSkola
Uncover The World Of Digital Skills With Us

What if we want to delete some rows?

Delete

```
DELETE FROM SANDBOX.LEARNING.USERS WHERE ID = 3;
```

123 id	ABC nama	birthdate	123 ktp	ABC badge
1	Udin	1990-01-01	123,123,123	Pelanggan Premium
2	Usep	1991-01-01	321,321,321	Pelanggan Biasa
4	Asep	1997-01-01	[NULL]	[NULL]

DigitalSkola
Uncover The World Of Digital Skills With Us

We can also cleanse the table?

Truncate Table

```
TRUNCATE TABLE SANDBOX.LEARNING.USERS
```

DigitalSkola
Uncover The World Of Digital Skills With Us

This is not recommended, but we can also remove the table

Drop Table

```
DROP TABLE SANDBOX.LEARNING.USERS
```

Name	Value
Updated Rows	0
Query	-- Menghapus table DROP TABLE sandbox.learning.users
Finish time	Thu Jan 14 21:32:55 WIB 2021

DigitalSkola
Uncover The World Of Digital Skills With Us

That’s it for today!

Recap

1. Introduction to SQL
2. Select Data
3. Create Table
4. Insert Table
5. Update Table
6. Delete Table

DigitalSkola

Uncover The World Of Digital Skills With Us

Thank YOU