

Information Technologies for Industrial Engineers

เทคโนโลยีสารสนเทศสำหรับวิศวกรอุตสาหกรรม

Database

Why?

Topic	Details
Data persistence	ข้อมูลไม่หายเวลา Refresh แอป
Data integrity	เก็บข้อมูลแบบมี Format สม่ำเสมอ
Data security	กำหนดการอนุญาตเข้าถึงข้อมูลได้
Data scalability	ข้อมูล "เยอะ" ก็ไม่ช้า

สองค่าย

- SQL
 - Table-based (like Excel)
 - Relational
- NoSQL
 - Document-based (document, key-value, or wide-column stores)
 - Non-relational

"SQL" Database

- PostgreSQL
- MySQL
- SQLite
- Microsoft SQL Server
- MariaDB
- Oracle

"NoSQL" Database

- MongoDB
- Redis
- Elasticsearch
- Dynamodb
- Firebase Cloud Firestore (ຈຳໄດ້ປາວ)

Popularity

<https://survey.stackoverflow.co/2023/#section-most-popular-technologies-databases>

Let's create your own cloud database

<https://supabase.com/>

Tasks

- Sign up
- Create organization
- Create project
- Create table
- Input some data

SQL commands

Create table

```
CREATE TABLE IF NOT EXISTS
  todos (
    id serial PRIMARY KEY,
    title VARCHAR(50) NOT NULL,
    created_at TIMESTAMPTZ NOT NULL DEFAULT NOW()
  );
```

Delete table

```
DROP TABLE IF EXISTS todos;
```

View data

```
SELECT * from todos;
```

```
SELECT  
  id,  
  title,  
  created_at  
from  
  todos;
```

Create data

```
INSERT INTO
  todos (title)
VALUES
  ('First Todo'),
  ('Second Todo'),
  ('Third todo');
```

```
INSERT INTO
  todos (id, title)
VALUES
  (2, 'First Todo'),
  (3, 'Second Todo'),
  (4, 'Third todo');
```

Delete rows

```
DELETE FROM  
  todos  
WHERE  
  id = 1;
```

```
DELETE FROM  
  todos  
WHERE  
  title = 'First Todo';
```

Let's make a todo app (react + supabase)

Getting info

- Get `Access Token`
 - <https://supabase.com/dashboard/account/tokens>
- Get `Reference ID`
 - "Project Settings" -> "General"
- `URL`
 - "Project Settings" -> "API"
- `API_KEY` (*anon, public*)
 - "Project Settings" -> "API"

Setting up

- `npm create vite@latest`
 - ...
- `npm install @supabase/supabase-js`
- `npm install supabase --save-dev`

Setting up

- `npx supabase login`
 - Use your Access Token
- `npx supabase gen types typescript --project-id "Reference_ID" --schema public > ./src/types.ts`

```
./.env
```

```
VITE_SUPABASE_URL=YOUR_URL  
VITE_SUPABASE_KEY=YOUR_KEY
```

./src/db.ts

```
import { createClient } from "@supabase/supabase-js";
import { Database } from "../types";
// Supabase client
export const supabase = createClient<Database>(
  import.meta.env.VITE_SUPABASE_URL,
  import.meta.env.VITE_SUPABASE_KEY
);
```

Viewing todos

<https://gist.github.com/nnnpoooh/66092ee987fcd7926cd63c523cbaefb8>

Adding / deleting todos

<https://gist.github.com/nnnpoooh/cdffa1f4c71866058680ee91545daa03>

Full CRUD todo

- Starter:
<https://gist.github.com/nnnpoooh/a312c5b008941df4ac403dab7803a8dd>
- Code:
<https://gist.github.com/nnnpoooh/3f65fb2c360ba722d046a3bafce4e69f>