Information Technologies for Industrial Engineers

เทคโนโลยีสารสนเทศสำหรับวิศวกรอุตสาหการ

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 (จำได้ป่าว)

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

```sql
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

```sql
SELECT * from todos;
```

```sql
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

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

```sql
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`

```typescript
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/nnnpooh/66092ee987fcd7926cd63c523cbaefb8

Adding / deleting todos

https://gist.github.com/nnnpooh/cdffa1f4c71866058680ee91545daa03