Backend Developer Assignment

Introduction: Building a RESTful API for a task management system using Node.js, TypeScript, PostgreSQL, Factify and Firebase Functions.

API Design and Routes: Design and implement API routes for the following functionalities:

1. Create a new task

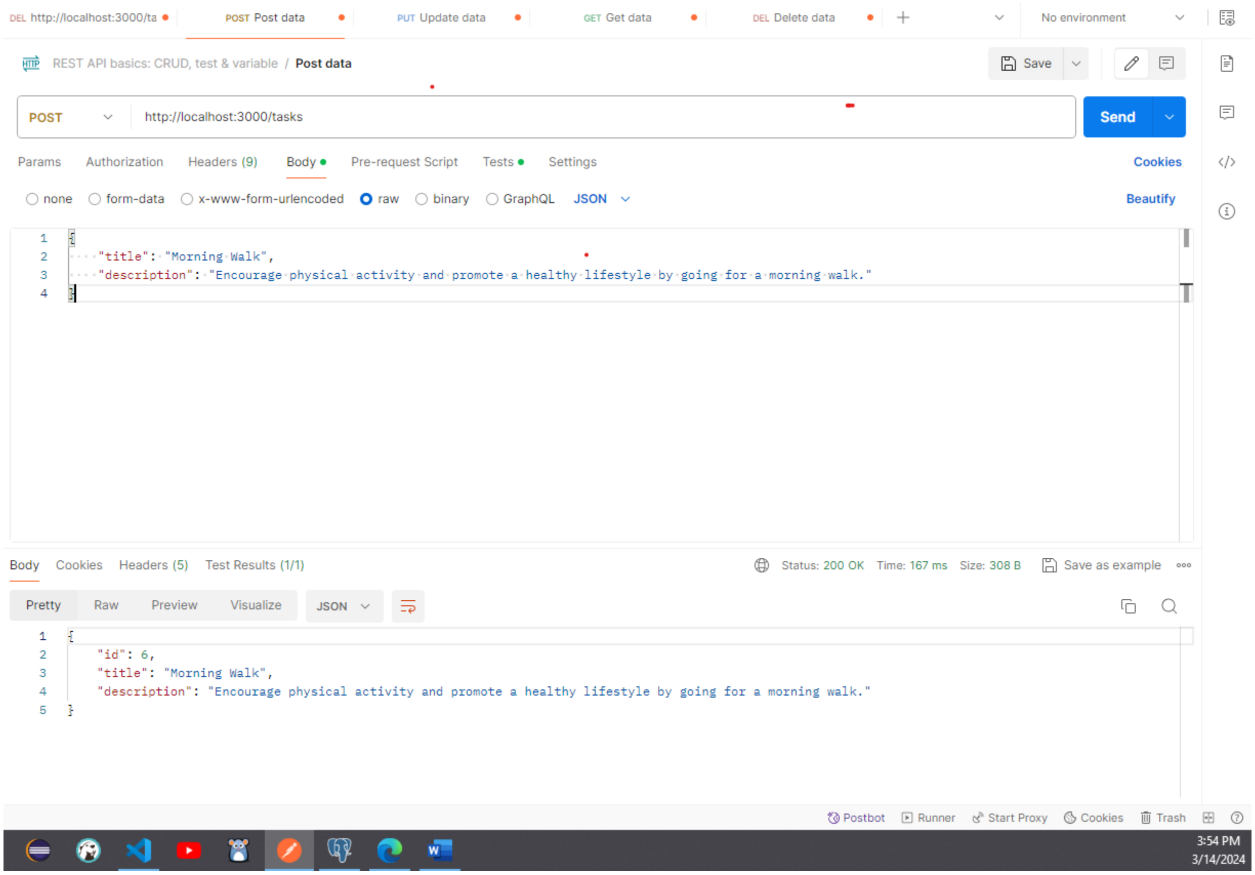
URL: http://localhost:3000/tasks

Request Type: POST

BODY:

```
{
"title": "walk",
"description": "at 6:00 am daily"
}
```

REQUEST:



POST http://localhost:3000/tasks

○ none ○ form-data ○ x-www-form-urlencoded ● raw ○ binary ○ GraphQL JSON

```
{
    "title": "Morning Walk",
    "description": "Encourage physical activity and promote a healthy lifestyle by going for a morning walk."
}
```

Body Cookies Headers (5) Test Results (1/1)

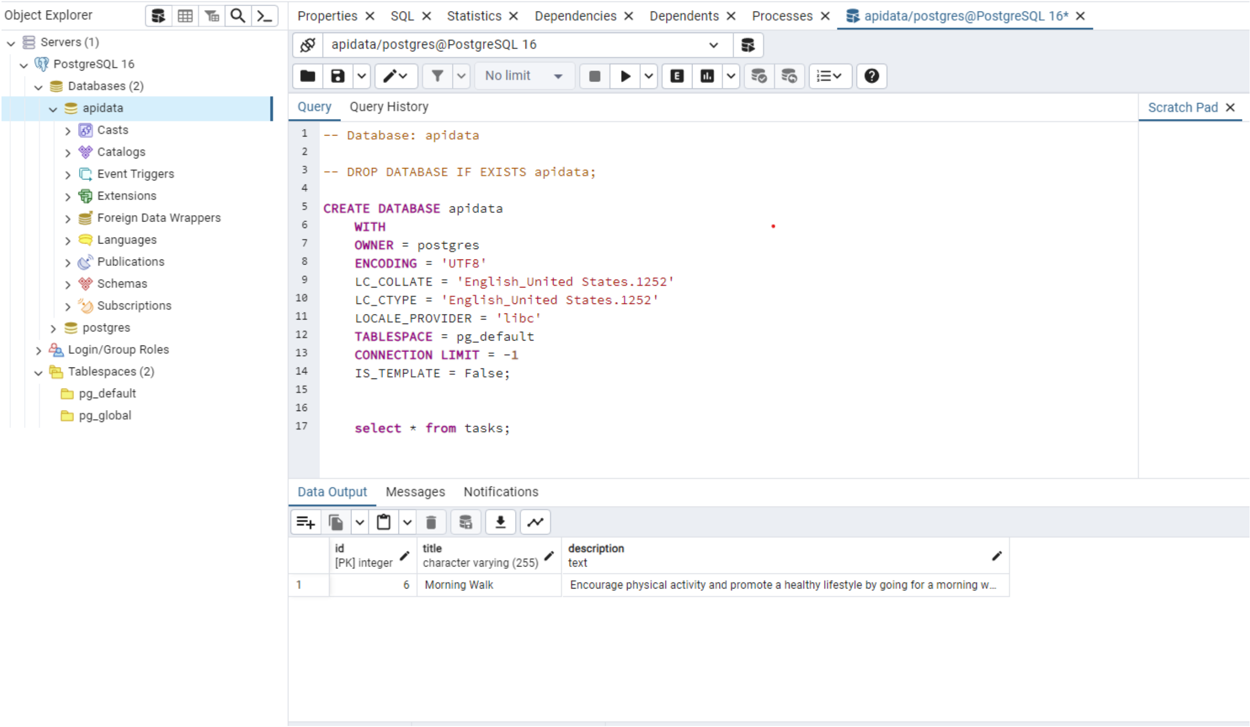
Status: 200 OK Time: 167 ms Size: 308 B Save as example

JSON

```
{
    "id": 6,
    "title": "Morning Walk",
    "description": "Encourage physical activity and promote a healthy lifestyle by going for a morning walk."
}
```

3:54 PM
3/14/2024

RESPONSE:



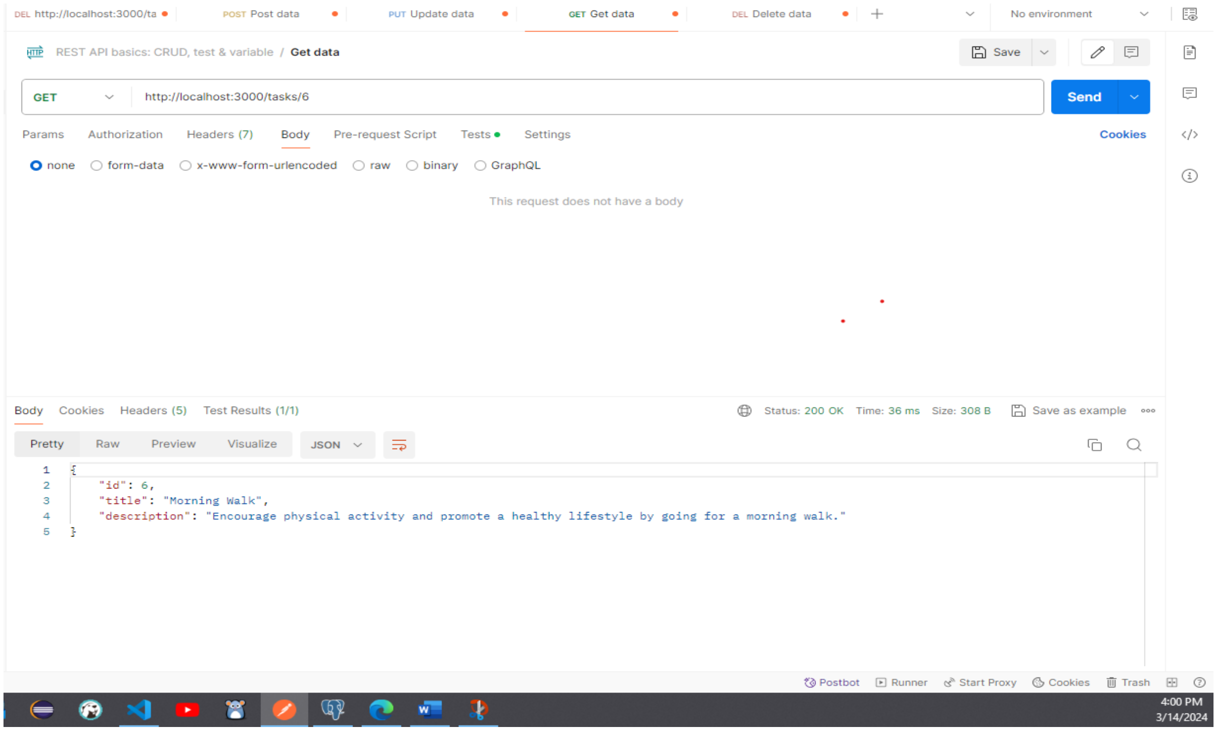
```
-- Database: apidata

-- DROP DATABASE IF EXISTS apidata;

CREATE DATABASE apidata
    WITH
    OWNER = postgres
    ENCODING = 'UTF8'
    LC_COLLATE = 'English_United States.1252'
    LC_CTYPE = 'English_United States.1252'
    LOCALE_PROVIDER = 'libc'
    TABLESPACE = pg_default
    CONNECTION LIMIT = -1
    IS_TEMPLATE = False;


    select * from tasks;
```

	id [PK] integer	title character varying (255)	description text
1	6	Morning Walk	Encourage physical activity and promote a healthy lifestyle by going for a morning w...

2. Retrieve a task by ID

URL: http://localhost:3000/tasks/6

Request Type: GET **REQUEST/RESPONSE:**



GET http://localhost:3000/tasks/6

Body: ● none ○ form-data ○ x-www-form-urlencoded ○ raw ○ binary ○ GraphQL

This request does not have a body

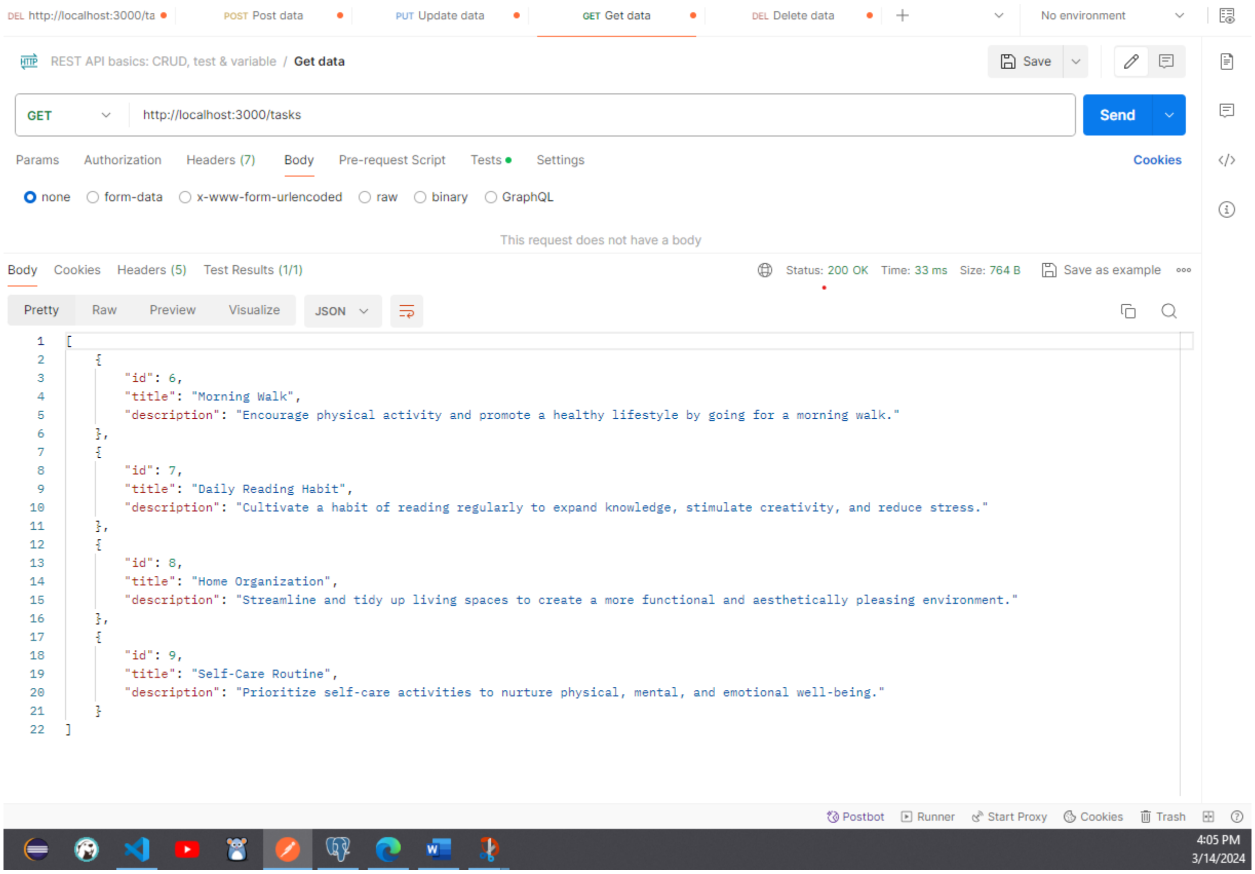
Status: 200 OK Time: 36 ms Size: 308 B

```
{
    "id": 6,
    "title": "Morning Walk",
    "description": "Encourage physical activity and promote a healthy lifestyle by going for a morning walk."
}
```

3. List all tasks

URL: http://localhost:3000/tasks

Request Type: GET **REQUEST/RESPONSE:**



GET http://localhost:3000/tasks

● none ○ form-data ○ x-www-form-urlencoded ○ raw ○ binary ○ GraphQL

This request does not have a body

Status: 200 OK Time: 33 ms Size: 764 B

JSON

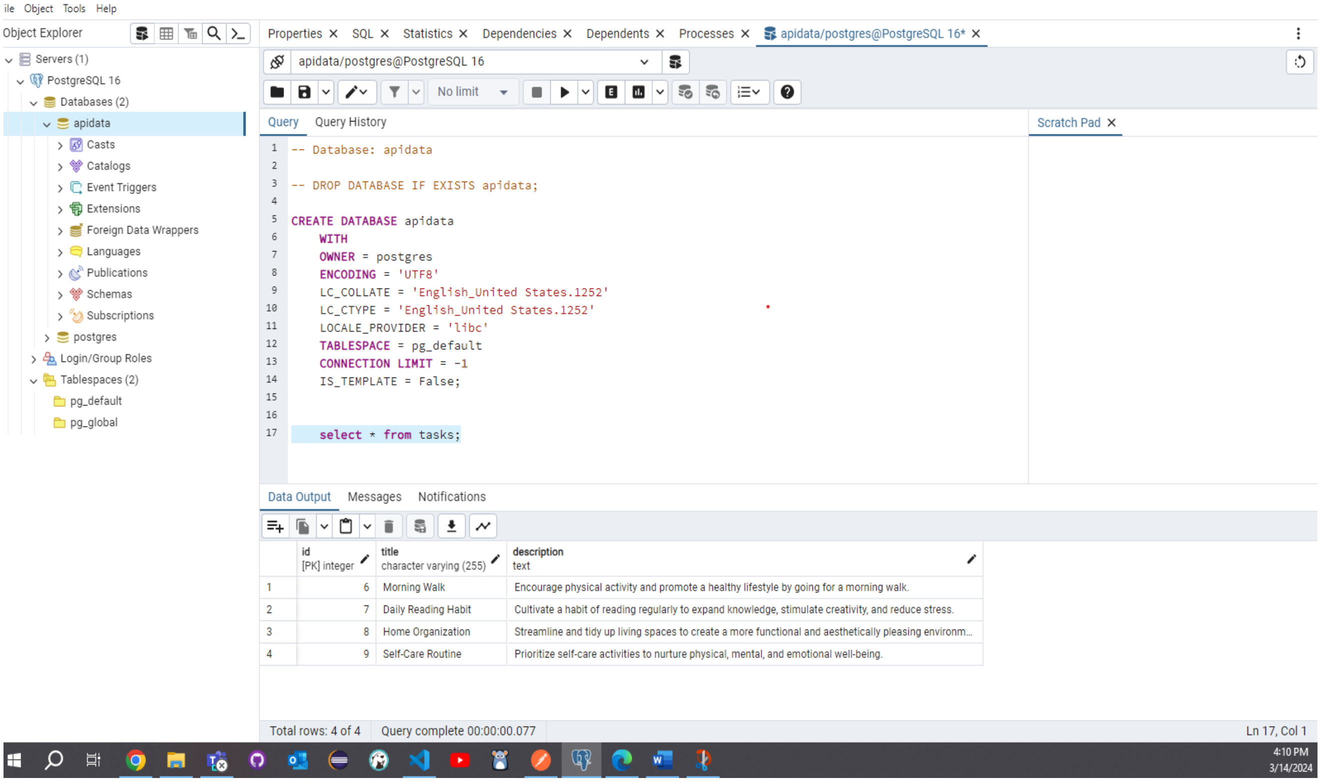
```
[
    {
        "id": 6,
        "title": "Morning Walk",
        "description": "Encourage physical activity and promote a healthy lifestyle by going for a morning walk."
    },
    {
        "id": 7,
        "title": "Daily Reading Habit",
        "description": "Cultivate a habit of reading regularly to expand knowledge, stimulate creativity, and reduce stress."
    },
    {
        "id": 8,
        "title": "Home Organization",
        "description": "Streamline and tidy up living spaces to create a more functional and aesthetically pleasing environment."
    },
    {
        "id": 9,
        "title": "Self-Care Routine",
        "description": "Prioritize self-care activities to nurture physical, mental, and emotional well-being."
    }
]
```

4. Update a task

URL: http://localhost:3000/tasks/9

Request Type: PUT

BEFORE UPDATE:

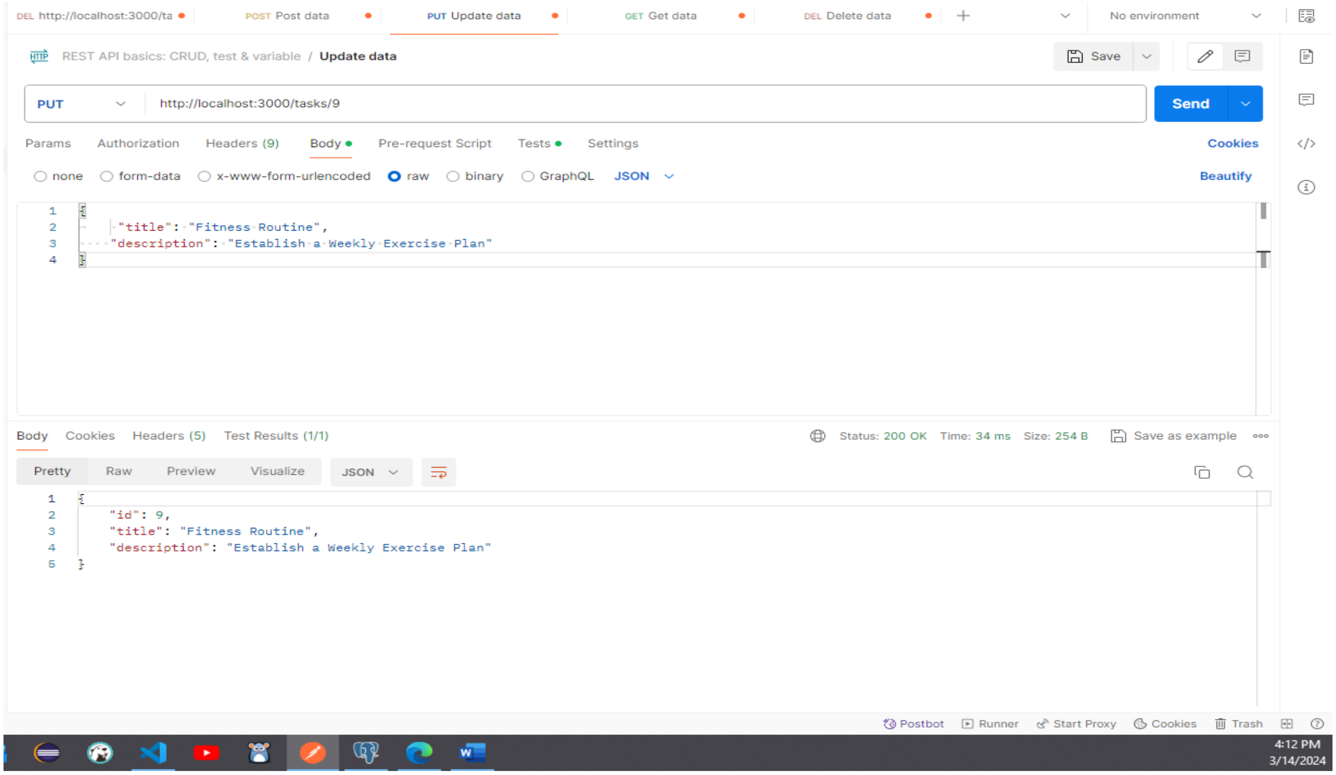


```sql
-- Database: apidata

-- DROP DATABASE IF EXISTS apidata;

CREATE DATABASE apidata
    WITH
    OWNER = postgres
    ENCODING = 'UTF8'
    LC_COLLATE = 'English_United States.1252'
    LC_CTYPE = 'English_United States.1252'
    LOCALE_PROVIDER = 'libc'
    TABLESPACE = pg_default
    CONNECTION LIMIT = -1
    IS_TEMPLATE = False;


    select * from tasks;
```

	id [PK] integer	title character varying (255)	description text
1	6	Morning Walk	Encourage physical activity and promote a healthy lifestyle by going for a morning walk.
2	7	Daily Reading Habit	Cultivate a habit of reading regularly to expand knowledge, stimulate creativity, and reduce stress.
3	8	Home Organization	Streamline and tidy up living spaces to create a more functional and aesthetically pleasing environm...
4	9	Self-Care Routine	Prioritize self-care activities to nurture physical, mental, and emotional well-being.

Total rows: 4 of 4 Query complete 00:00:00.077

PUT REQUEST:



PUT http://localhost:3000/tasks/9

○ none ○ form-data ○ x-www-form-urlencoded ● raw ○ binary ○ GraphQL JSON

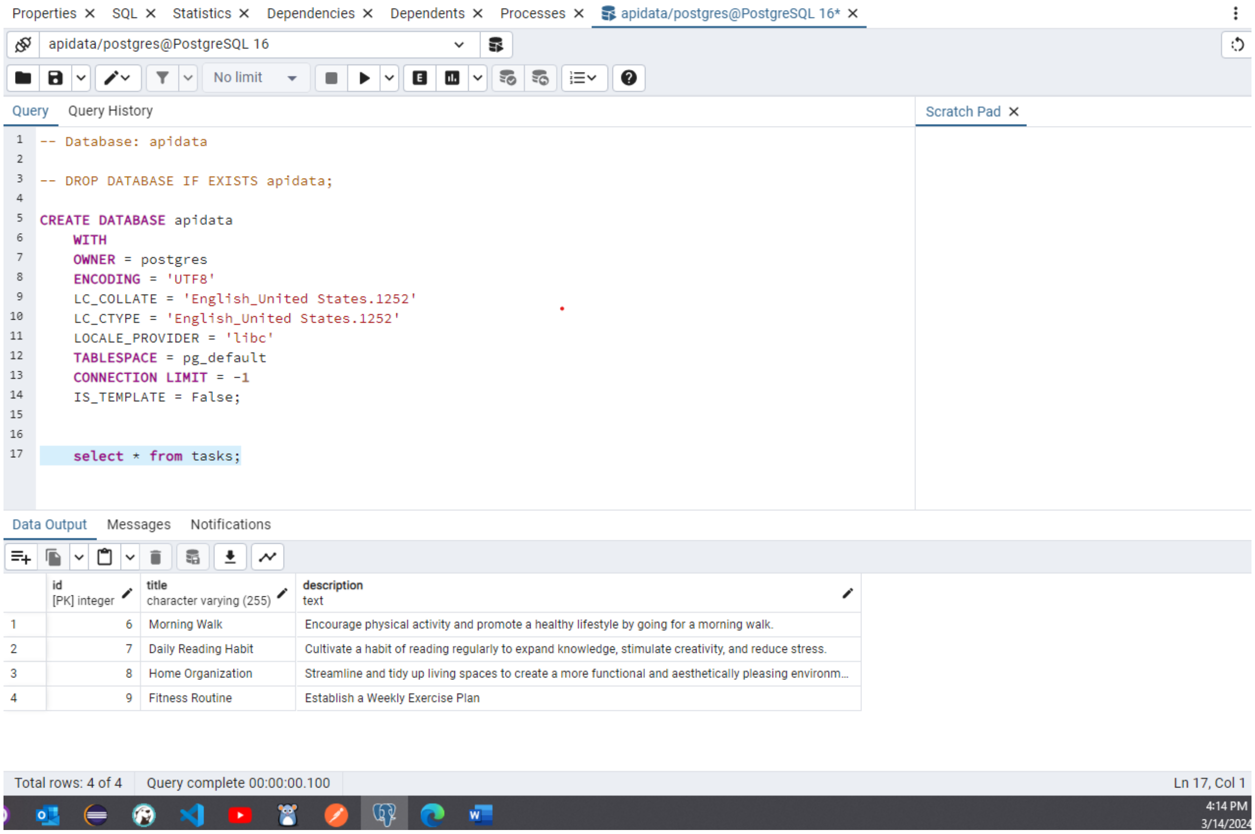
```json
{
    "title": "Fitness Routine",
    "description": "Establish a Weekly Exercise Plan"
}
```

Body Cookies Headers (5) Test Results (1/1) Status: 200 OK Time: 34 ms Size: 254 B

JSON

```json
{
    "id": 9,
    "title": "Fitness Routine",
    "description": "Establish a Weekly Exercise Plan"
}
```

AFTER UPDATE:



```sql
-- Database: apidata

-- DROP DATABASE IF EXISTS apidata;

CREATE DATABASE apidata
    WITH
    OWNER = postgres
    ENCODING = 'UTF8'
    LC_COLLATE = 'English_United States.1252'
    LC_CTYPE = 'English_United States.1252'
    LOCALE_PROVIDER = 'libc'
    TABLESPACE = pg_default
    CONNECTION LIMIT = -1
    IS_TEMPLATE = False;


    select * from tasks;
```

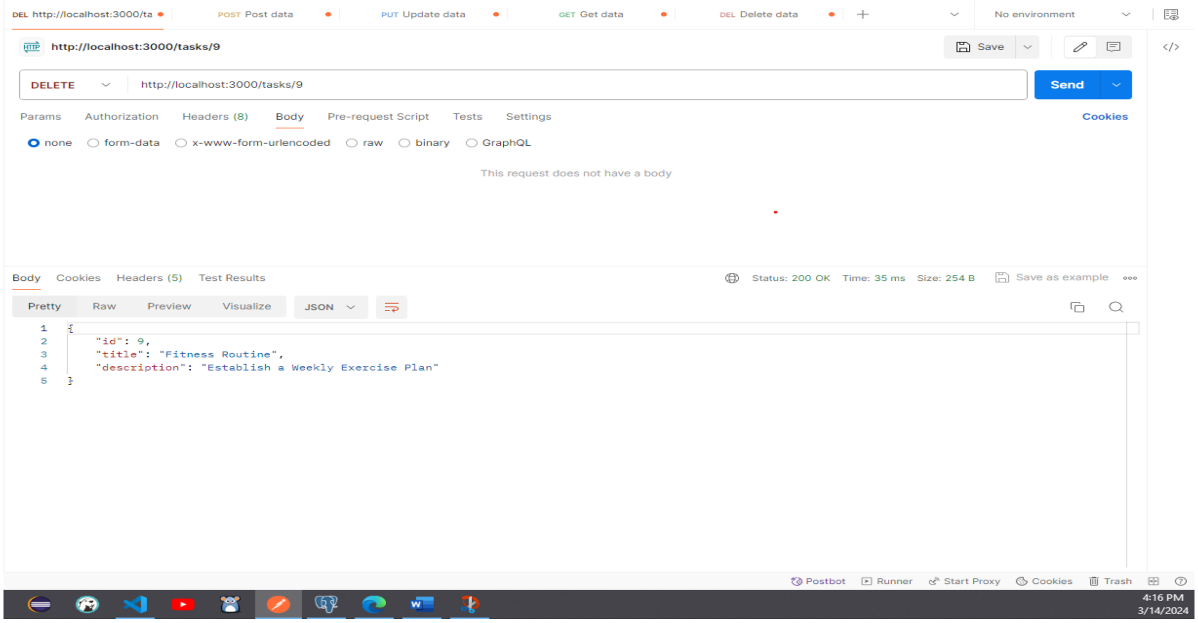
	id [PK] integer	title character varying (255)	description text
1	6	Morning Walk	Encourage physical activity and promote a healthy lifestyle by going for a morning walk.
2	7	Daily Reading Habit	Cultivate a habit of reading regularly to expand knowledge, stimulate creativity, and reduce stress.
3	8	Home Organization	Streamline and tidy up living spaces to create a more functional and aesthetically pleasing environm...
4	9	Fitness Routine	Establish a Weekly Exercise Plan

Total rows: 4 of 4 Query complete 00:00:00.100 Ln 17, Col 1

5. Delete a task

URL: http://localhost:3000/tasks/9

Request Type: PUT



http://localhost:3000/tasks/9

DELETE http://localhost:3000/tasks/9

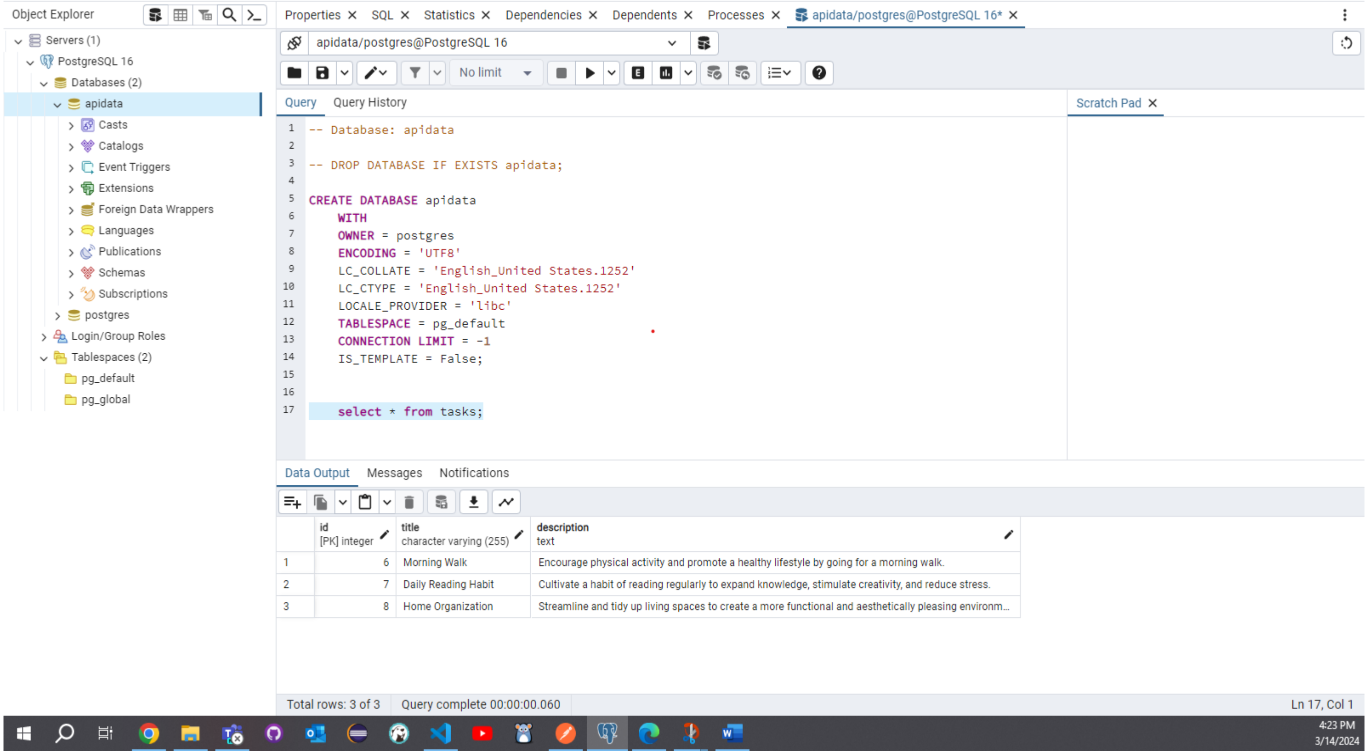
● none ○ form-data ○ x-www-form-urlencoded ○ raw ○ binary ○ GraphQL

This request does not have a body

Body Status: 200 OK Time: 35 ms Size: 254 B

```json
{
    "id": 9,
    "title": "Fitness Routine",
    "description": "Establish a Weekly Exercise Plan"
}
```

DATABASE:



```sql
-- Database: apidata

-- DROP DATABASE IF EXISTS apidata;

CREATE DATABASE apidata
    WITH
    OWNER = postgres
    ENCODING = 'UTF8'
    LC_COLLATE = 'English_United States.1252'
    LC_CTYPE = 'English_United States.1252'
    LOCALE_PROVIDER = 'libc'
    TABLESPACE = pg_default
    CONNECTION LIMIT = -1
    IS_TEMPLATE = False;


    select * from tasks;
```

	id [PK] integer	title character varying (255)	description text
1	6	Morning Walk	Encourage physical activity and promote a healthy lifestyle by going for a morning walk.
2	7	Daily Reading Habit	Cultivate a habit of reading regularly to expand knowledge, stimulate creativity, and reduce stress.
3	8	Home Organization	Streamline and tidy up living spaces to create a more functional and aesthetically pleasing environm...

Total rows: 3 of 3 Query complete 00:00:00.060

DATBASE: PostgreSQL

BACKEND: Node.js, TypeScript

API TESTING:POSTMAN

Validation and Error Handling:

- **npm install fastify-schema-** We import FastifySchema from fastify-schema to define JSON schemas for request validation