

UNIVERSIDAD  
**CATÓLICA**  
BOLIVIANA

Departamento de Postgrado  
Maestría FullStack Development

## **EJERCICIO GUIADO: PROYECTO FINAL**

Módulo 1: Fundamentos del Desarrollo FullStack

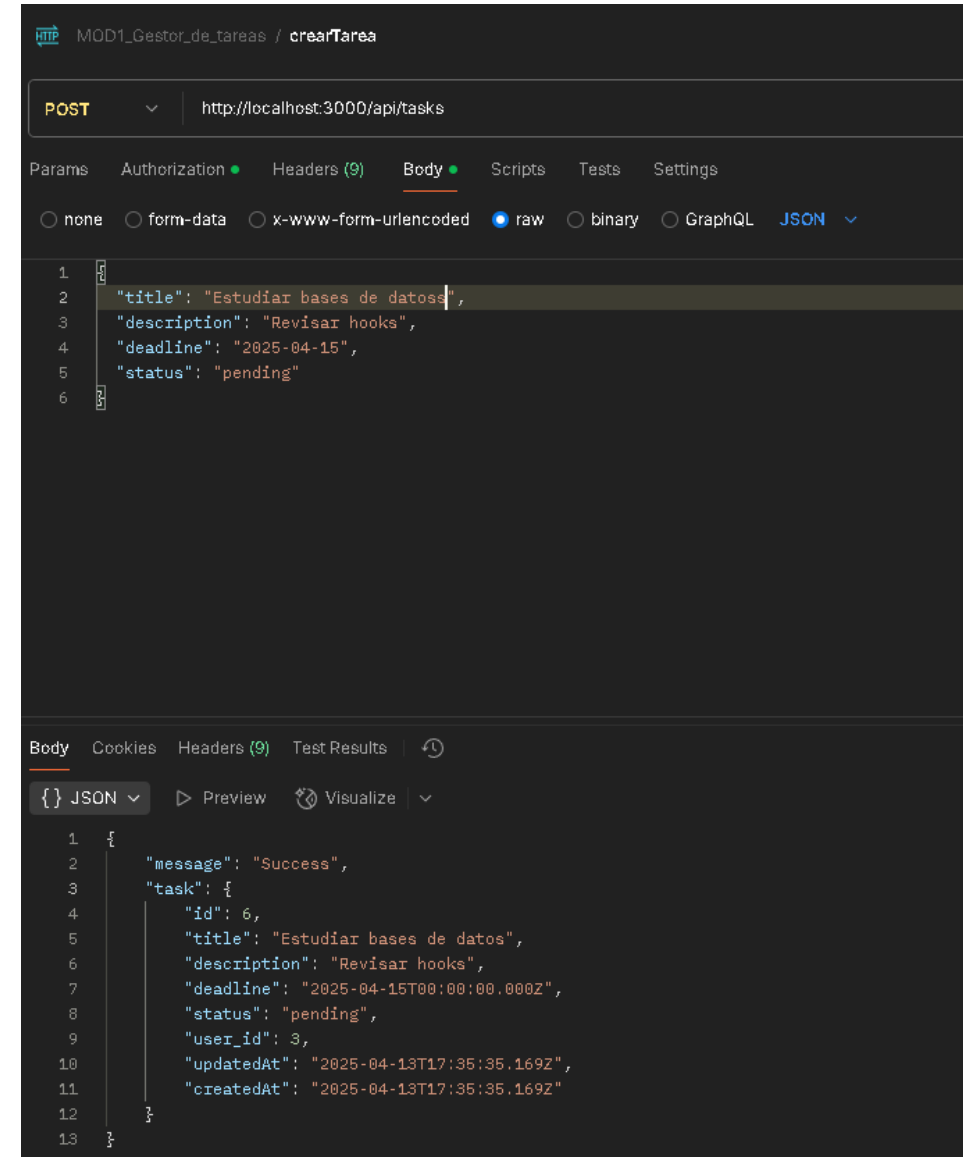
Docente: MS. Sc. Lic. Katia Luz Mansilla Arce

La Paz - Bolivia

# CRUD DE TAREAS:

- o Crear una tarea con título, descripción, estado y fecha límite.
- o Editar una tarea.
- o Marcar una tarea como completada.
- o Eliminar una tarea.

[https://github.com/Renevc14/M1\\_Proyecto\\_Final](https://github.com/Renevc14/M1_Proyecto_Final)



PUT ▼ http://localhost:3000/api/tasks/3

Params Authorization ● Headers (9) Body ● Scripts ● Tests ● Settings

☐ none ☐ form-data ☐ x-www-form-urlencoded ☒ raw ☐ binary ☐ GraphQL **JSON** ▼

```
1 {
2   "status": "in_progress"
3 }
```

Body Cookies Headers (9) Test Results (1/1) ↺

**{}** JSON ▼ ▶ Preview 🔗 Visualize ▼

```
1 {
2   "message": "Success",
3   "task": {
4     "id": 3,
5     "title": "Estudiar Front",
6     "description": "Revisar hooks",
7     "status": "in_progress",
8     "deadline": "2025-04-15T00:00:00.000Z",
9     "user_id": 1,
10    "createdAt": "2025-04-13T12:57:56.176Z",
11    "updatedAt": "2025-04-13T17:58:20.965Z"
12  }
13 }
```

HTTP MOD1\_Gestor\_de\_tareas / actualizarTask

PUT ▼ http://localhost:3000/api/tasks/3

Params Authorization ● Headers (9) Body ● Scripts ● Tests ● Settings

☐ none ☐ form-data ☐ x-www-form-urlencoded ☒ raw ☐ binary ☐ GraphQL **JSON** ▼

```
1 {
2   "status": "complete"
3 }
```

Body Cookies Headers (9) Test Results (0/1) ↺

**{}** JSON ▼ ▶ Preview 🔗 Visualize ▼

```
1 {
2   "errors": [
3     {
4       "type": "field",
5       "value": "complete",
6       "msg": "Status is not valid",
7       "path": "status",
8       "location": "body"
9     }
10  ]
11 }
```

HTTP MOD1\_Gestor\_de\_tareas / eliminarTarea

DELETE

http://localhost:3000/api/tasks/1

Params

Authorization ●

Headers (9)

Body ●

Scripts ●

Tests ●

Settings

☐ none

☐ form-data

☐ x-www-form-urlencoded

☒ raw

☐ binary

☐ GraphQL

JSON ▾

```
1  {  
2  
3  }
```

Body

Cookies

Headers (9)

Test Results (1/1)



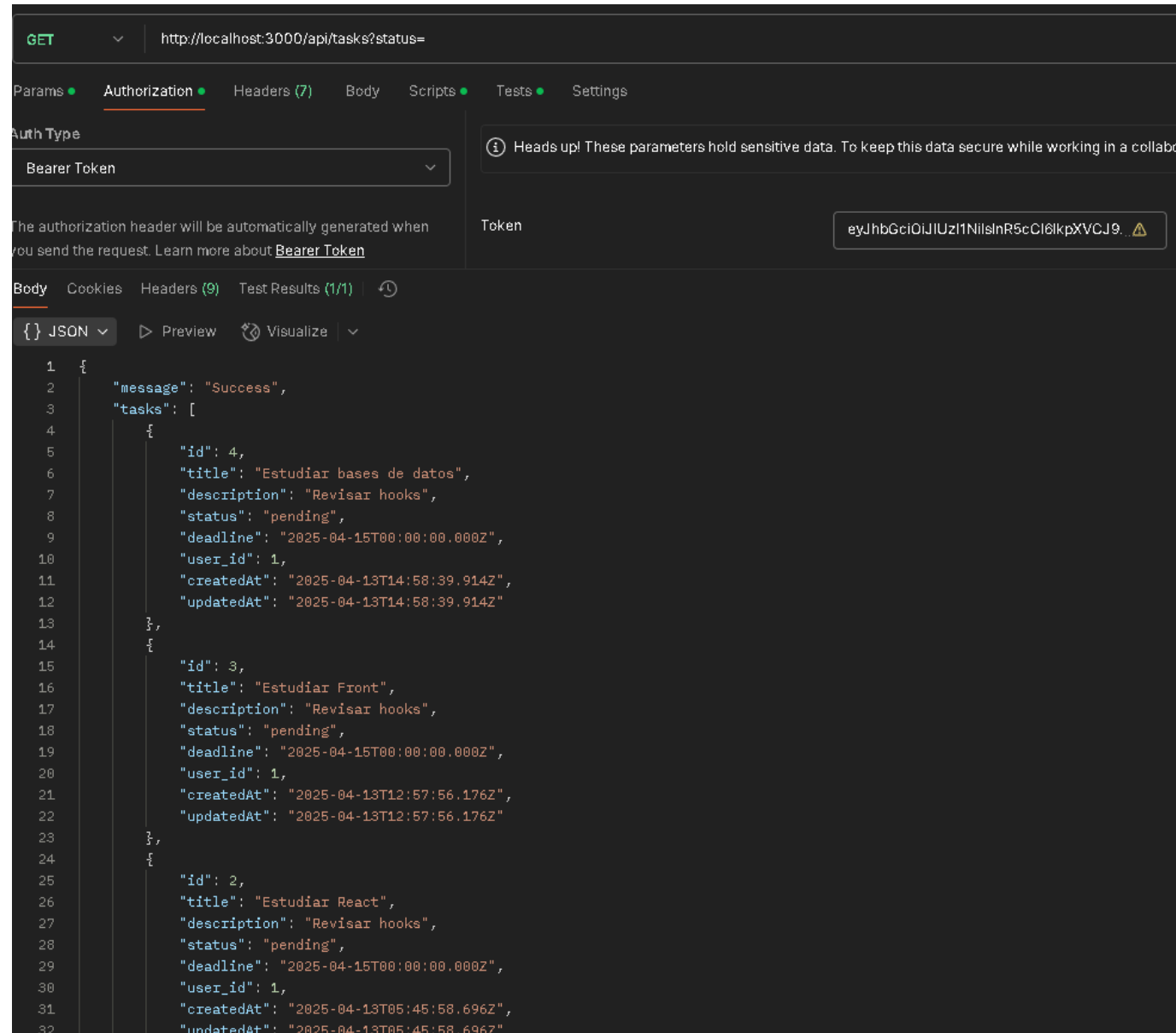
{ } JSON ▾

▶ Preview

🔗 Visualize ▾

```
1  {  
2    "message": "Task deleted successfully"  
3  }
```

# Filtrado y búsqueda de tareas por estado o fecha.



GET <http://localhost:3000/api/tasks?status=>

Params • **Authorization** • Headers (7) • Body • Scripts • Tests • Settings

Auth Type

Bearer Token

Heads up! These parameters hold sensitive data. To keep this data secure while working in a collabor

The authorization header will be automatically generated when you send the request. Learn more about [Bearer Token](#)

Token

eyJhbGciOiJIUzI1NiIsInR5cCI6IkpXVCJ9.eyJ1

Body Cookies Headers (9) Test Results (1/1) ↻

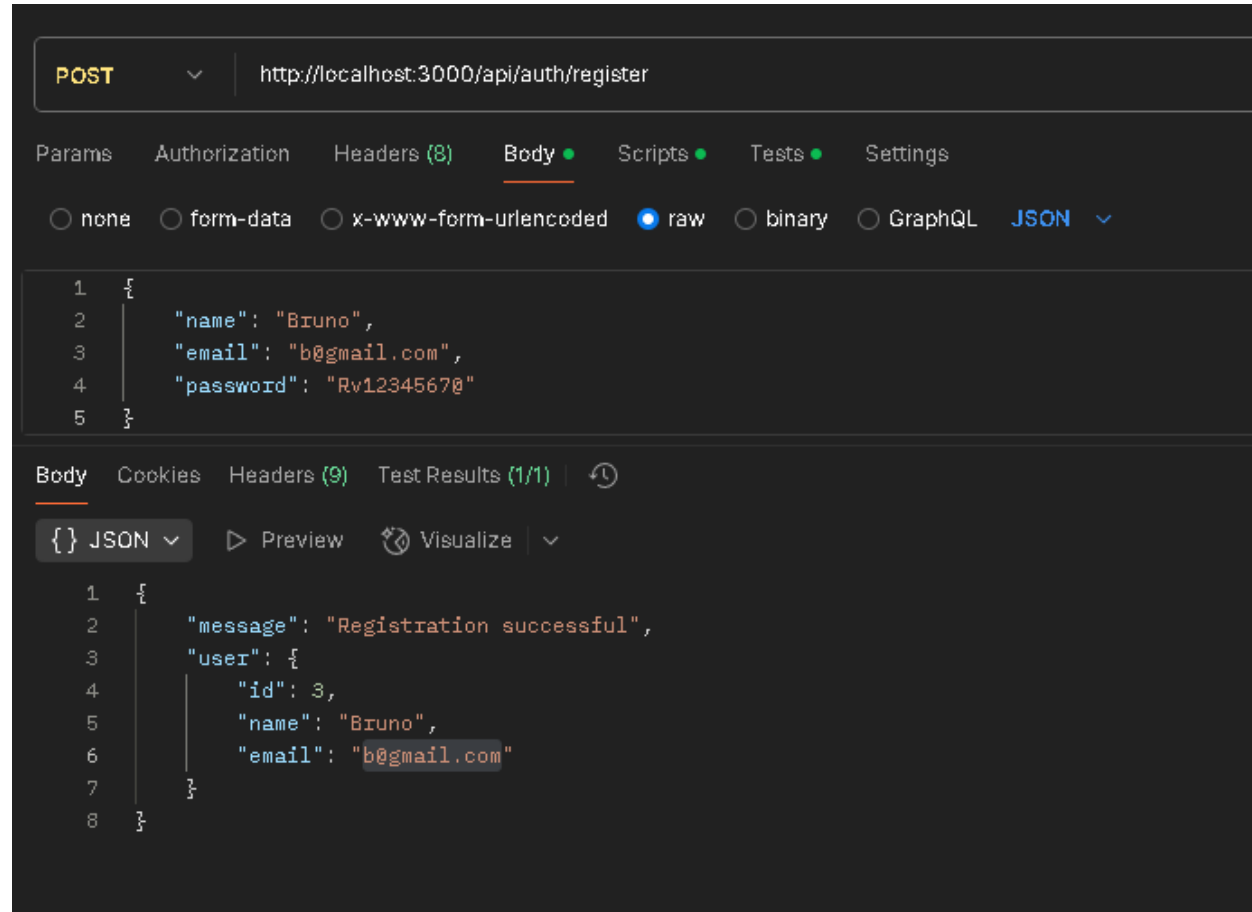
{ } JSON ▾ ▶ Preview 🔗 Visualize ▾

```
1 {
2   "message": "Success",
3   "tasks": [
4     {
5       "id": 4,
6       "title": "Estudiar bases de datos",
7       "description": "Revisar hooks",
8       "status": "pending",
9       "deadline": "2025-04-15T00:00:00.000Z",
10      "user_id": 1,
11      "createdAt": "2025-04-13T14:58:39.914Z",
12      "updatedAt": "2025-04-13T14:58:39.914Z"
13    },
14    {
15      "id": 3,
16      "title": "Estudiar Front",
17      "description": "Revisar hooks",
18      "status": "pending",
19      "deadline": "2025-04-15T00:00:00.000Z",
20      "user_id": 1,
21      "createdAt": "2025-04-13T12:57:56.176Z",
22      "updatedAt": "2025-04-13T12:57:56.176Z"
23    },
24    {
25      "id": 2,
26      "title": "Estudiar React",
27      "description": "Revisar hooks",
28      "status": "pending",
29      "deadline": "2025-04-15T00:00:00.000Z",
30      "user_id": 1,
31      "createdAt": "2025-04-13T05:45:58.696Z",
32      "updatedAt": "2025-04-13T05:45:58.696Z"
```

# Conexión con PostgreSQL

```
1 require('dotenv').config();
2 module.exports = {
3   development: {
4     username: process.env.DB_USERNAME || 'postgres',
5     password: process.env.DB_PASSWORD || 'postgres',
6     database: process.env.DB_NAME || 'gestor',
7     host: process.env.DB_HOST || 'localhost',
8     dialect: 'postgres',
9   },
10  test: {
11    username: process.env.DB_USERNAME || 'postgres',
12    password: process.env.DB_PASSWORD || 'postgres',
13    database: process.env.DB_NAME || 'postgres',
14    host: process.env.DB_HOST || 'localhost',
15    dialect: 'postgres',
16  },
17  production: {
18    username: process.env.PROD_DB_USERNAME || 'postgres',
19    password: process.env.PROD_DB_PASSWORD || 'postgres',
20    database: process.env.PROD_DB_NAME || 'postgres',
21    host: process.env.PROD_DB_HOST || 'localhost',
22    dialect: 'postgres',
23  }
24 }
```

# Registro de usuario con nombre, email y contraseña.



# INICIO DE SESIÓN

○ none

○ form-data

○ x-www-form-urlencoded

raw

○ binary

○ GraphQL

JSON

▼

1

2

3

4

{

"email": "renvilela@gmail.com",

"password": "Rv12345678"

}

Iniciar sesión

renvilela@gmail.com

.....

Entrar

Body

Cookies

Headers (9)

Test Results

🕒

200 OK

• 192 ms

• 499 B

🌐

📄 Save Response

⋮

{}

JSON

▼

▶ Preview

🔗 Visualize

▼

1

2

3

4

{

"message": "Success",

"token": "eyJhbGciOiJIUzI1NiIsInR5cCI6IkpXVCJ9.eyJpZCI6MSwibmFtZSI6IjI1bmUgVmVmlsZWxhIiwiaWF0IjoxNzQ0NTY1NzQ5LCJleHAiOjE3NDQ2NTI1ND19.TYgtWvvsTkIND1zTxGqBMunJJKzAbFPYctAqcBAhi94"

}



# Protección de rutas privadas

```
const {
  createTask,
  getTasks,
  getTask,
  updateTask,
  deleteTask,
} = require('../controllers/taskController');
const { validate, validation } = require('../middleware/validation');
const { verifyToken } = require('../middleware/auth');

router.post('/', [verifyToken, validate('createTask'), validation], createTask);
router.get('/', [verifyToken, validate('getTasks'), validation], getTasks);
router.get('/:id', [verifyToken], getTask);
router.put(
 ('/:id',
    [verifyToken, validate('updateTask'), validation],
    updateTask,
  );
router.delete('/:id', [verifyToken], deleteTask);

module.exports = router;
```

# Autenticación con JWT

```
backend > middleware > .js auth.js > ...
1  const jwt = require('jsonwebtoken');
2
3  exports.verifyToken = (req, res, next) => {
4    const token = req.headers['authorization']?.split(' ')[1];
5
6    if (!token) {
7      return res.status(403).json({ message: 'No token provided' });
8    }
9
10   try {
11     const decoded = jwt.verify(token, process.env.JWT_SECRET);
12     req.user = decoded;
13     next();
14   } catch (error) {
15     return res.status(401).json({ message: 'Unauthorized' });
16   }
17 };
18
```

# Contraseñas hasheadas con bcrypt.js.

Id [PK] integer	name character varying (255)	email character varying (255)	password character varying (255)
1	Rene Vilela	renvilela@gmail.com	\$2b\$10\$5JOWtiUtzaC0cuUFInHFrehEGvjoTVty.BtGKVirKhLPDreeyCX0q
2	Bruno Vilela	bvilela@gmail.com	\$2b\$10\$R7w2jdd2T82F0MRycvTF9.W0i826JmEV153ilA3uR59ky012KD/ri
3	Bruno	b@gmail.com	\$2b\$10\$IGf85AFhVYqEg/S.M51oZuofxF.5Oq6RHzmQYFpsAB9mwQT0arv...

# Gestión de Tareas

- **Crear tarea con:**

- Título (obligatorio).
- Descripción (opcional).

- 
- Estado (pendiente, en progreso, completada).
    - Una tarea nueva siempre inicia como "pendiente".
  - Fecha límite (opcional).

```
Task.init({
  title: {
    type: DataTypes.STRING,
    allowNull: false
  },
  description: DataTypes.STRING,
  status: {
    type: DataTypes.STRING,
    defaultValue: 'pending'
  },
  deadline: DataTypes.DATE,
  user_id: {
    type: DataTypes.INTEGER,
    allowNull: false
  }
}, {
  sequelize,
  modelName: 'Task',
});
return Task;
};
```

- **Editar una tarea** (modificar título, descripción, estado o fecha límite).
  - Solo se puede marcar como "en progreso" si está en "pendiente".
  - No se puede volver a "pendiente" desde "en progreso" o "completada".
  - Una vez "completada", no se puede modificar (solo eliminar).
- **Marcar una tarea como completada.**
  - Solo se puede marcar como "completada" si está en "en progreso".
- **Eliminar una tarea.**
  - Solo si la tarea esta en estado "Completada"

```

const statusTransitionRules = {
  [STATUS.COMPLETED]: [],
  [STATUS.PENDING]: [STATUS.IN_PROGRESS],
  [STATUS.IN_PROGRESS]: [STATUS.COMPLETED],
};

const isValidStatusTransition = (currentStatus, newStatus) => {
  return statusTransitionRules[currentStatus]?.includes(newStatus) || false;
};

```

```

if (body.status && !isValidStatusTransition(task.status, body.status)) {
  return res.status(400).json({
    message: `Cannot change status from ${task.status} to ${body.status}`,
  });
}

```

# Filtrado y Búsqueda

GET <http://localhost:3000/api/tasks?status=pending>

Params • **Authorization** • Headers (7) • Body • Scripts • Tests • Settings

Auth Type

Bearer Token

Heads up! These parameters hold sensitive data. To keep this data secure while working on this request, you can generate a new token.

The authorization header will be automatically generated when you send the request. Learn more about [Bearer Token](#)

Token

eyJhbGciOiJIUzI1NiIsInR5cCI6IkpXLTJ5In0.

Body • Cookies • Headers (9) • Test Results (1/1) • ⌚

{ } JSON • ▶ Preview • 🔄 Visualize • ▾

```
1 {
2   "message": "Success",
3   "tasks": [
4     {
5       "id": 4,
6       "title": "Estudiar bases de datos",
7       "description": "Revisar hooks",
8       "status": "pending",
9       "deadline": "2025-04-15T00:00:00.000Z",
10      "user_id": 1,
11      "createdAt": "2025-04-13T14:58:39.914Z",
12      "updatedAt": "2025-04-13T14:58:39.914Z"
13    },
14    {
15      "id": 3,
16      "title": "Estudiar Front",
17      "description": "Revisar hooks",
18      "status": "pending",
19      "deadline": "2025-04-15T00:00:00.000Z",
20      "user_id": 1,
21      "createdAt": "2025-04-13T12:57:56.176Z",
22      "updatedAt": "2025-04-13T12:57:56.176Z"
23    }
24  ]
25 }
```

GET <http://localhost:3000/api/tasks?search=Front>

Params • **Authorization** • Headers (7) • Body • Scripts • Tests •

Auth Type

Bearer Token

Heads up! These parameters hold sensitive data. To keep this data secure while working on this request, you can generate a new token.

The authorization header will be automatically generated when you send the request. Learn more about [Bearer Token](#)

Token

eyJhbGciOiJIUzI1NiIsInR5cCI6IkpXLTJ5In0.

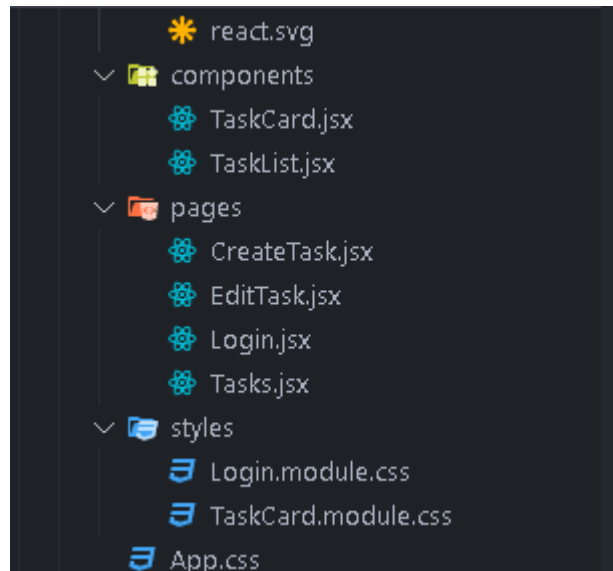
Body • Cookies • Headers (9) • Test Results (1/1) • ⌚

{ } JSON • ▶ Preview • 🔄 Visualize • ▾

```
1 {
2   "message": "Success",
3   "tasks": [
4     {
5       "id": 3,
6       "title": "Estudiar Front",
7       "description": "Revisar hooks",
8       "status": "in_progress",
9       "deadline": "2025-04-15T00:00:00.000Z",
10      "user_id": 1,
11      "createdAt": "2025-04-13T12:57:56.176Z",
12      "updatedAt": "2025-04-13T17:58:20.965Z"
13    }
14  ]
15 }
```

# FRONTEND

- componentes reutilizables (por ejemplo, TaskCard, TaskList, etc.)




## React Router para navegación

```
import { Routes, Route, Navigate } from 'react-router-dom';
import Login from './pages/Login';
import Tasks from './pages/Tasks';
import CreateTask from './pages/CreateTask';
import EditTask from './pages/EditTask';

function App() {
  const isAuthenticated = !!localStorage.getItem('token');

  return (
    <Routes>
      <Route path="/login" element={<Login />} />
      <Route path="/tasks" element={isAuthenticated ? <Tasks /> : <Navigate to="/login" />} />
      <Route path="/tasks/new" element={isAuthenticated ? <CreateTask /> : <Navigate to="/login" />} />
      <Route path="*" element={<Navigate to="/tasks" />} />
      <Route path="/tasks/new" element={isAuthenticated ? <CreateTask /> : <Navigate to="/login" />}/>
      <Route path="/tasks/:id/edit" element={isAuthenticated ? <EditTask /> : <Navigate to="/login" />} />
    </Routes>
  );
}
```

## Consumo de la API REST con Axios.

```
ntend > src > api >  api.js > ...  
1 import axios from 'axios';  
2  
3 const api = axios.create({  
4   baseUrl: 'http://localhost:3000/api',  
5   headers: {  
6     'Content-Type': 'application/json',  
7   },  
8 });  
9  
10 api.interceptors.request.use((config) => {  
11   const token = localStorage.getItem('token');  
12   if (token) {  
13     config.headers.Authorization = `Bearer ${token}`;  
14   }  
15   return config;  
16 });  
17  
18 export default api;  
19
```



### Iniciar sesión

Entrar

### Mis tareas


+ Nueva tarea

#### Estudiar bases de datos

Revisar hooks

**Estado:** pending

**Fecha límite:** 4/14/2025

 Editar

## Nueva tarea

Título

Descripción

mm/dd/yyyy



Pendiente



Crear tarea

## Editar tarea

Estudiar bases de datos

Revisar hooks

04/15/2025



Pendiente



Guardar cambios

# REPOSITORIO

- [https://github.com/Renevc14/M1\\_Proyecto\\_Final](https://github.com/Renevc14/M1_Proyecto_Final)