

UNIVERSIDAD
CATÓLICA
BOLIVIANA

Departamento de Postgrado
Maestría FullStack Development

EJERCICIO GUIADO: PROYECTO FINAL

Módulo 1: Fundamentos del Desarrollo FullStack

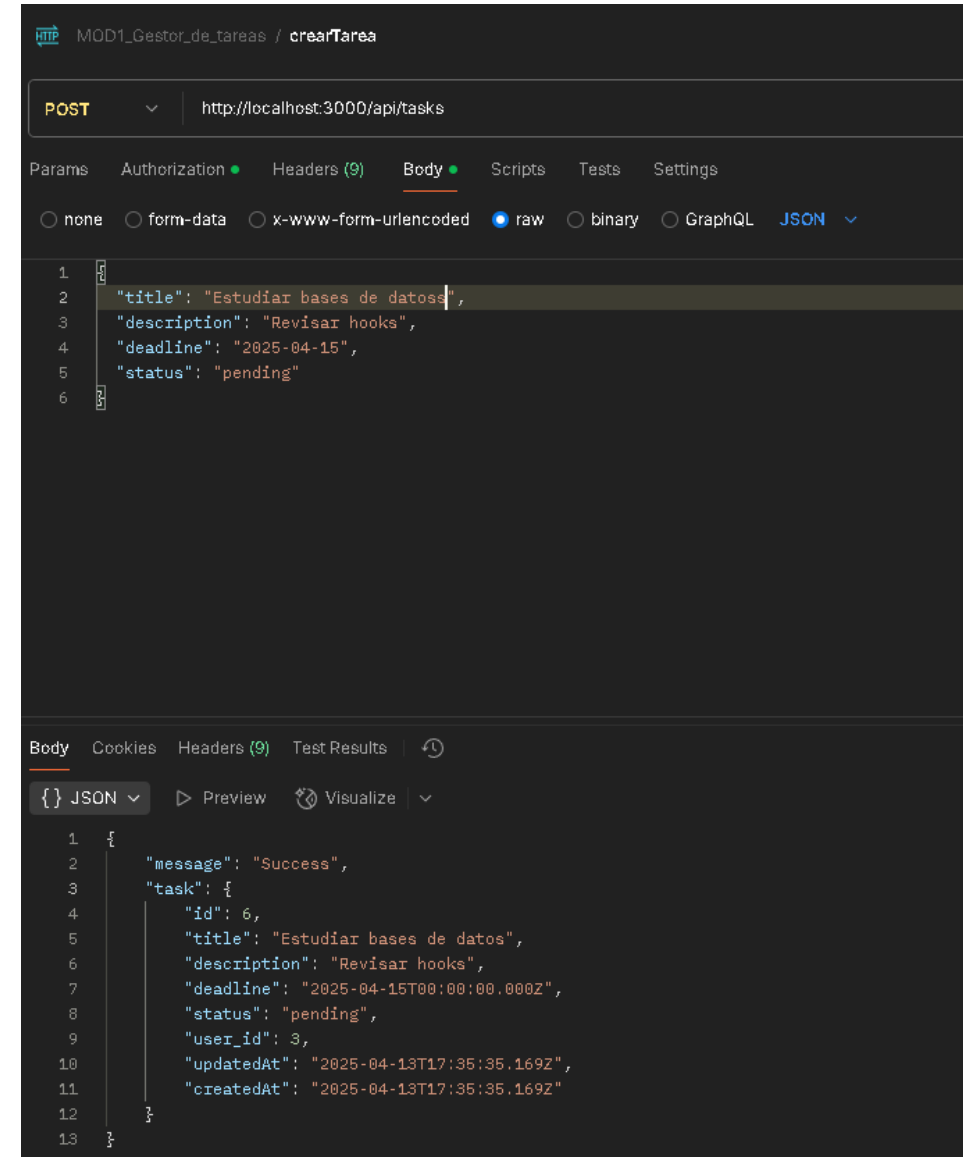
Docente: MS. Sc. Lic. Katia Luz Mansilla Arce

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



PUT

▼

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

ParamsAuthorization●Headers (9)Body●Scripts●Tests●Settings

☐ none

☐ form-data

☐ x-www-form-urlencoded

☒ raw

☐ binary

☐ GraphQL

JSON

▼

1

{

2

"status": "in_progress"

3

}

BodyCookiesHeaders (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

}

HTTPMOD1_Gestor_de_tareas / actualizarTask

PUT

▼

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

ParamsAuthorization●Headers (9)Body●Scripts●Tests●Settings

☐ none

☐ form-data

☐ x-www-form-urlencoded

☒ raw

☐ binary

☐ GraphQL

JSON

▼

1

{

2

"status": "complete"

3

}

BodyCookiesHeaders (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)



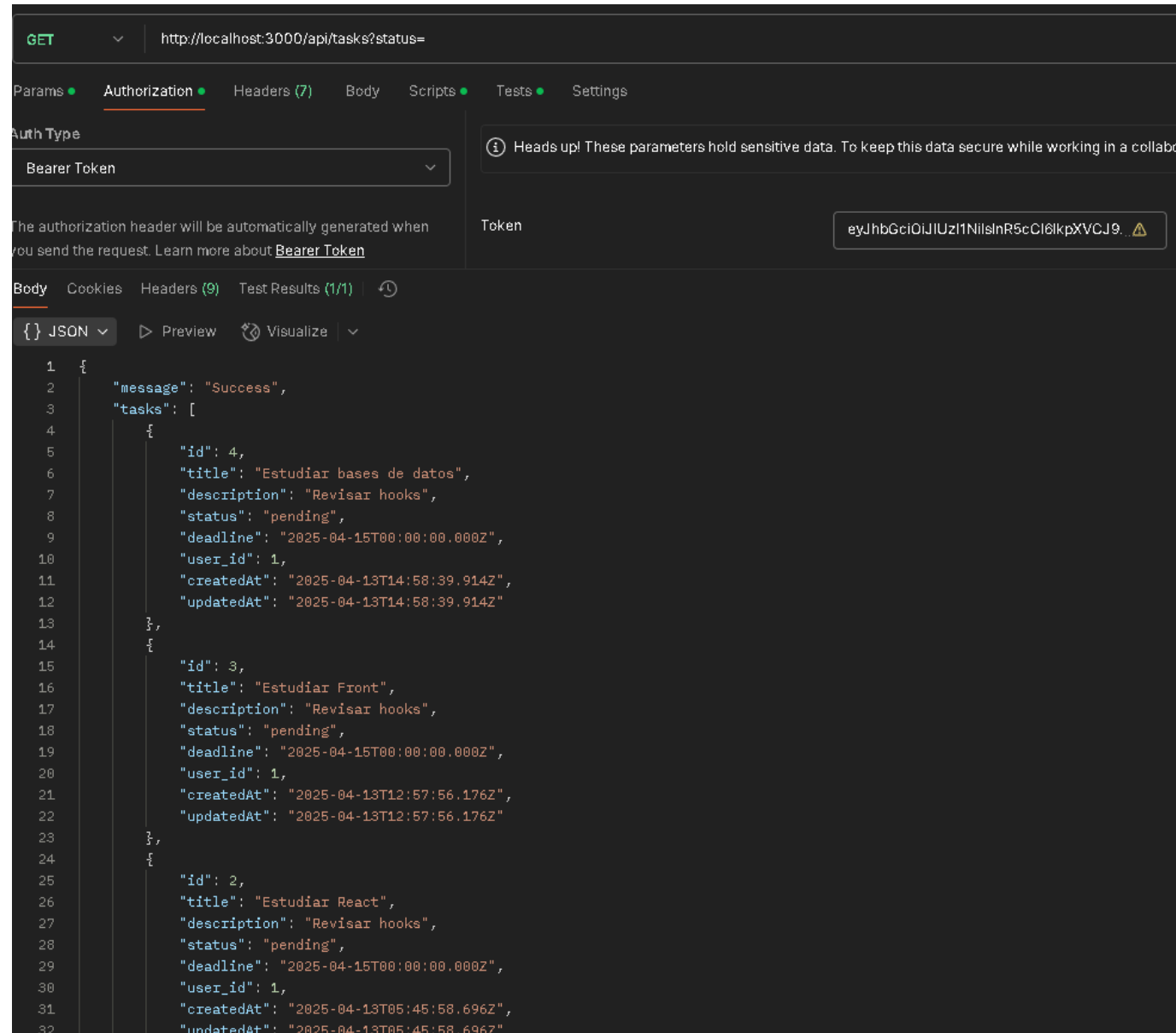
{ } JSON ▾

▶ 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) • ↻

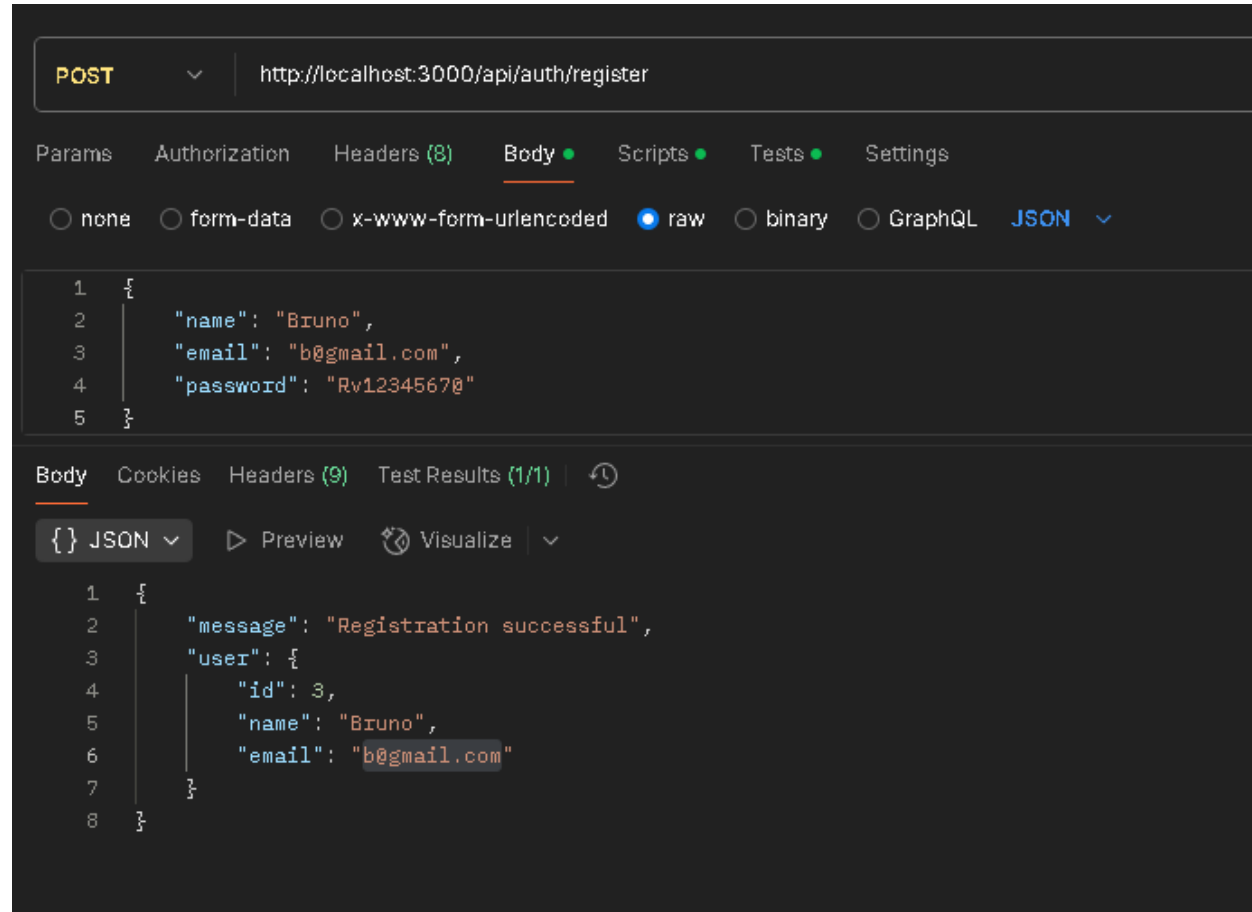
{ } JSON • Preview • Visualize •

```
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"
33    }
34  ]
35 }
```

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

The screenshot displays a REST client interface with a dark theme. The top section shows the request configuration with 'JSON' selected. The request body is a JSON object containing email and password. The bottom section shows the response, which is a 200 OK status with a success message and a JWT token.

Request:

```
1 {
2   "email": "renvilela@gmail.com",
3   "password": "Rv12345678"
4 }
```

Response:

```
1 {
2   "message": "Success",
3   "token": "eyJhbGciOiJIUzI1NiIsInR5cCI6IkpXVCJ9.eyJpZCI6MSwiYmFtZSI6ImVmlsZWxhIiwiaWF0IjoxNzQ0NTY1NzQ5LCJleHAiOjE3NDQ2NTIwNDl9.TYgtWvvsTkIND1zTxGqBMunJJKzAbFPYctAqcBAhi94"
4 }
```

Form Preview:

Iniciar sesión

renvilela@gmail.com

.....

Entrar

Status Bar: 200 OK • 192 ms • 499 B • Save Response

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	name	email	password
[PK] integer	character varying (255)	character varying (255)	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

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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 Bearer Token.

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

Token

eyJhbGciOiJIUzI1NiIsInR5cCI6IkpXLTJ5In0:

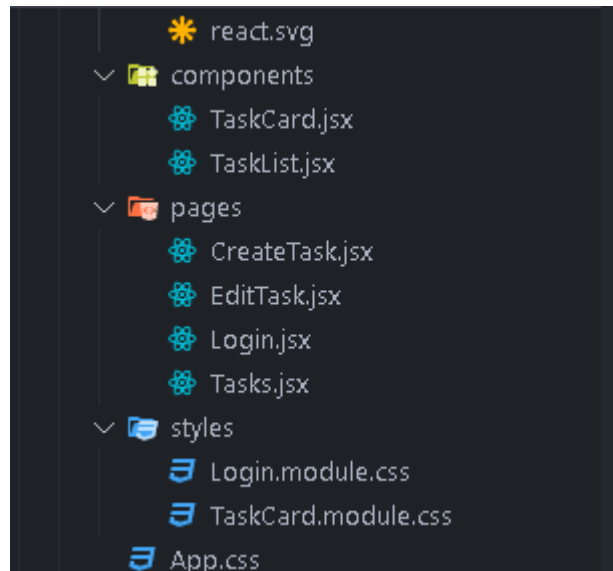
Body • Cookies • Headers (9) • Test Results (1/1) • ⌚

{ } 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
```


REPOSITORIO

- https://github.com/Renevc14/M1_Proyecto_Final