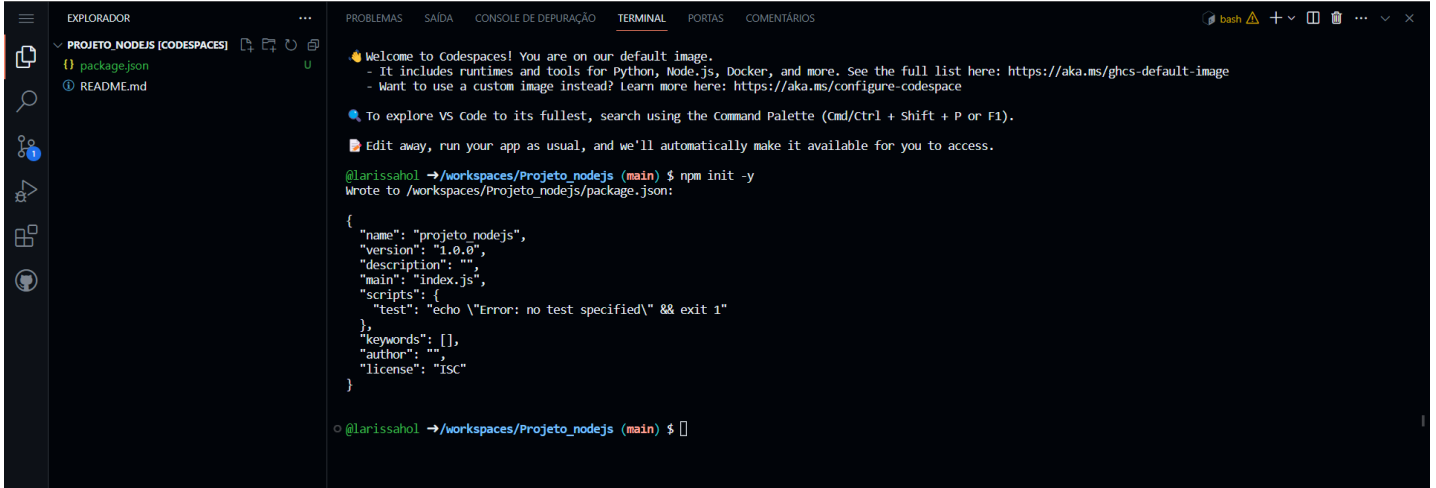


Banco de Dados - Avaliação 10

Aluna: Larissa dos Santos Holanda

O comando “npm init -y” cria o package.json:



The screenshot shows the VS Code interface with the Explorer on the left showing 'PROJETO_NODEJS [CODESPACES]' containing 'package.json' and 'README.md'. The Terminal on the right shows the following output:

```
Welcome to Codespaces! You are on our default image.
- It includes runtimes and tools for Python, Node.js, Docker, and more. See the full list here: https://aka.ms/ghcs-default-image
- Want to use a custom image instead? Learn more here: https://aka.ms/configure-codespace

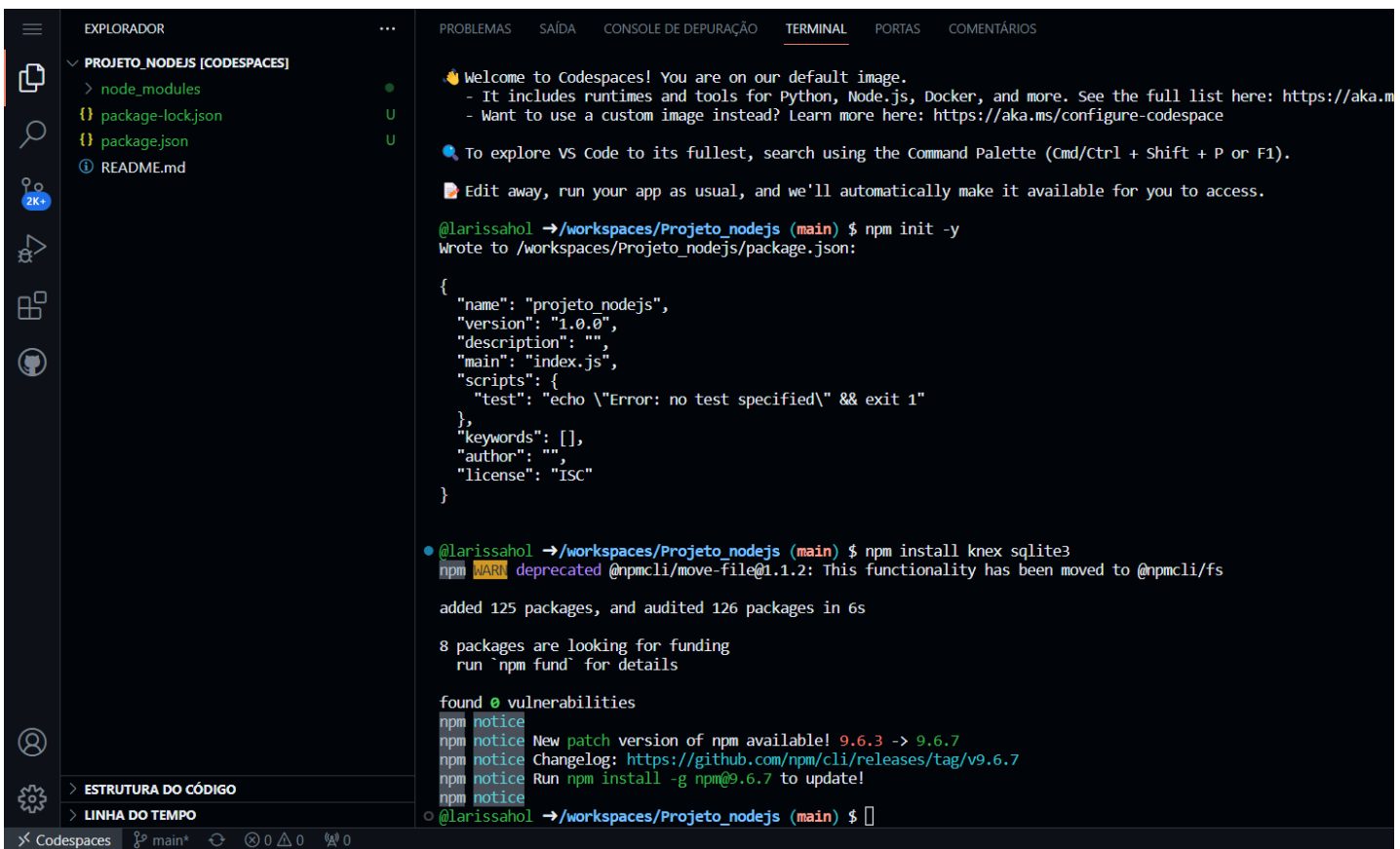
To explore VS Code to its fullest, search using the Command Palette (cmd/ctrl + Shift + P or F1).

Edit away, run your app as usual, and we'll automatically make it available for you to access.

@larissahol →/workspaces/Projeto_nodejs (main) $ npm init -y
Wrote to /workspaces/Projeto_nodejs/package.json:

{
  "name": "projeto_nodejs",
  "version": "1.0.0",
  "description": "",
  "main": "index.js",
  "scripts": {
    "test": "echo \"Error: no test specified\" && exit 1"
  },
  "keywords": [],
  "author": "",
  "license": "ISC"
}
```

O comando “npm install knex sqlite3” instala os pacotes knex e sqlite3 e adiciona o node_modules e o package-lock.json:



The screenshot shows the VS Code interface with the Explorer on the left showing 'PROJETO_NODEJS [CODESPACES]' containing 'node_modules', 'package-lock.json', 'package.json', and 'README.md'. The Terminal on the right shows the following output:

```
Welcome to Codespaces! You are on our default image.
- It includes runtimes and tools for Python, Node.js, Docker, and more. See the full list here: https://aka.ms/ghcs-default-image
- Want to use a custom image instead? Learn more here: https://aka.ms/configure-codespace

To explore VS Code to its fullest, search using the Command Palette (cmd/ctrl + Shift + P or F1).

Edit away, run your app as usual, and we'll automatically make it available for you to access.

@larissahol →/workspaces/Projeto_nodejs (main) $ npm init -y
Wrote to /workspaces/Projeto_nodejs/package.json:

{
  "name": "projeto_nodejs",
  "version": "1.0.0",
  "description": "",
  "main": "index.js",
  "scripts": {
    "test": "echo \"Error: no test specified\" && exit 1"
  },
  "keywords": [],
  "author": "",
  "license": "ISC"
}

@larissahol →/workspaces/Projeto_nodejs (main) $ npm install knex sqlite3
npm WARN deprecated @npmcli/move-file@1.1.2: This functionality has been moved to @npmcli/fs

added 125 packages, and audited 126 packages in 6s

8 packages are looking for funding
  run `npm fund` for details

found 0 vulnerabilities
npm notice
npm notice New patch version of npm available! 9.6.3 -> 9.6.7
npm notice Changelog: https://github.com/npm/cli/releases/tag/v9.6.7
npm notice Run `npm install -g npm@9.6.7` to update!
@larissahol →/workspaces/Projeto_nodejs (main) $
```

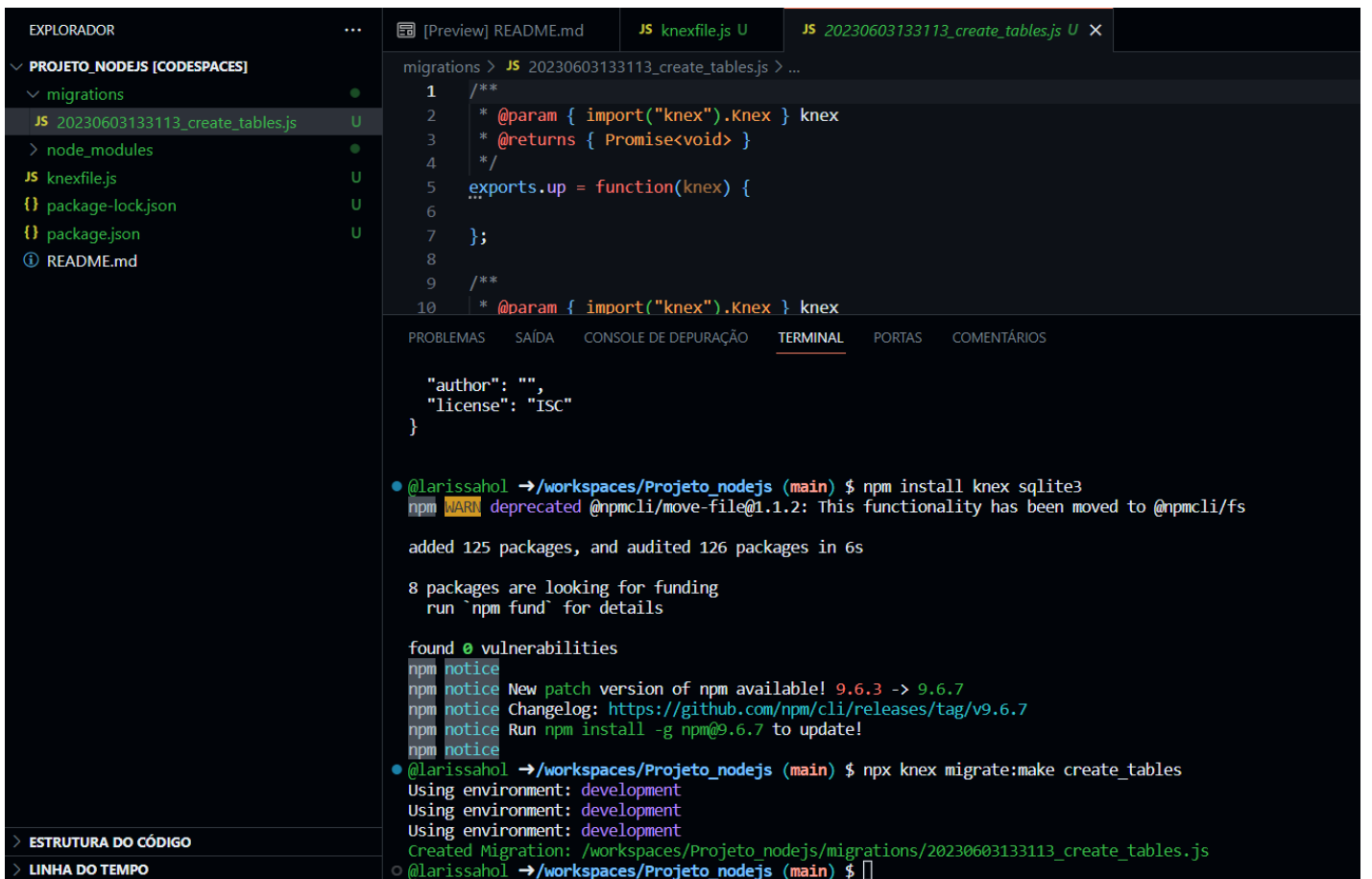
Criação do arquivo knexfile.js:



The screenshot shows the VS Code interface with the Explorer on the left and the Editor on the right. The Explorer shows a project named 'PROJETO_NODEJS [CODESPACES]' with a 'node_modules' folder and files 'knexfile.js', 'package-lock.json', 'package.json', and 'README.md'. The Editor shows the 'knexfile.js' file with the following code:

```
1 module.exports = {
2   development: {
3     client: 'sqlite3',
4     connection: {
5       filename: './SCA.db'
6     },
7     useNullAsDefault: true
8   }
9 };
```

O comando “npx knex migrate:make create_tables” cria o arquivo com timestamp das migrations:



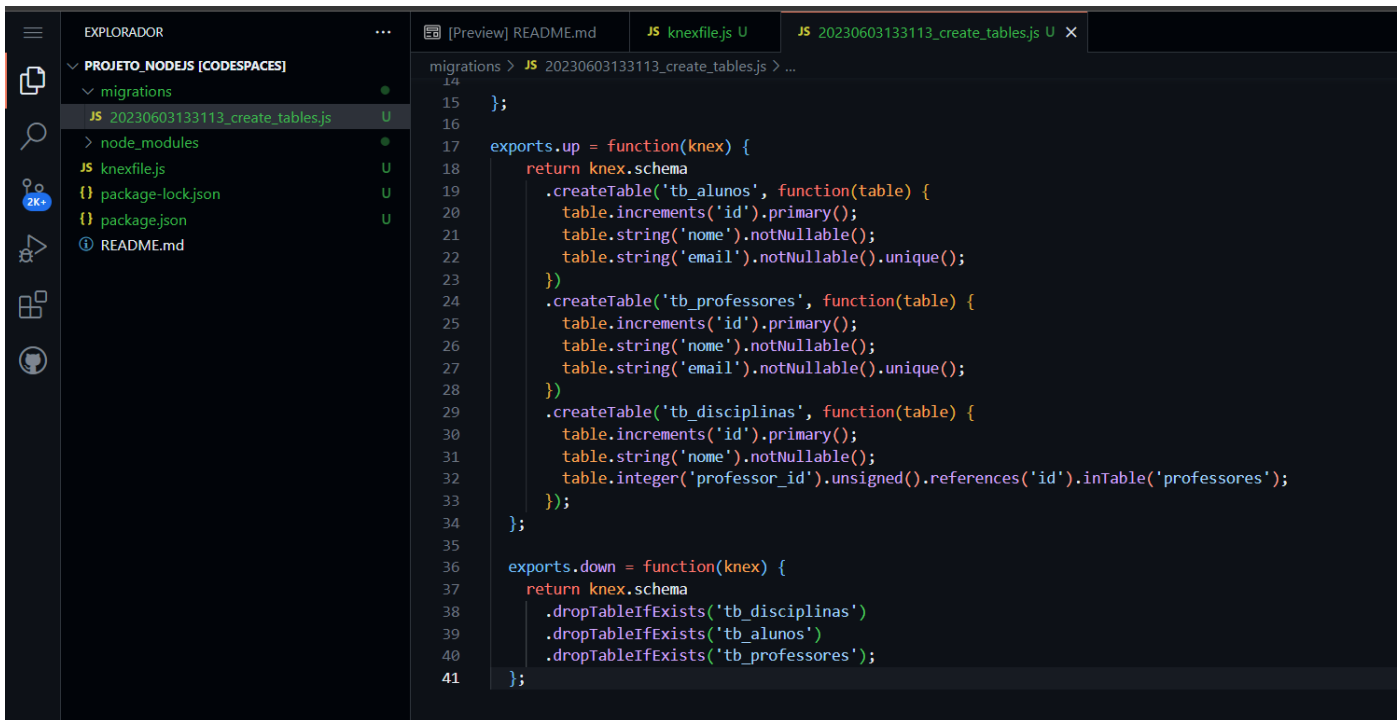
The screenshot shows the VS Code interface with the Explorer on the left and the Editor on the right. The Explorer shows a project named 'PROJETO_NODEJS [CODESPACES]' with a 'migrations' folder and files '20230603133113_create_tables.js', 'node_modules', 'knexfile.js', 'package-lock.json', 'package.json', and 'README.md'. The Editor shows the '20230603133113_create_tables.js' file with the following code:

```
1 /**
2  * @param { import("knex").Knex } knex
3  * @returns { Promise<void> }
4  */
5 exports.up = function(knex) {
6
7 };
8
9 /**
10  * @param { import("knex").Knex } knex
```

The Terminal shows the output of the command 'npx knex migrate:make create_tables'.

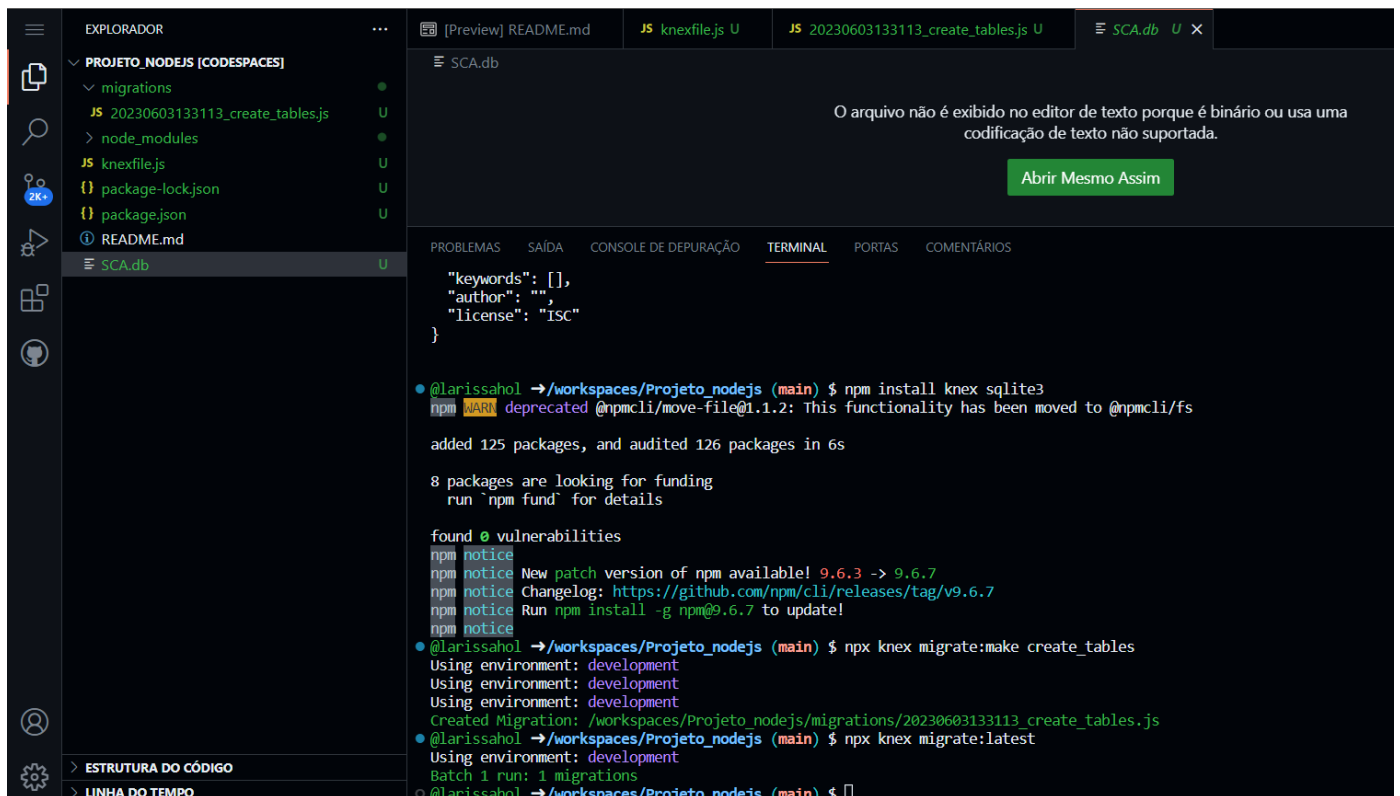
```
npm WARN deprecated @npmcli/move-file@1.1.2: This functionality has been moved to @npmcli/fs
added 125 packages, and audited 126 packages in 6s
8 packages are looking for funding
run `npm fund` for details
found 0 vulnerabilities
npm notice New patch version of npm available! 9.6.3 -> 9.6.7
npm notice Changelog: https://github.com/npm/cli/releases/tag/v9.6.7
npm notice Run npm install -g npm@9.6.7 to update!
npm notice
@larissahol →/workspaces/Projeto_nodejs (main) $ npx knex migrate:make create_tables
Using environment: development
Using environment: development
Using environment: development
Created Migration: /workspaces/Projeto_nodejs/migrations/20230603133113_create_tables.js
@larissahol →/workspaces/Projeto_nodejs (main) $
```

Código adicionado ao arquivo:



```
migrations > JS 20230603133113_create_tables.js > ...
14
15 };
16
17 exports.up = function(knex) {
18   return knex.schema
19     .createTable('tb_alunos', function(table) {
20       table.increments('id').primary();
21       table.string('nome').nullable();
22       table.string('email').nullable().unique();
23     })
24     .createTable('tb_professores', function(table) {
25       table.increments('id').primary();
26       table.string('nome').nullable();
27       table.string('email').nullable().unique();
28     })
29     .createTable('tb_disciplinas', function(table) {
30       table.increments('id').primary();
31       table.string('nome').nullable();
32       table.integer('professor_id').unsigned().references('id').inTable('professores');
33     });
34 };
35
36 exports.down = function(knex) {
37   return knex.schema
38     .dropTableIfExists('tb_disciplinas')
39     .dropTableIfExists('tb_alunos')
40     .dropTableIfExists('tb_professores');
41 };
```

O comando “`npx knex migrate:latest`” executa as migrações mais recentes e abre o SCA.db (que é o banco de dados em si):



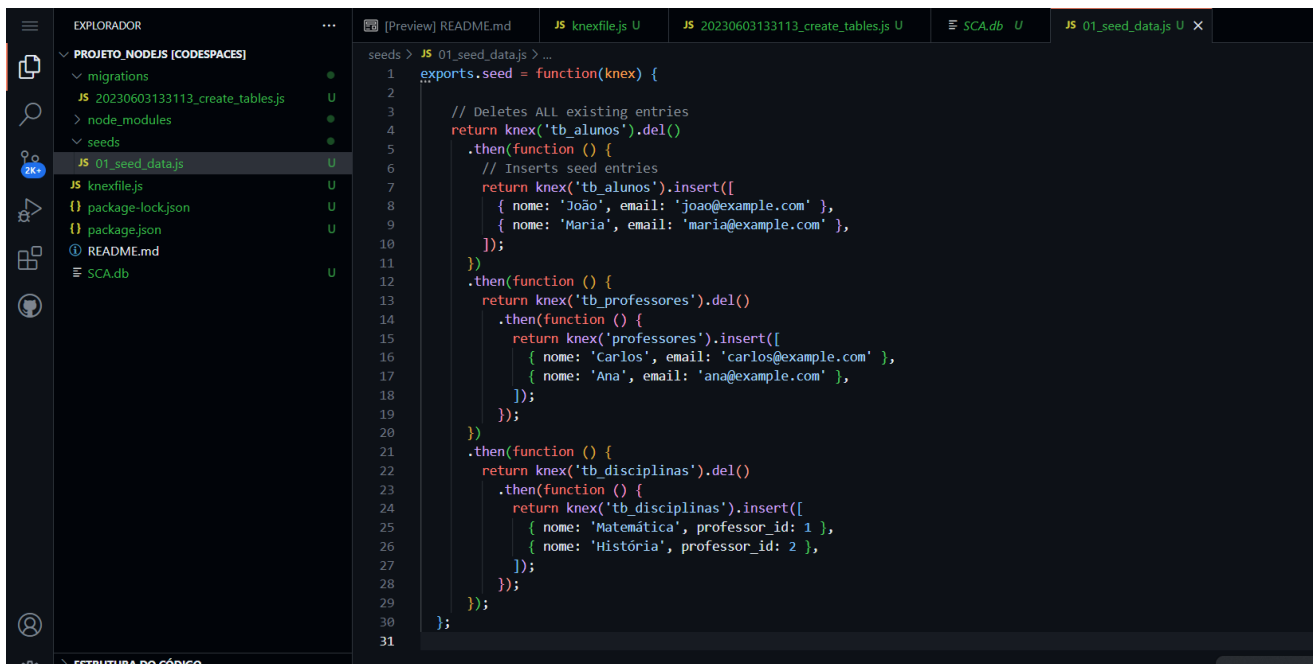
```
EXPLORADOR
  PROJETO_NODEJS [CODESPACES]
    migrations
      JS 20230603133113_create_tables.js U
    node_modules
      JS knexfile.js U
      {} package-lock.json U
      {} package.json U
      {} README.md U
    SCA.db U

[Preview] README.md JS knexfile.js U JS 20230603133113_create_tables.js U SCA.db U X
SCA.db
O arquivo não é exibido no editor de texto porque é binário ou usa uma
codificação de texto não suportada.
Abrir Mesmo Assim

PROBLEMAS SAÍDA CONSOLE DE DEPURACÃO TERMINAL PORTAS COMENTÁRIOS
"keywords": [],
"author": "",
"license": "ISC"
}

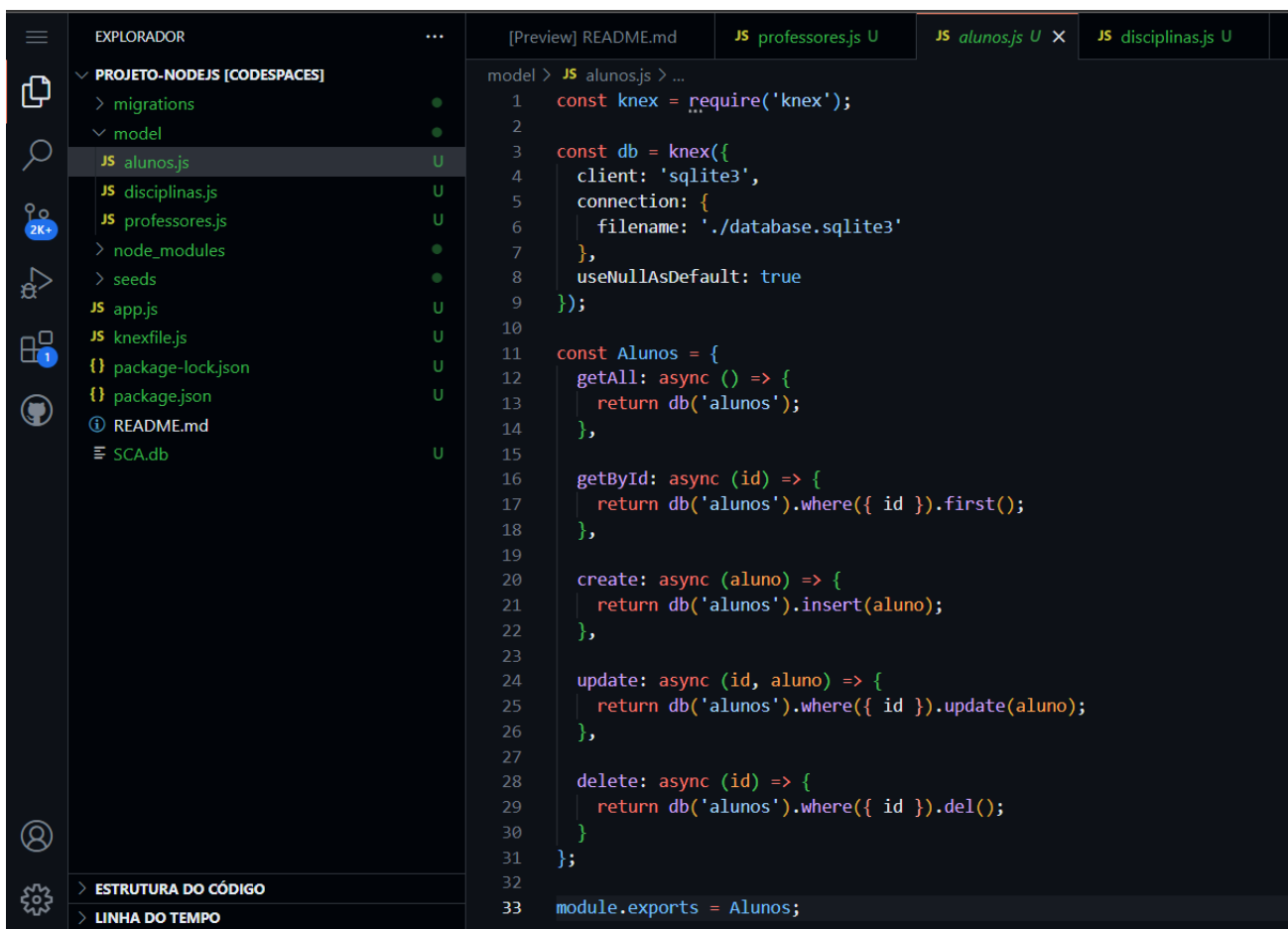
@larissahol →/workspaces/Projeto_nodejs (main) $ npm install knex sqlite3
npm WARN deprecated @npmcli/move-file@1.1.2: This functionality has been moved to @npmcli/fs
added 125 packages, and audited 126 packages in 6s
8 packages are looking for funding
run `npm fund` for details
found 0 vulnerabilities
npm notice New patch version of npm available! 9.6.3 -> 9.6.7
npm notice Changelog: https://github.com/npm/cli/releases/tag/v9.6.7
npm notice Run npm install -g npm@9.6.7 to update!
npm notice
@larissahol →/workspaces/Projeto_nodejs (main) $ npx knex migrate:make create_tables
Using environment: development
Using environment: development
Using environment: development
Created Migration: /workspaces/Projeto_nodejs/migrations/20230603133113_create_tables.js
@larissahol →/workspaces/Projeto_nodejs (main) $ npx knex migrate:latest
Using environment: development
Batch 1 run: 1 migrations
@larissahol →/workspaces/Projeto_nodejs (main) $
```

Criação do diretório seeds e do arquivo 01_seed_data.js:



```
seeds > JS 01_seed_data.js > ...
1  exports.seed = function(knex) {
2
3      // Deletes ALL existing entries
4      return knex('tb_alunos').del()
5      .then(function () {
6          // Inserts seed entries
7          return knex('tb_alunos').insert([
8              { nome: 'João', email: 'joao@example.com' },
9              { nome: 'Maria', email: 'maria@example.com' },
10             ]);
11         })
12         .then(function () {
13             return knex('tb_professores').del()
14             .then(function () {
15                 return knex('professores').insert([
16                     { nome: 'Carlos', email: 'carlos@example.com' },
17                     { nome: 'Ana', email: 'ana@example.com' },
18                 ]);
19             });
20         })
21         .then(function () {
22             return knex('tb_disciplinas').del()
23             .then(function () {
24                 return knex('tb_disciplinas').insert([
25                     { nome: 'Matemática', professor_id: 1 },
26                     { nome: 'História', professor_id: 2 },
27                 ]);
28             });
29         });
30     });
31 }
```

Criação da pasta model com os arquivos alunos.js, disciplinas.js e professores.js com CRUD:



```
[Preview] README.md JS professores.js U JS alunos.js U X JS disciplinas.js U
model > JS alunos.js > ...
1  const knex = require('knex');
2
3  const db = knex({
4      client: 'sqlite3',
5      connection: {
6          filename: './database.sqlite3'
7      },
8      useNullAsDefault: true
9  });
10
11  const Alunos = {
12      getAll: async () => {
13          return db('alunos');
14      },
15
16      getById: async (id) => {
17          return db('alunos').where({ id }).first();
18      },
19
20      create: async (aluno) => {
21          return db('alunos').insert(aluno);
22      },
23
24      update: async (id, aluno) => {
25          return db('alunos').where({ id }).update(aluno);
26      },
27
28      delete: async (id) => {
29          return db('alunos').where({ id }).del();
30      }
31  };
32
33  module.exports = Alunos;
```

EXPLORADOR

PROJETO-NODEJS [CODESPACES]

migrations

model

JS alunos.js

JS disciplinas.js

JS professores.js

node_modules

seeds

app.js

knexfile.js

package-lock.json

package.json

README.md

SCA.db

[Preview] README.md

JS professores.js U

JS alunos.js U

JS disciplinas.js U X

model > JS disciplinas.js > Disciplinas

```
1 const db = knex({
2   client: 'sqlite3',
3   connection: {
4     filename: './database.sqlite3'
5   },
6   useNullAsDefault: true
7 });
8
9 const Disciplinas = {
10   getAll: async () => {
11     return db('disciplinas');
12   },
13
14   getById: async (id) => {
15     return db('disciplinas').where({ id }).first();
16   },
17
18   create: async (disciplina) => {
19     return db('disciplinas').insert(disciplina);
20   },
21
22   update: async (id, disciplina) => {
23     return db('disciplinas').where({ id }).update(disciplina);
24   },
25
26   delete: async (id) => {
27     return db('disciplinas').where({ id }).del();
28   }
29 };
30
31 module.exports = Disciplinas;
```

EXPLORADOR

PROJETO-NODEJS [CODESPACES]

migrations

model

JS alunos.js

JS disciplinas.js

JS professores.js

node_modules

seeds

app.js

knexfile.js

package-lock.json

package.json

README.md

SCA.db

[Preview] README.md

JS professores.js U X

JS alunos.js U

JS disciplinas.js U

model > JS professores.js > Professores

```
1 const knex = require('knex');
2
3 const db = knex({
4   client: 'sqlite3',
5   connection: {
6     filename: './database.sqlite3'
7   },
8   useNullAsDefault: true
9 });
10
11 const Professores = {
12   getAll: async () => {
13     return db('professores');
14   },
15
16   getById: async (id) => {
17     return db('professores').where({ id }).first();
18   },
19
20   create: async (professor) => {
21     return db('professores').insert(professor);
22   },
23
24   update: async (id, professor) => {
25     return db('professores').where({ id }).update(professor);
26   },
27
28   delete: async (id) => {
29     return db('professores').where({ id }).del();
30   }
31 };
32
33 module.exports = Professores;
```

Criação do arquivo principal app.js:

The image displays two screenshots of a code editor interface, likely VS Code, showing the development of a Node.js application. The left sidebar shows the file explorer with a project structure including migrations, model, alunos.js, disciplinas.js, professores.js, node_modules, seeds, app.js, knexfile.js, package-lock.json, package.json, README.md, and SCA.db. The main editor area shows the code for app.js.

First Screenshot (Top): The code defines constants for Alunos, Professores, and Disciplinas, and implements an async function run() that performs CRUD operations using the Knex.js database library. The code is as follows:

```
1 const Alunos = require('./model/alunos');
2 const Professores = require('./model/professores');
3 const Disciplinas = require('./model/disciplinas');
4 async function run() {
5   // Exemplo de uso dos métodos CRUD
6   try {
7     // Listar todos os alunos
8     const allAlunos = await Alunos.getAll();
9     console.log('Todos os alunos:', allAlunos);
10
11    // Criar um novo aluno
12    const newAluno = { nome: 'Pedro', email: 'pedro@example.com' };
13    const createdAluno = await Alunos.create(newAluno);
14    console.log('Aluno criado:', createdAluno);
15
16    // Atualizar um aluno existente
17    const updatedAluno = { nome: 'Pedro Silva', email: 'pedro.silva@example.com' };
18    const idToUpdate = 1;
19    const result = await Alunos.update(idToUpdate, updatedAluno);
20    console.log('Aluno atualizado:', result);
21
22    // Deletar um aluno
23    const idToDelete = 2;
24    const deleteResult = await Alunos.delete(idToDelete);
25    console.log('Aluno deletado:', deleteResult);
26
27    // Listar todos os professores
28    const allProfessores = await Professores.getAll();
29    console.log('Todos os professores:', allProfessores);
30
31    // Listar todas as disciplinas
32    const allDisciplinas = await Disciplinas.getAll();
33    console.log('Todas as disciplinas:', allDisciplinas);
34  }
35}
```

Second Screenshot (Bottom): The code is updated to include error handling and a call to the run() function. The code is as follows:

```
15 console.log('Aluno criado:', createdAluno);
16
17 // Atualizar um aluno existente
18 const updatedAluno = { nome: 'Pedro Silva', email: 'pedro.silva@example.com' };
19 const idToUpdate = 1;
20 const result = await Alunos.update(idToUpdate, updatedAluno);
21 console.log('Aluno atualizado:', result);
22
23 // Deletar um aluno
24 const idToDelete = 2;
25 const deleteResult = await Alunos.delete(idToDelete);
26 console.log('Aluno deletado:', deleteResult);
27
28 // Listar todos os professores
29 const allProfessores = await Professores.getAll();
30 console.log('Todos os professores:', allProfessores);
31
32 // Listar todas as disciplinas
33 const allDisciplinas = await Disciplinas.getAll();
34 console.log('Todas as disciplinas:', allDisciplinas);
35 } catch (error) {
36   console.error('Ocorreu um erro:', error);
37 }
38
39 run();
40
```