

Atividade Prática 4.2 - Uso do Eloquent para Criação e Manipulação de Relacionamentos no Sistema de Biblioteca

Passo 1: Consultas Básicas com Eloquent

1.1 Listar Todos os Usuários

```
joykell@JoyceKelle: ~/laravel- x + v
joykell@JoyceKelle:~/laravel-test/example-app$ php artisan tinker
Psy Shell v0.12.4 (PHP 8.3.14 - cli) by Justin Hileman
> User::all();
[!] Aliasing 'User' to 'App\Models\User' for this Tinker session.
= Illuminate\Database\Eloquent\Collection {#6161
  all: [
    App\Models\User {#6162
      id: 1,
      name: "Chasity Lind",
      email: "carlie04@example.net",
      email_verified_at: "2024-12-04 01:30:02",
      #password: "$2y$12$sUIbnx7UwJ06nQEzgAma.0ZHkFH7fUmos24cL6qZb6pen7YFXNlh2",
      #remember_token: "0MFiucY7qA",
      created_at: "2024-12-04 01:30:03",
      updated_at: "2024-12-04 01:30:03",
    },
    App\Models\User {#6163
      id: 2,
      name: "Miss Berniece Mraz PhD",
      email: "ike.murray@example.net",
      email_verified_at: "2024-12-04 01:30:03",
      #password: "$2y$12$sUIbnx7UwJ06nQEzgAma.0ZHkFH7fUmos24cL6qZb6pen7YFXNlh2",
      #remember_token: "f8UmZ70yq3",
      created_at: "2024-12-04 01:30:03",
    },
  ],
}
```

1.2 Trazer um Livro Específico pelo ID

```
joykell@JoyceKelle: ~/laravel- x + v
> Book::find(14);
= App\Models\Book {#5181
  id: 14,
  title: "Recusandae quas eos non inventore aperiam placeat.",
  author_id: 2,
  category_id: 2,
  publisher_id: 2,
  created_at: "2024-12-04 01:49:15",
  updated_at: "2024-12-04 01:49:15",
  published_year: 2015,
}
> |
```

Passo 2: Contar Quantos Livros Cada Publisher Possui

```
joykell@JoyceKelle: ~/laravel- x + v
}
> Publisher::withCount('books')->take(20)->get();
[!] Aliasing 'Publisher' to 'App\Models\Publisher' for this Tinker session.
= Illuminate\Database\Eloquent\Collection {#8117
  all: [
    App\Models\Publisher {#8116
      id: 1,
      name: "Bogisich, Beier and Streich",
      address: ""
        622 Josefina Ford Suite 700\n
        South Watson, CO 21481
        "",
      created_at: "2024-12-04 01:49:15",
      updated_at: "2024-12-04 01:49:15",
      books_count: 10,
    },
    App\Models\Publisher {#8115
      id: 2,
      name: "Ferry-Hill",
      address: ""
        33982 Dee Parks\n
        Huelsland, DE 96294
        "",
      created_at: "2024-12-04 01:49:15",
      updated_at: "2024-12-04 01:49:15",
      books_count: 10,
    },
    App\Models\Publisher {#8114
      id: 3,
      name: "Daniel-Homenick",
      address: ""
        3798 Stanton Landing\n
        Rutherfordhaven, CA 25818-5564
```

Passo 3: Usar Funções de Agregação para Analisar os Anos de Publicação dos Livros

3.1 Calcular a Média dos Anos de Publicação dos Livros

```
> $mediaAno = Book::avg('published_year');
= "1996.9700"
> |
```

3.2 Calcular o Somatório dos Anos de Publicação dos Livros

```
> $somaAno = Book::sum('published_year');
= "1996970"
> |
```

3.3 Encontrar o Livro Mais Antigo

```
> $anoMaisAntigo = Book::min('published_year');
= 1970

> |
```

3.4 Encontrar o Livro Mais Recente

```
= 1970

> $anoMaisRecente = Book::max('published_year');
= 2024

> |
```

Passo 4: Salvar e Imprimir a Contagem de Livros por Categoria

```
> $categorias = Category::withCount('books')->get();
[!] Aliasing 'Category' to 'App\Models\Category' for this Tinker session.
= Illuminate\Database\Eloquent\Collection {#8115
  all: [
    App\Models\Category {#8139
      id: 1,
      name: "Ficção",
      created_at: "2024-12-04 01:49:14",
      updated_at: "2024-12-04 01:49:14",
      books_count: 150,
    },
    App\Models\Category {#8140
      id: 2,
      name: "Não-ficção",
      created_at: "2024-12-04 01:49:14",
      updated_at: "2024-12-04 01:49:14",
      books_count: 90,
    },
    App\Models\Category {#8138
      id: 3,
      name: "Fantasia",
      created_at: "2024-12-04 01:49:14",
      updated_at: "2024-12-04 01:49:14",
      books_count: 110,
    },
    App\Models\Category {#8136
      id: 4,
      name: "Mistério",
      created_at: "2024-12-04 01:49:14",
      updated_at: "2024-12-04 01:49:14",
      books_count: 120,
    },
  ],
}
```

Passo 5: Entender o Problema do N+1, Eager Loading e Lazy Loading

```
> foreach ($categorias as $categoria) {
{$categoria->name}: {$categoria->books_count} livros\n";
}.      echo "{$categoria->name}: {$categoria->books_count} livros\n";
. }
Ficção: 150 livros
Não-ficção: 90 livros
Fantasia: 110 livros
Ciência: 120 livros
Biografia: 110 livros
História: 70 livros
Tecnologia: 130 livros
Arte: 90 livros
Culinária: 50 livros
Viagem: 80 livros
> |
```

Passo 6: Criar um Novo Livro com Todos os Seus Relacionamentos

```
> $author = Author::create([
name' => 'John Doe',
'birth_date' => '1975-08-15'
]);.      'name' => 'John Doe',
.      'birth_date' => '1975-08-15'
. ]);
[!] Aliasing 'Author' to 'App\Models\Author' for this Tinker session.
= App\Models\Author {#5238
  name: "John Doe",
  birth_date: "1975-08-15",
  updated_at: "2024-12-04 02:17:02",
  created_at: "2024-12-04 02:17:02",
  id: 1101,
}
```

```
> $category = Category::create([
'name' => 'Fi.      'name' => 'Fiction'
. ]);
[!] Aliasing 'Category' to 'App\Models\Category' for this Tinker session.
= App\Models\Category {#6182
  name: "Fiction",
  updated_at: "2024-12-04 02:17:35",
  created_at: "2024-12-04 02:17:35",
  id: 11,
}
> |
```

```
> $publisher = Publisher::create([
Best Publisher',
  'address' => '123 Publisher Lane'
]);.      'name' => 'Best Publisher',
.      'address' => '123 Publisher Lane'
.  ]);
[!] Aliasing 'Publisher' to 'App\Models\Publisher' for this Tinker session.
= App\Models\Publisher {#6199
  name: "Best Publisher",
  address: "123 Publisher Lane",
  updated_at: "2024-12-04 02:18:54",
  created_at: "2024-12-04 02:18:54",
  id: 101,
}
> |
```

```
> $book = Book::create([
$author->id,
  'category_id' => .      'title' => 'The Great Adventure',

  'publisher_id' => $publishe.      'author_id' => $author->id,
r->id,
  'published_year' => 2024
]);.      'category_id' => $category->id,
.      'publisher_id' => $publisher->id,
.      'published_year' => 2024
.  ]);
[!] Aliasing 'Book' to 'App\Models\Book' for this Tinker session.
= App\Models\Book {#6390
  title: "The Great Adventure",
  author_id: 1101,
  category_id: 11,
  publisher_id: 101,
  published_year: 2024,
  updated_at: "2024-12-04 02:19:14",
  created_at: "2024-12-04 02:19:14",
  id: 1001,
}
> |
```

```
> echo "Livro: {$book->title}\n";
Livro: The Great Adventure
> echo "Autor: {$book->author->name}\n";
Autor: John Doe
> echo "Categoria: {$book->category->name}\n";
Categoria: Fiction
> echo "Editora: {$book->publisher->name}\n";
Editora: Best Publisher
> |
```