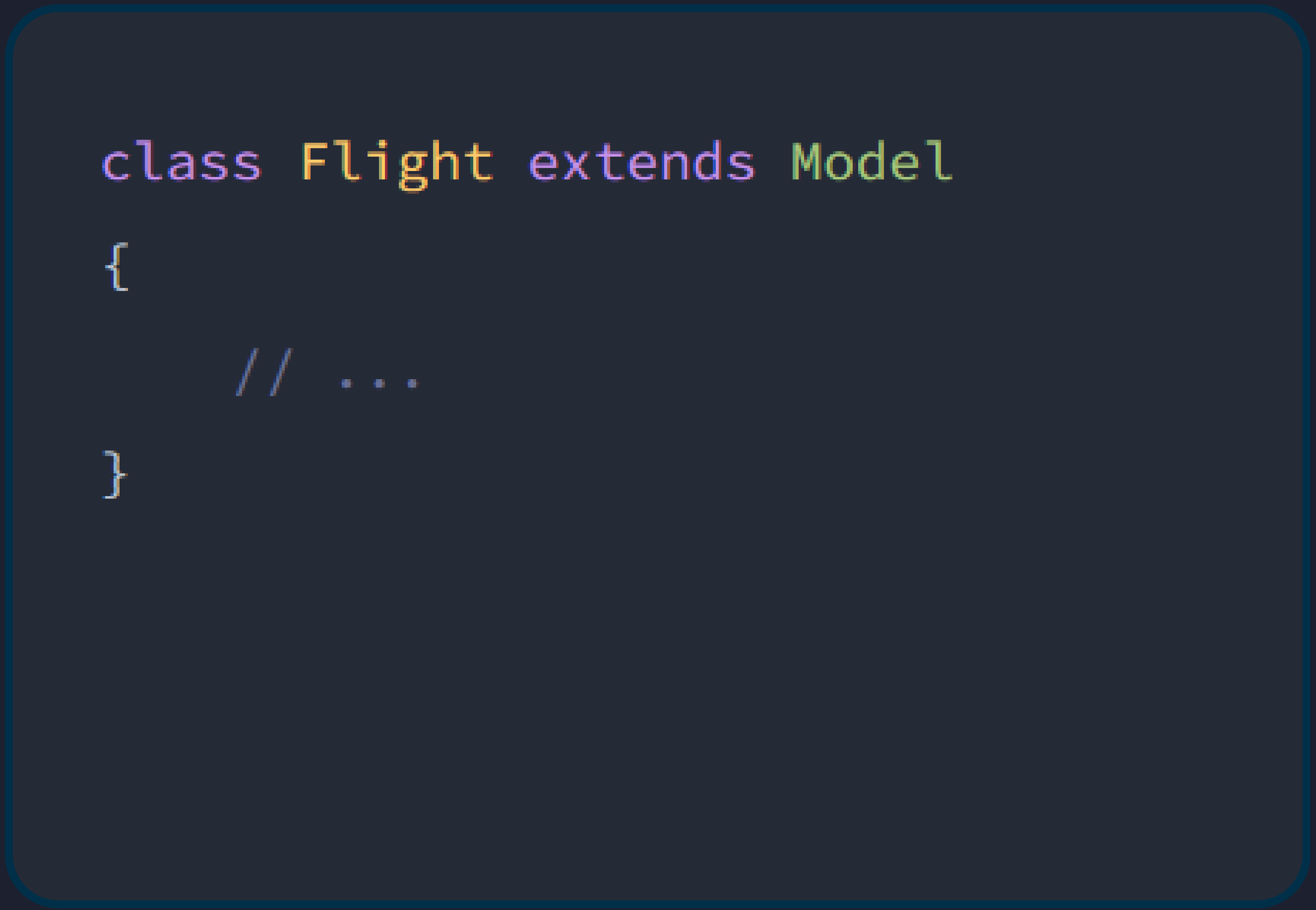
Meet Eloquent ORM

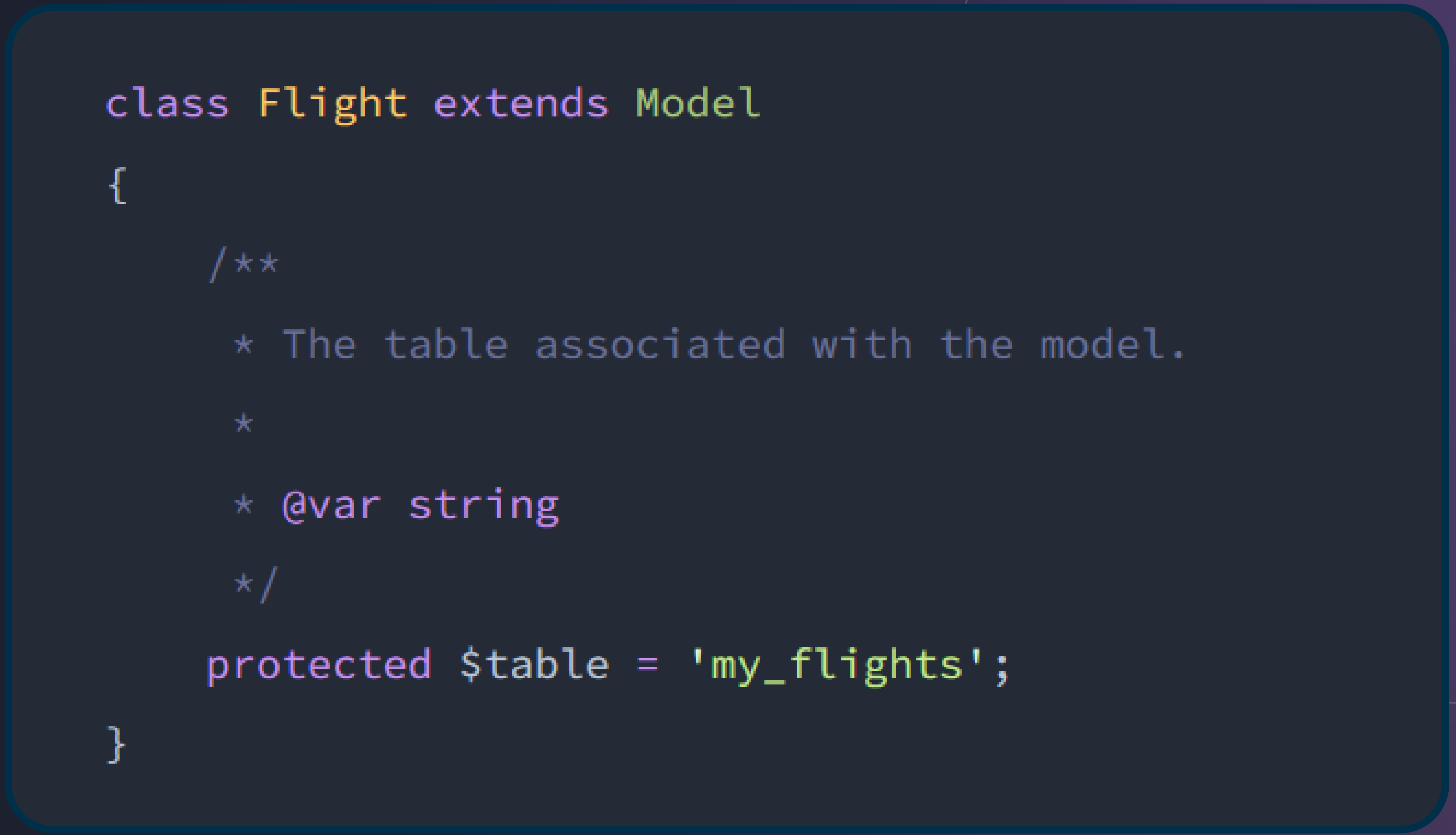
- Eloquent is an object-relational mapper (ORM)
- Eloquent models represent database tables.
- Models can be used to perform operations on data
- Eloquent also supports relationships between models
- It provides layer between application and database

Naming Convention

- Table name: brands Model name: Brand
- Table name: product_details Model name: ProductDetails
- If we follow this convention no need to define table name inside model. Other wise we need to define.



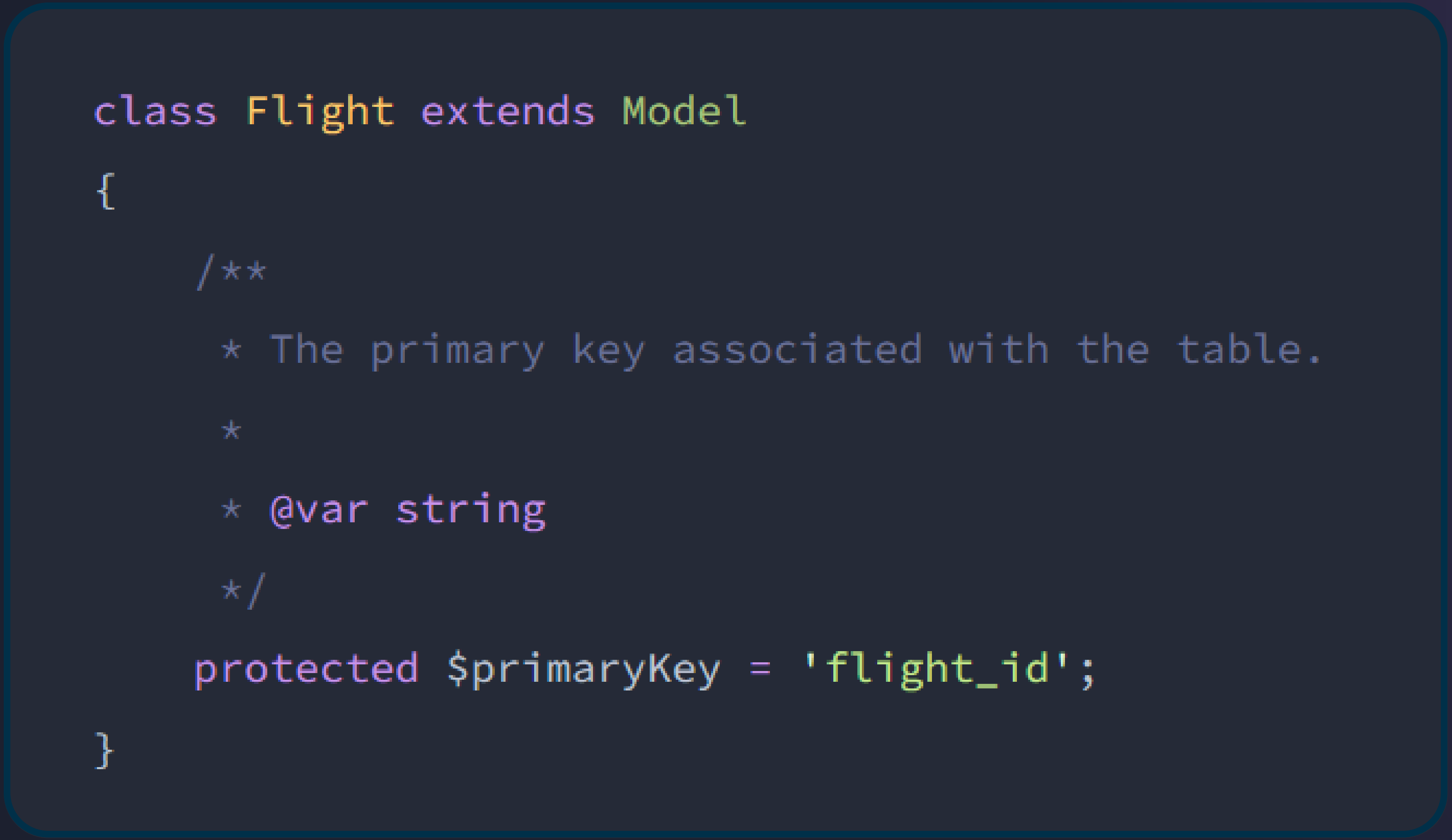
```
class Flight extends Model
{
    // ...
}
```



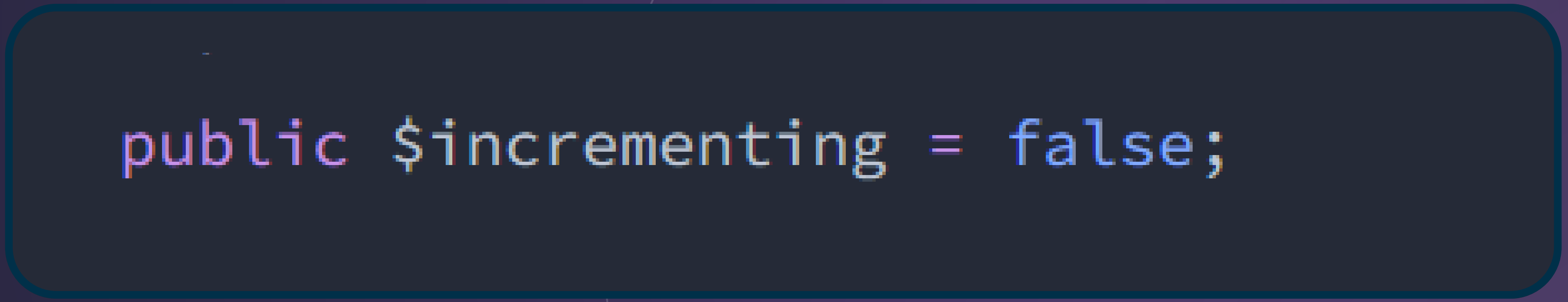
```
class Flight extends Model
{
    /**
     * The table associated with the model.
     *
     * @var string
     */
    protected $table = 'my_flights';
}
```

Naming Convention

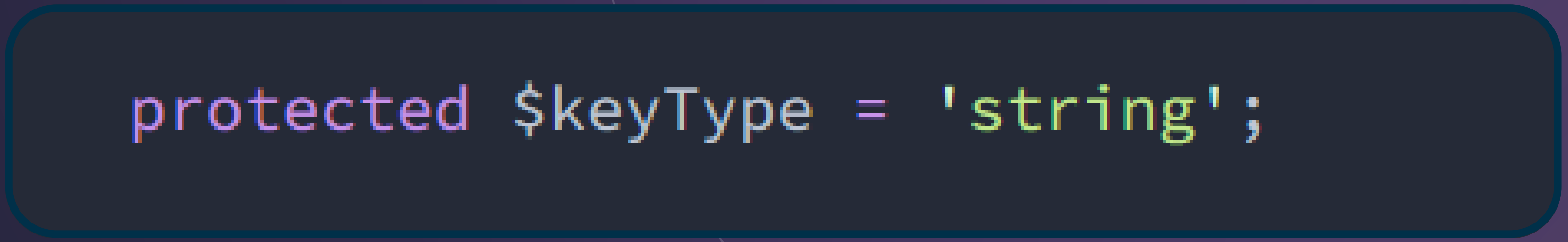
- Model assume that corresponding database table has a primary key column named id.
- Eloquent assumes that the primary key is an incrementing integer value
- If necessary, you may define a protected $primaryKey property



```
class Flight extends Model
{
    /**
     * The primary key associated with the table.
     *
     * @var string
     */
    protected $primaryKey = 'flight_id';
}
```



```
public $incrementing = false;
```



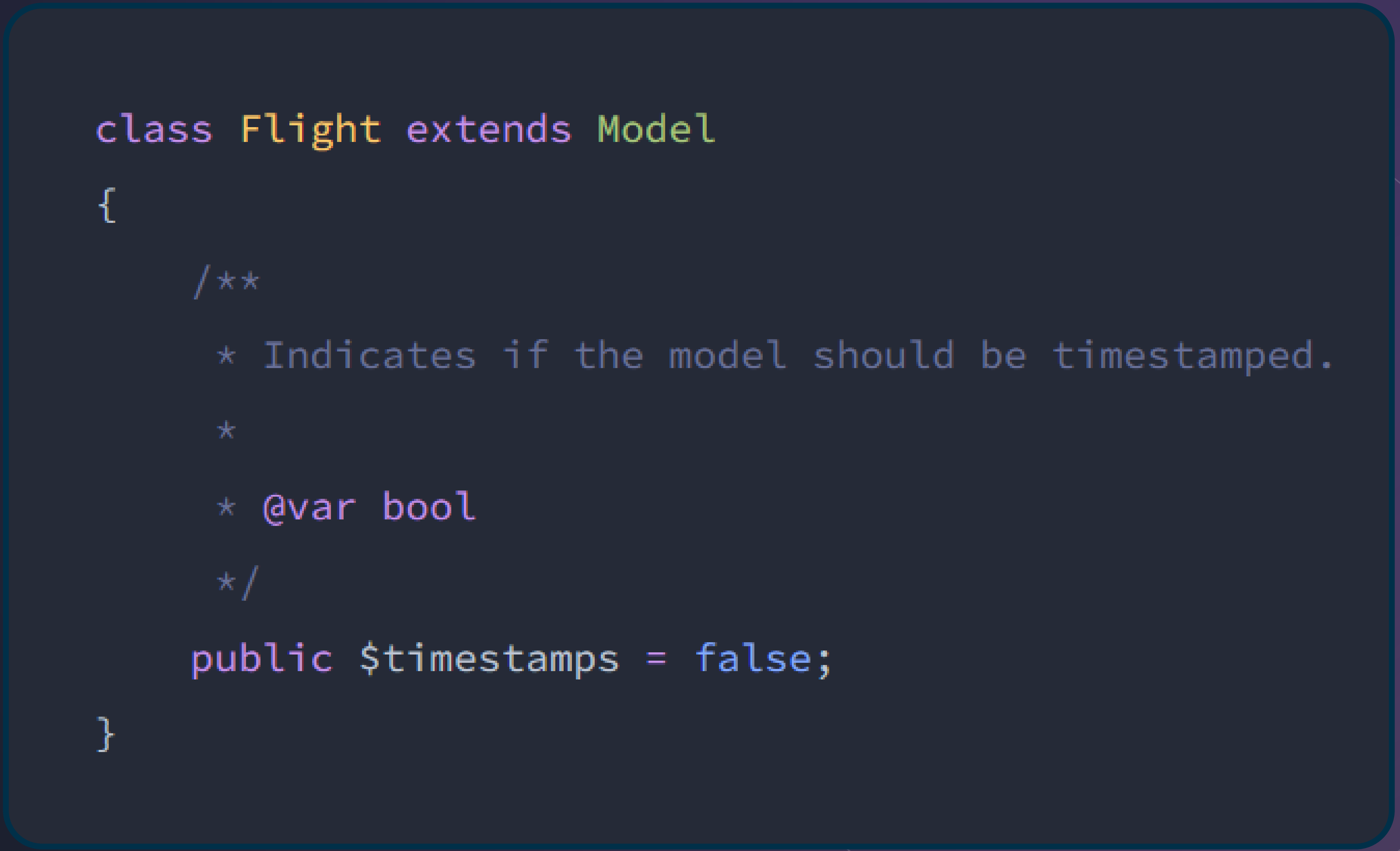
```
protected $keyType = 'string';
```

Naming Convention

Model expects created_at and updated_at columns exist on corresponding database table.

Eloquent will automatically set these column's values when models are created or updated.

If you do not want timestamp automatically managed by Eloquent, you should define a $timestamps property false.

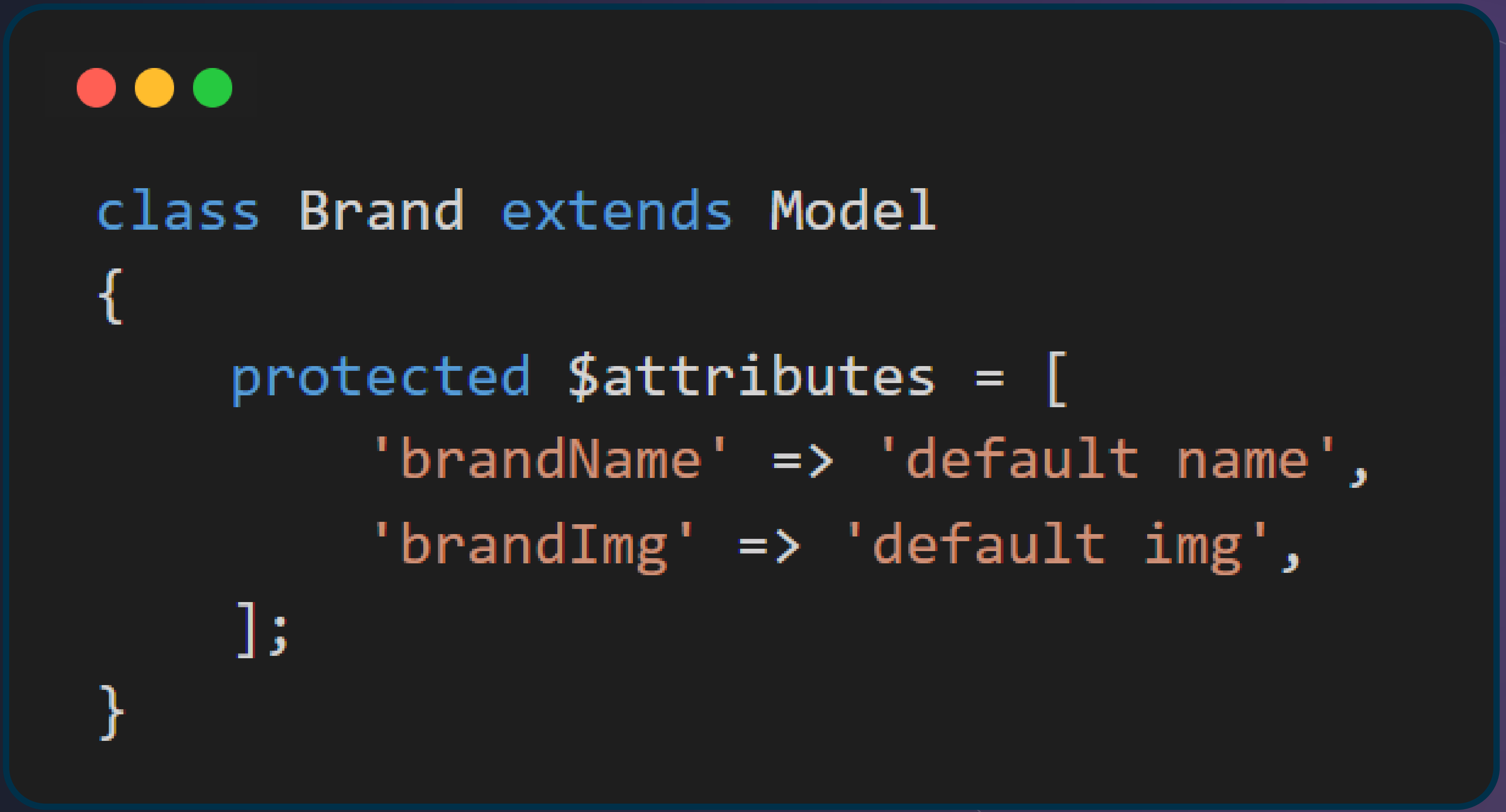


```
class Flight extends Model
{
    /**
     * Indicates if the model should be timestamped.
     *
     * @var bool
     */
    public $timestamps = false;
}
```

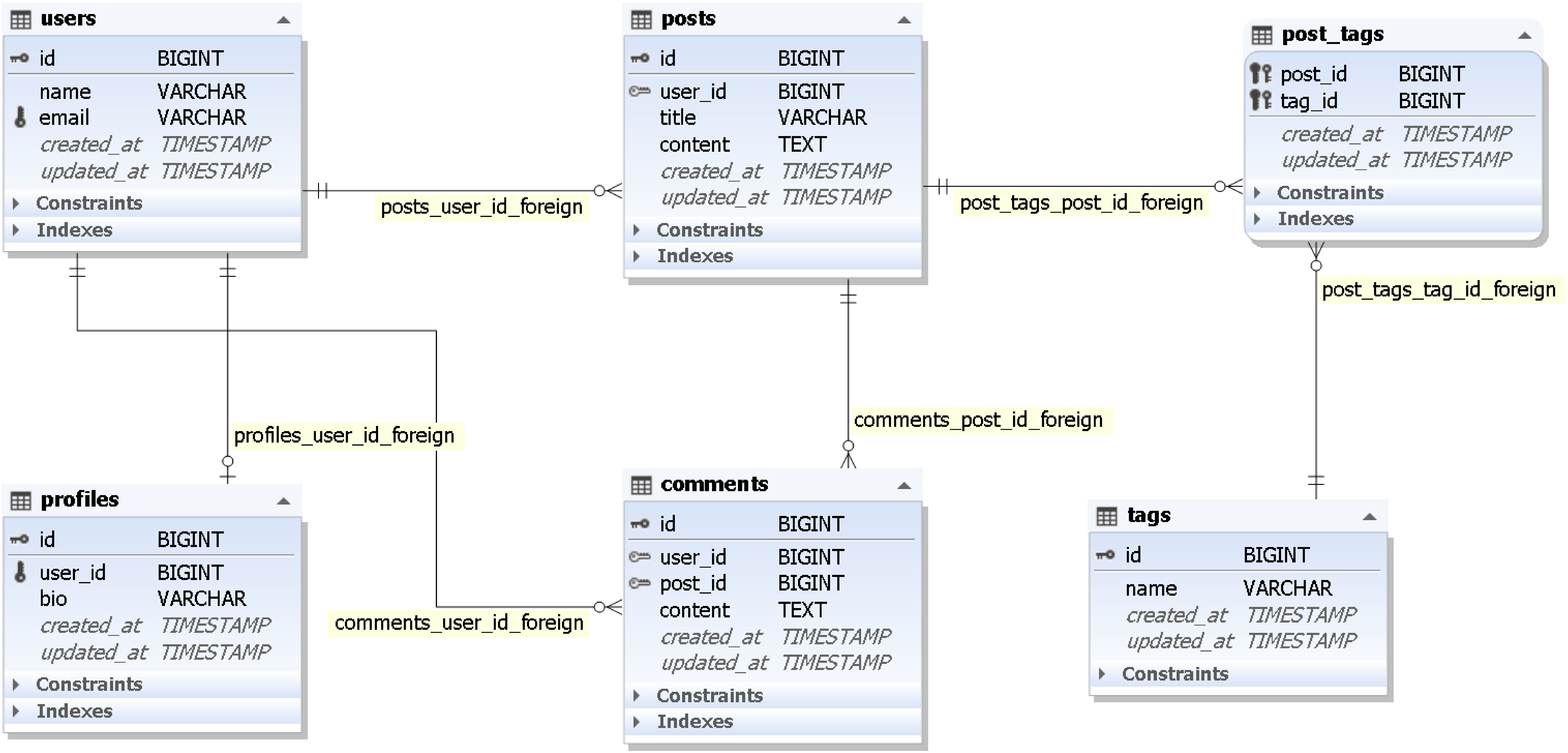
Naming Convention

By default model instance will not contain any attribute values.

But you can define an $attributes property on your model as you want.



```
class Brand extends Model
{
    protected $attributes = [
        'brandName' => 'default name',
        'brandImg' => 'default img',
    ];
}
```



users

id	BIGINT
name	VARCHAR
email	VARCHAR
created_at	*TIMESTAMP*
updated_at	*TIMESTAMP*

Constraints
Indexes

posts

id	BIGINT
user_id	BIGINT
title	VARCHAR
content	TEXT
created_at	*TIMESTAMP*
updated_at	*TIMESTAMP*

Constraints
Indexes

post_tags

post_id	BIGINT
tag_id	BIGINT
created_at	*TIMESTAMP*
updated_at	*TIMESTAMP*

Constraints
Indexes

profiles

id	BIGINT
user_id	BIGINT
bio	VARCHAR
created_at	*TIMESTAMP*
updated_at	*TIMESTAMP*

Constraints
Indexes

comments

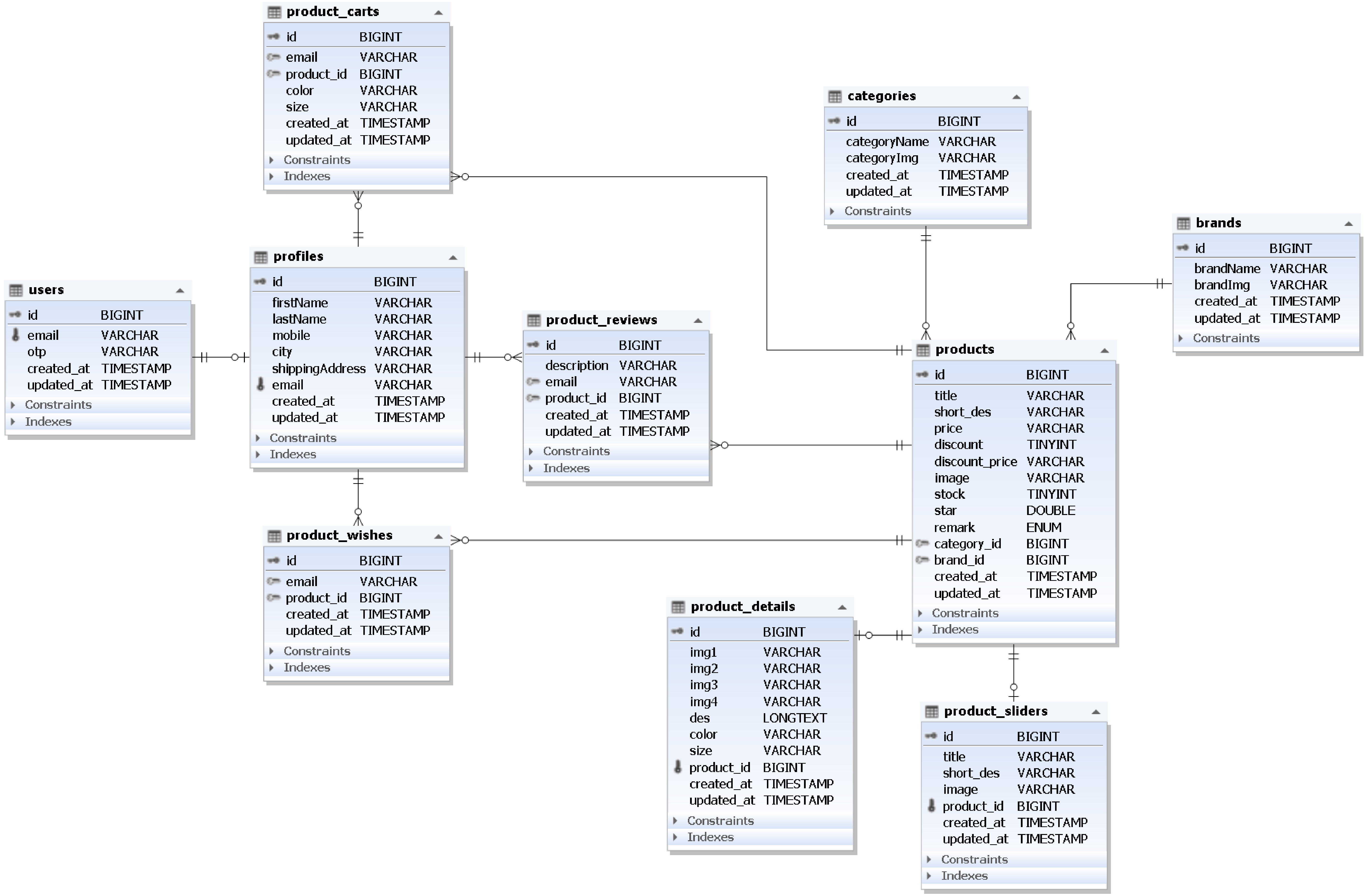
id	BIGINT
user_id	BIGINT
post_id	BIGINT
content	TEXT
created_at	*TIMESTAMP*
updated_at	*TIMESTAMP*

Constraints
Indexes

tags

id	BIGINT
name	VARCHAR
created_at	*TIMESTAMP*
updated_at	*TIMESTAMP*

Constraints



product_carts

id	BIGINT
email	VARCHAR
product_id	BIGINT
color	VARCHAR
size	VARCHAR
created_at	TIMESTAMP
updated_at	TIMESTAMP

Constraints
Indexes

categories

id	BIGINT
categoryName	VARCHAR
categoryImg	VARCHAR
created_at	TIMESTAMP
updated_at	TIMESTAMP

Constraints

brands

id	BIGINT
brandName	VARCHAR
brandImg	VARCHAR
created_at	TIMESTAMP
updated_at	TIMESTAMP

Constraints

users

id	BIGINT
email	VARCHAR
otp	VARCHAR
created_at	TIMESTAMP
updated_at	TIMESTAMP

Constraints
Indexes

profiles

id	BIGINT
firstName	VARCHAR
lastName	VARCHAR
mobile	VARCHAR
city	VARCHAR
shippingAddress	VARCHAR
email	VARCHAR
created_at	TIMESTAMP
updated_at	TIMESTAMP

Constraints
Indexes

product_reviews

id	BIGINT
description	VARCHAR
email	VARCHAR
product_id	BIGINT
created_at	TIMESTAMP
updated_at	TIMESTAMP

Constraints
Indexes

products

id	BIGINT
title	VARCHAR
short_des	VARCHAR
price	VARCHAR
discount	TINYINT
discount_price	VARCHAR
image	VARCHAR
stock	TINYINT
star	DOUBLE
remark	ENUM
category_id	BIGINT
brand_id	BIGINT
created_at	TIMESTAMP
updated_at	TIMESTAMP

Constraints
Indexes

product_wishes

id	BIGINT
email	VARCHAR
product_id	BIGINT
created_at	TIMESTAMP
updated_at	TIMESTAMP

Constraints
Indexes

product_details

id	BIGINT
img1	VARCHAR
img2	VARCHAR
img3	VARCHAR
img4	VARCHAR
des	LONGTEXT
color	VARCHAR
size	VARCHAR
product_id	BIGINT
created_at	TIMESTAMP
updated_at	TIMESTAMP

Constraints
Indexes

product_sliders

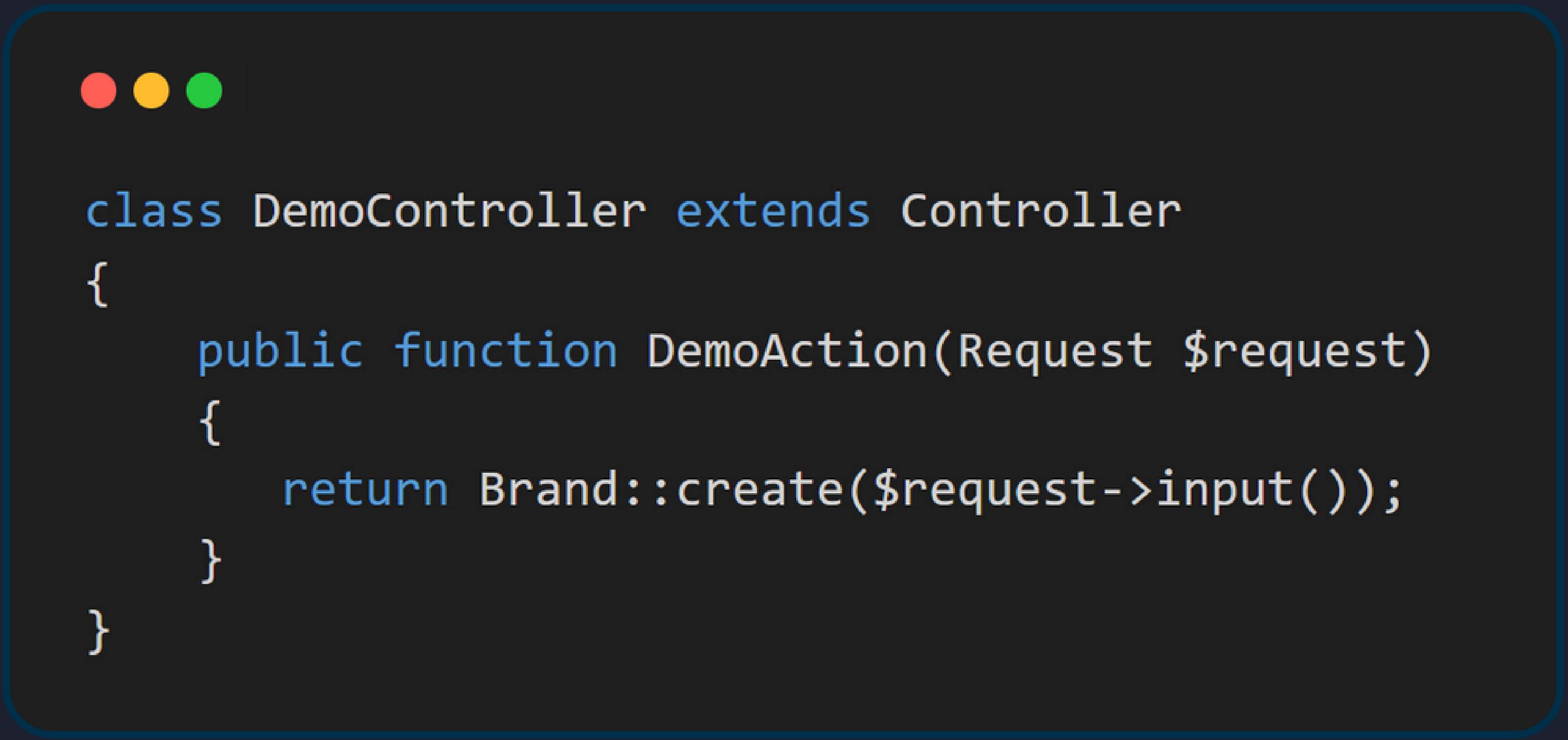
id	BIGINT
title	VARCHAR
short_des	VARCHAR
image	VARCHAR
product_id	BIGINT
created_at	TIMESTAMP
updated_at	TIMESTAMP

Constraints
Indexes

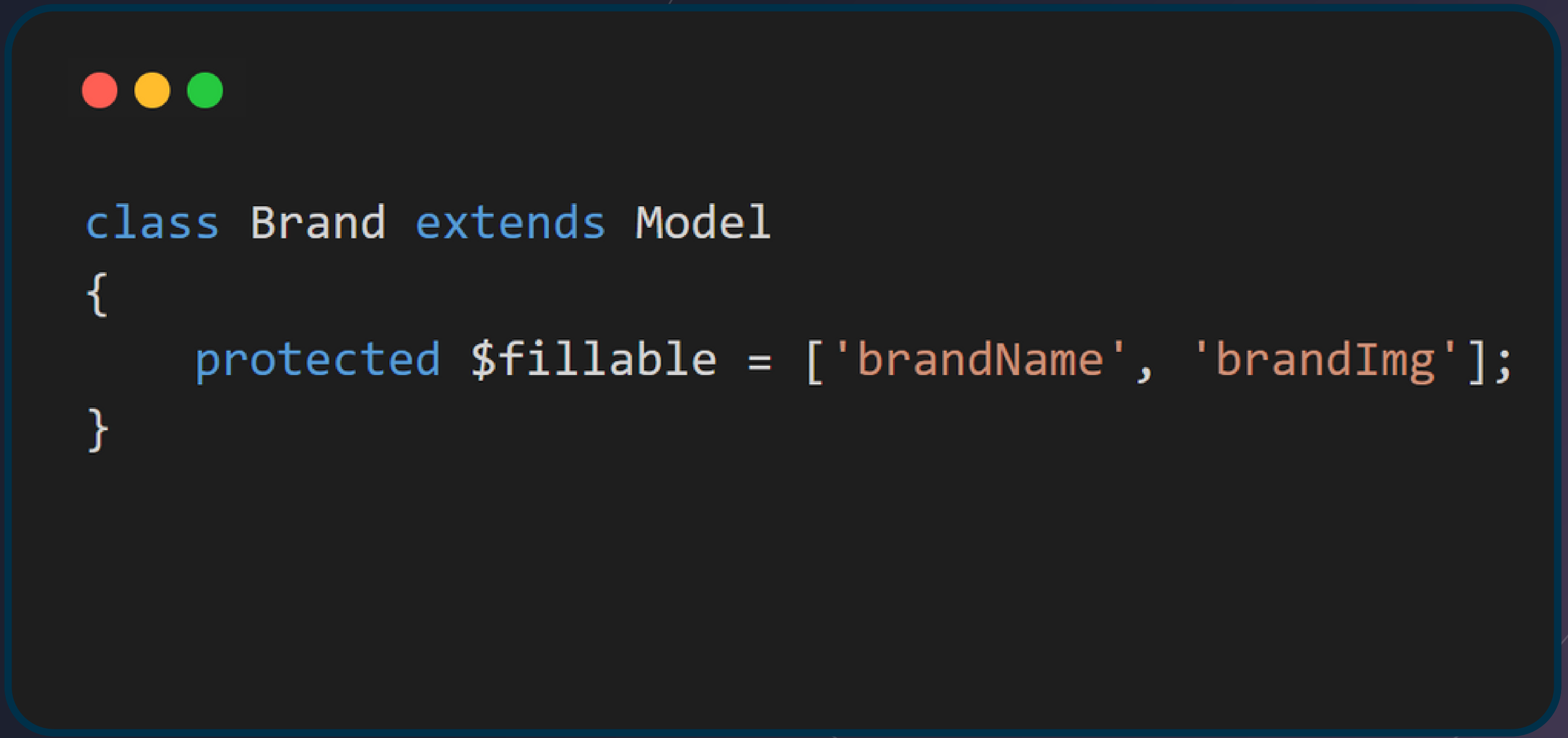
Insert Using Model

The **create** method to "save" a new model using a single PHP statement.

In Laravel, the **fillable** property is used to define which fields in a model can be mass assigned.



```
class DemoController extends Controller
{
    public function DemoAction(Request $request)
    {
       return Brand::create($request->input());
    }
}
```

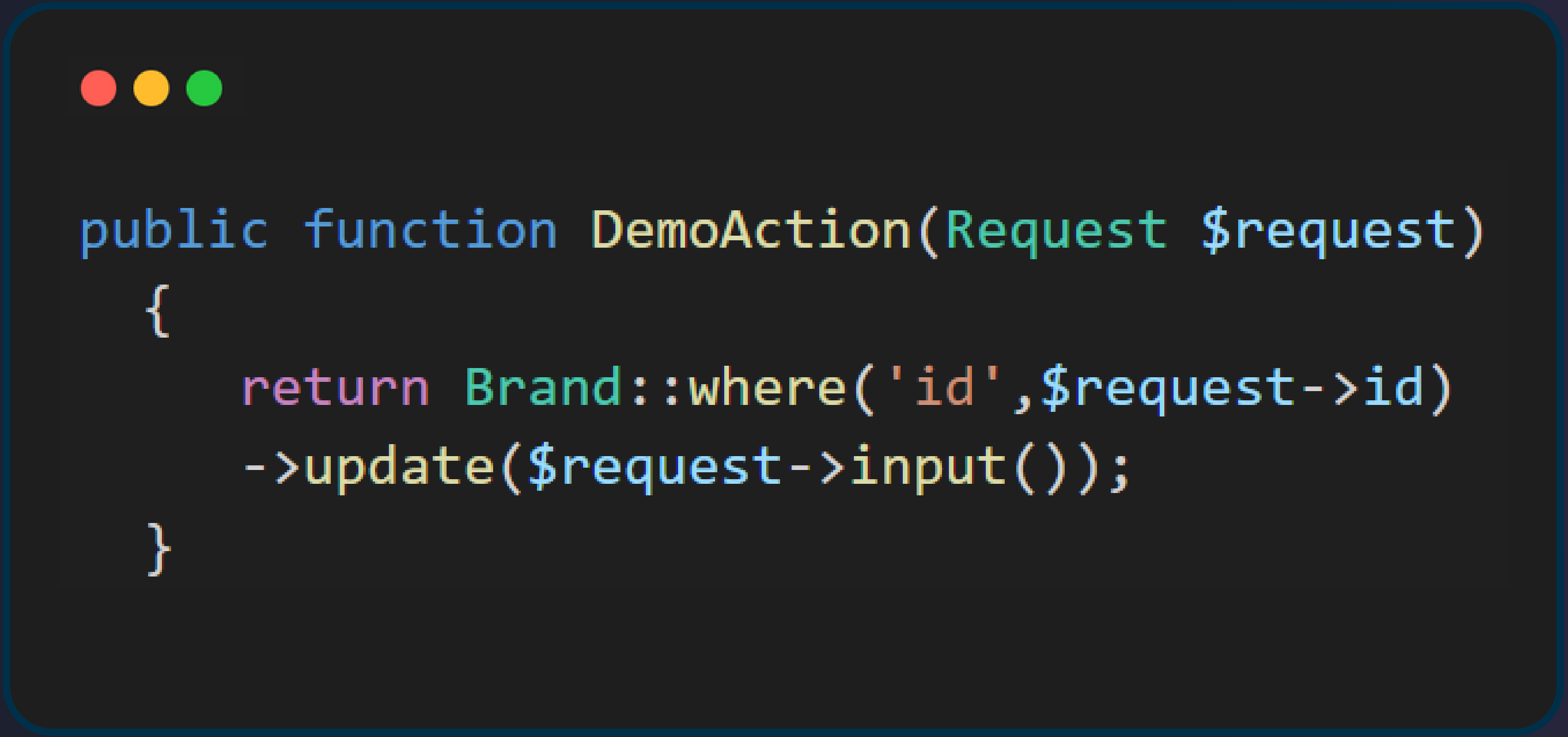


```
class Brand extends Model
{
    protected $fillable = ['brandName', 'brandImg'];
}
```

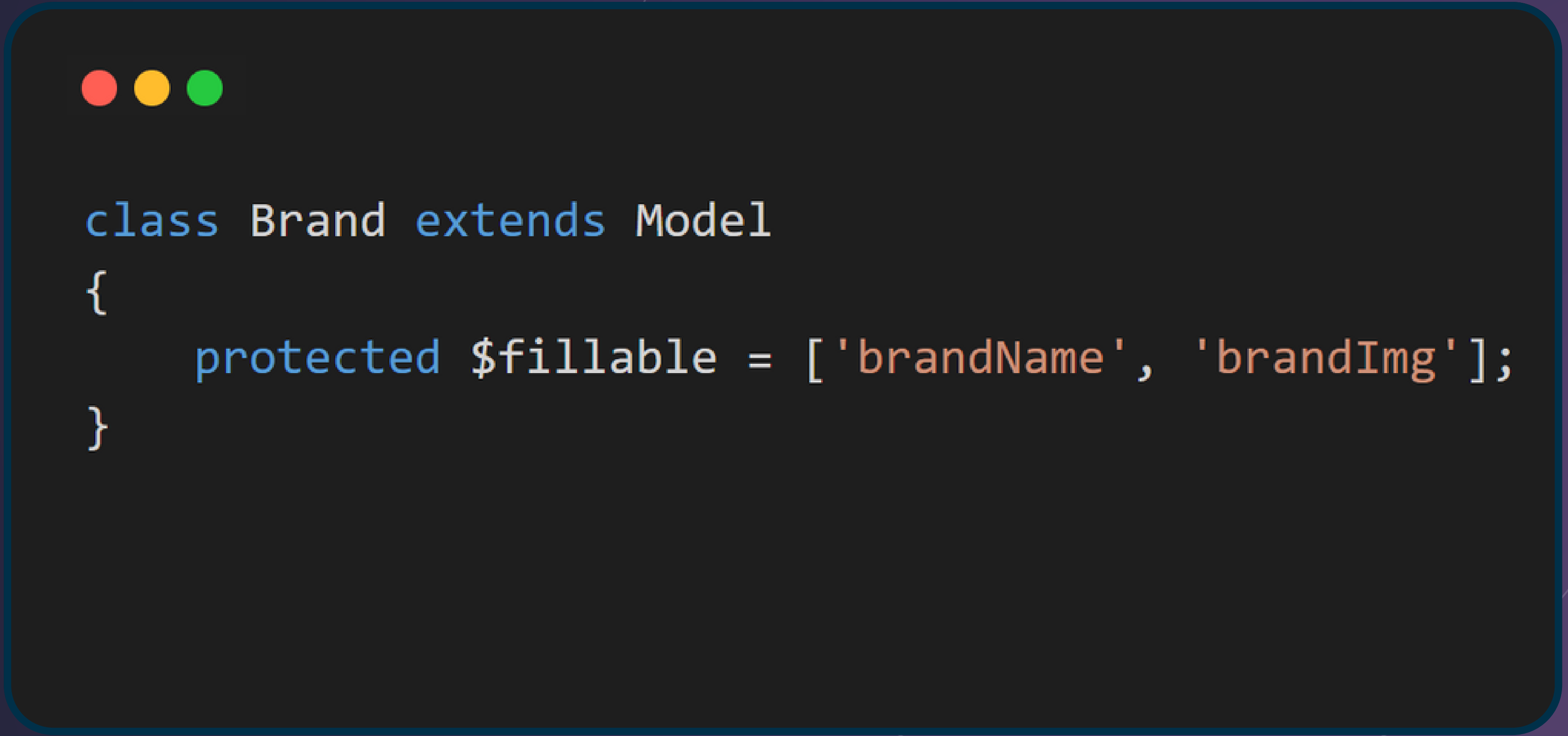
Update Using Model

The **update** method expects an array of column and value pairs representing the columns that should be updated

In Laravel, the **fillable** property is used to define which fields in a model can be mass assigned.



```
public function DemoAction(Request $request)
  {
      return Brand::where('id',$request->id)
      ->update($request->input());
  }
```



```
class Brand extends Model
{
    protected $fillable = ['brandName', 'brandImg'];
}
```

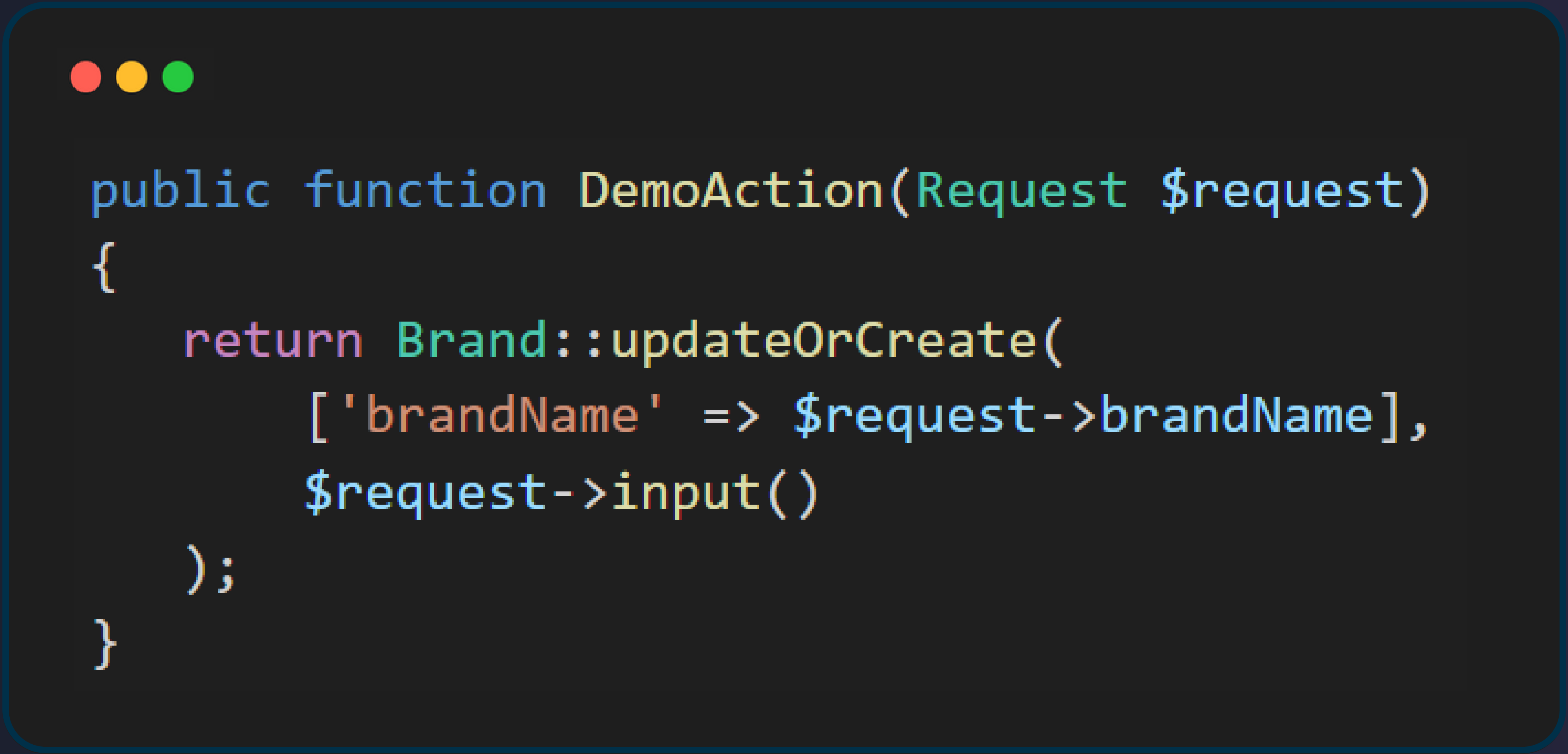
Why we write fillable inside model

There are a few reasons why you might want to use the fillable property in Laravel

- **Security:** It helps protect your application from mass assignment attacks.
- **Performance**: It can improve the performance of your application by reducing the number of fields that need to be checked when mass assigning data.
- **Readability:** It makes your code more readable by explicitly defining which fields can be mass assigned.
- **Consistency:** It ensures that all of your models have the same set of fillable fields, which can make your code more consistent.
- **Extensibility:** It allows you to easily add or remove fillable fields as your application evolves.

Update or Create Using Model

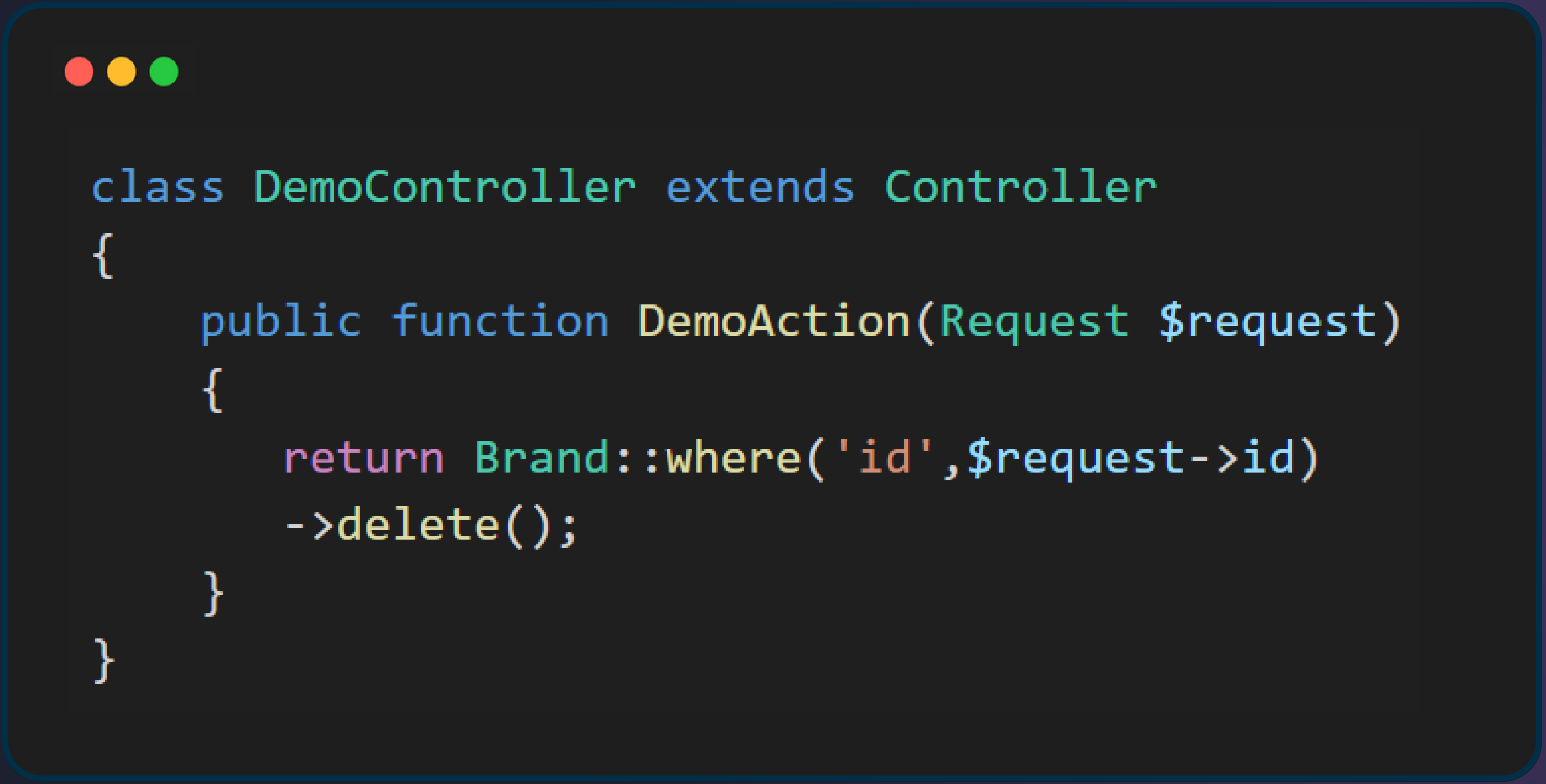
The **updateOrCreate()** method in Laravel is used to update an existing record in the database if it exists, or create a new record if it doesn't exist.



```
public function DemoAction(Request $request)
{
    return Brand::updateOrCreate(
         ['brandName' => $request->brandName],
         $request->input()
    );
}
```

Delete Using Model

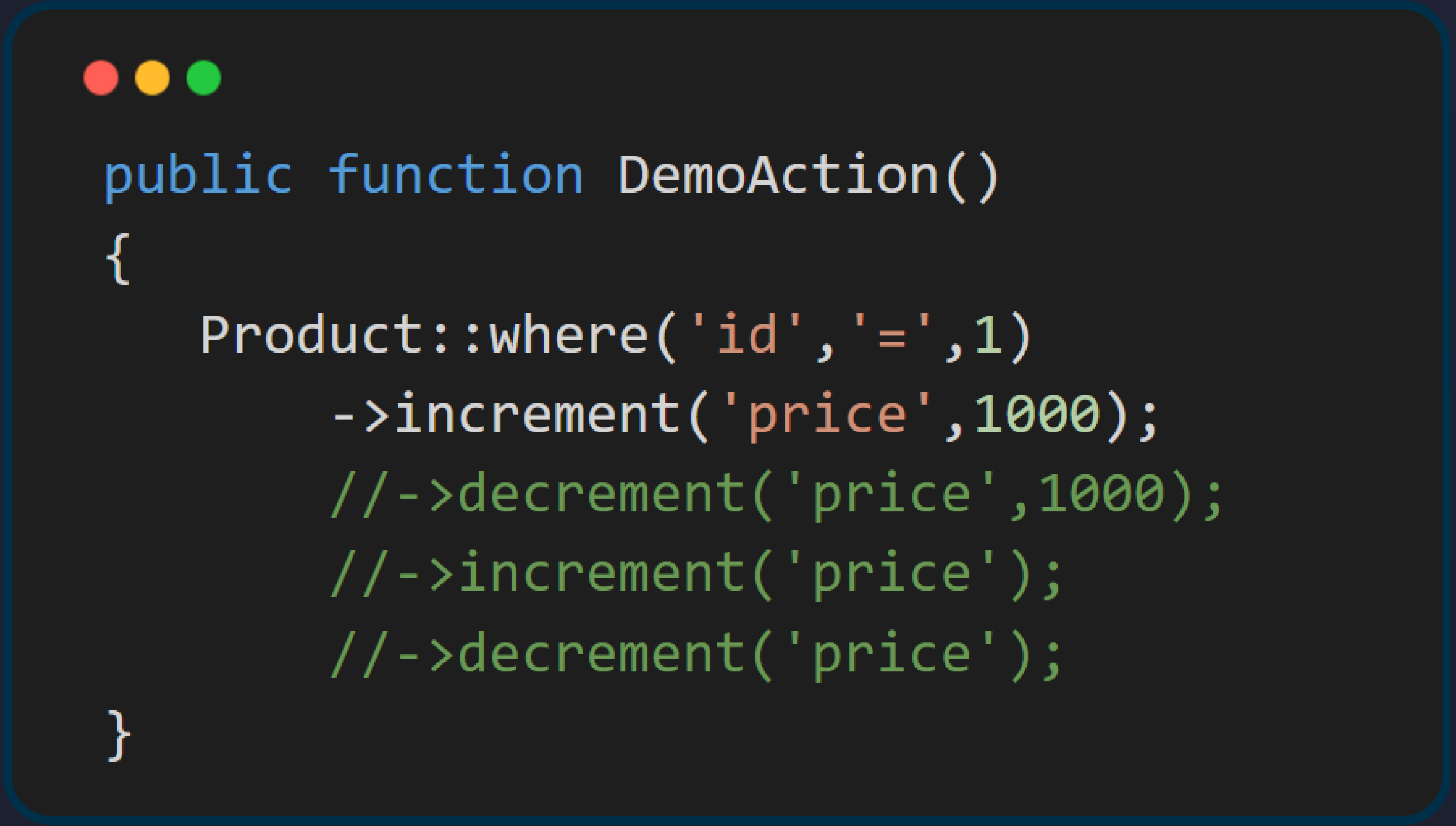
The **delete()** method in Laravel's Eloquent ORM is used to delete a record from the database.



```
class DemoController extends Controller
{
    public function DemoAction(Request $request)
    {
       return Brand::where('id',$request->id)
       ->delete();
    }
}
```

Increment & Decrement

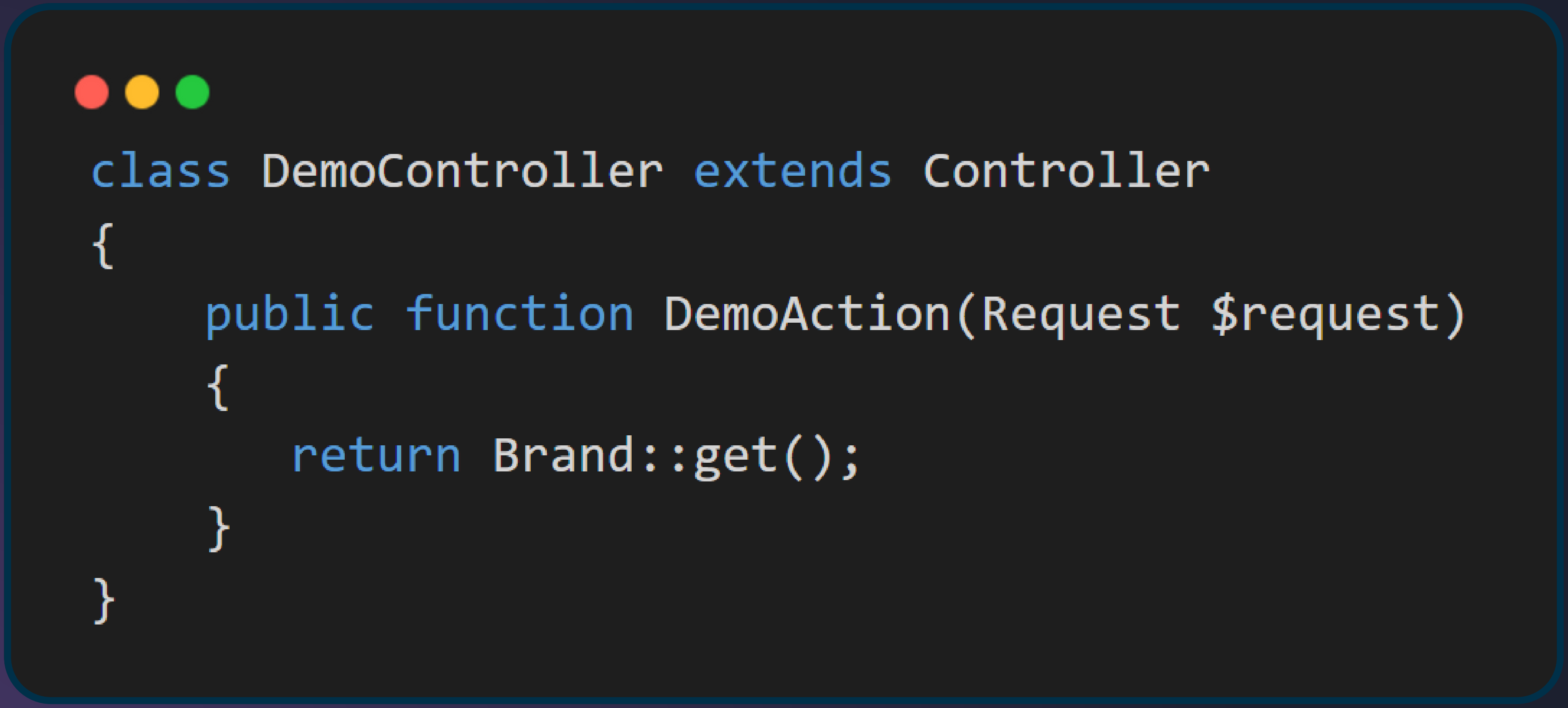
Laravel provides convenient methods for incrementing or decrementing the value of a given column.



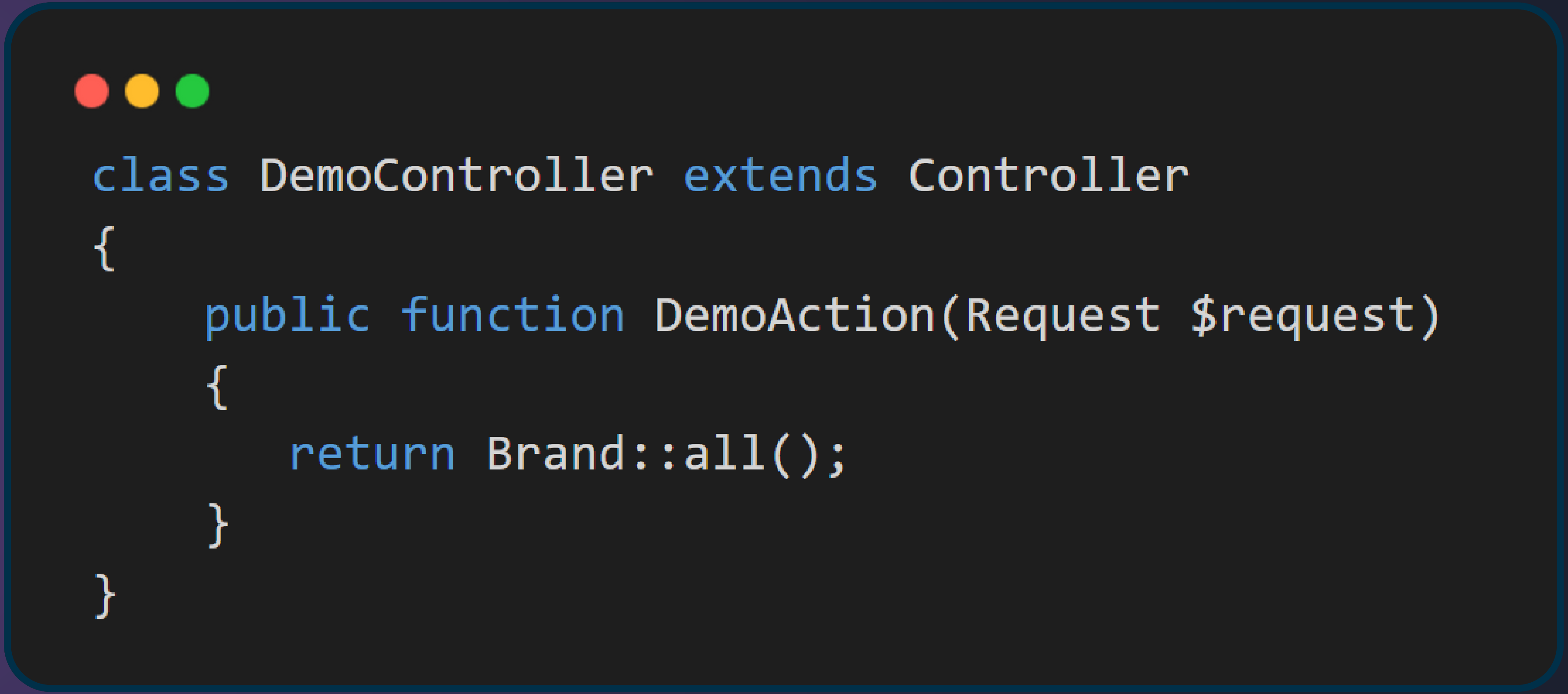
```
public function DemoAction()
{
   Product::where('id','=',1)
       ->increment('price',1000);
       //->decrement('price',1000);
       //->increment('price');
       //->decrement('price');
}
```

Retrieving All Rows

- Use the **get()** method to execute
- Use the **all()** method to execute

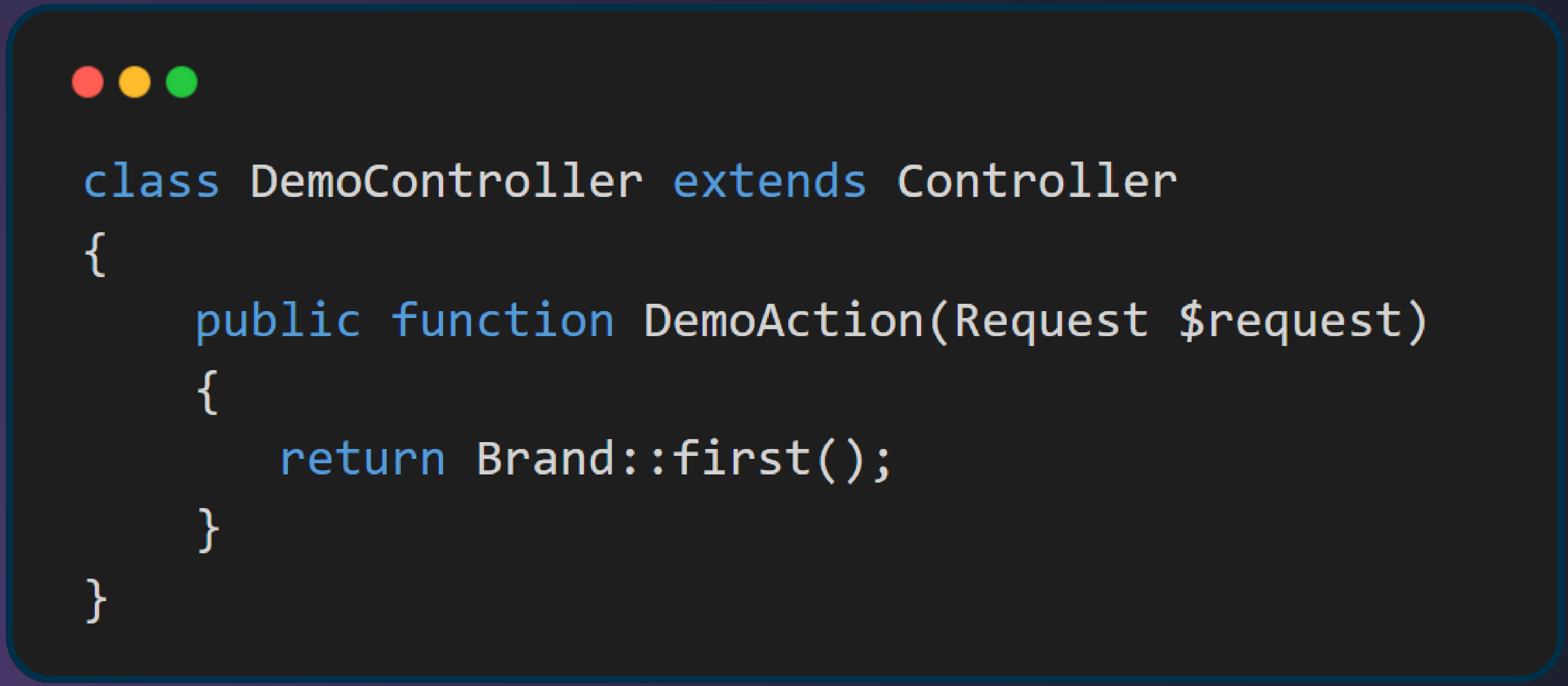


```
class DemoController extends Controller
{
    public function DemoAction(Request $request)
    {
        return Brand::get();
    }
}
```

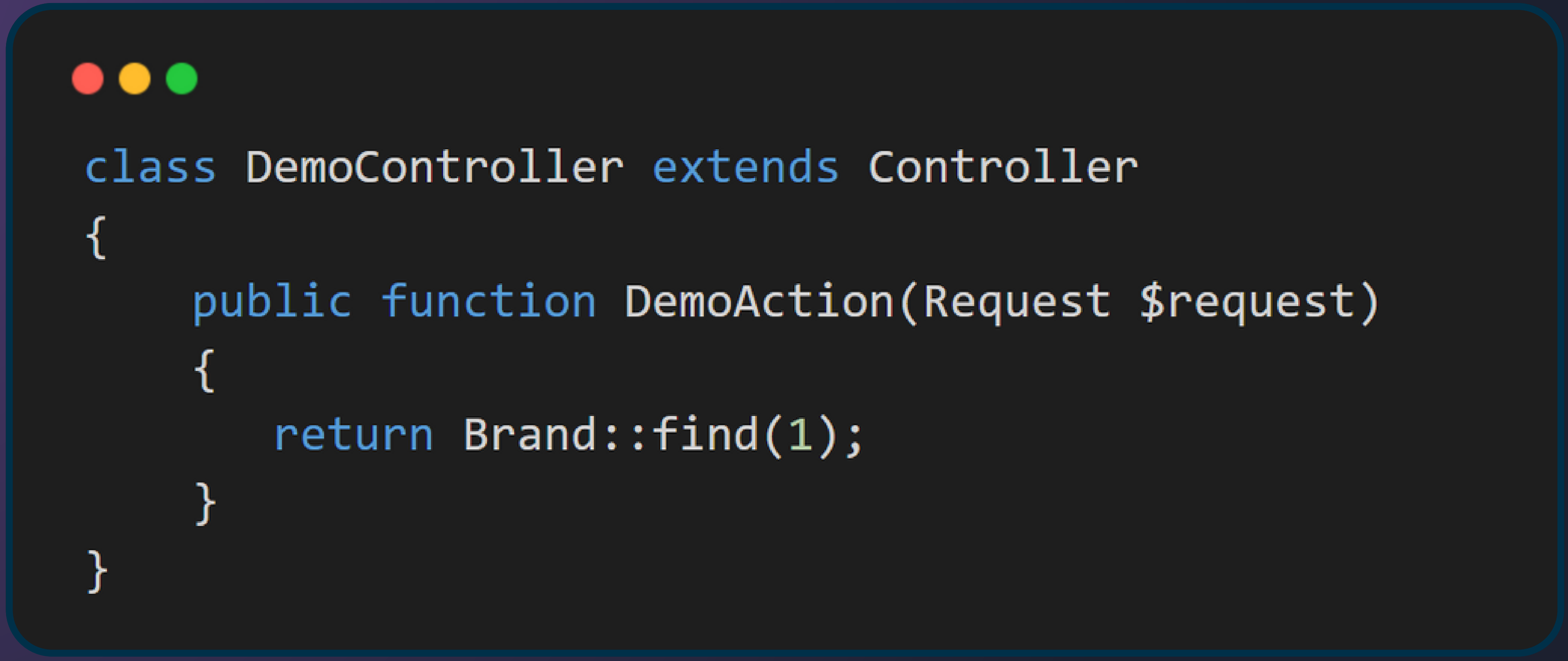


```
class DemoController extends Controller
{
    public function DemoAction(Request $request)
    {
        return Brand::all();
    }
}
```

Retrieving Single Row

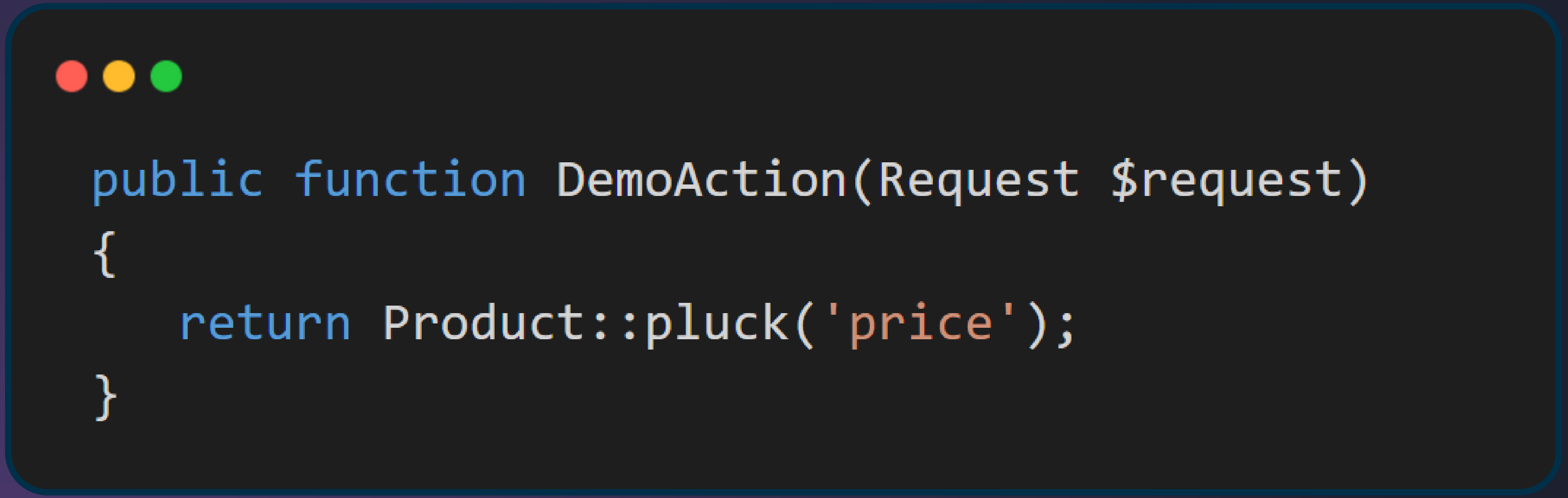


```
class DemoController extends Controller
{
    public function DemoAction(Request $request)
    {
        return Brand::first();
    }
}
```

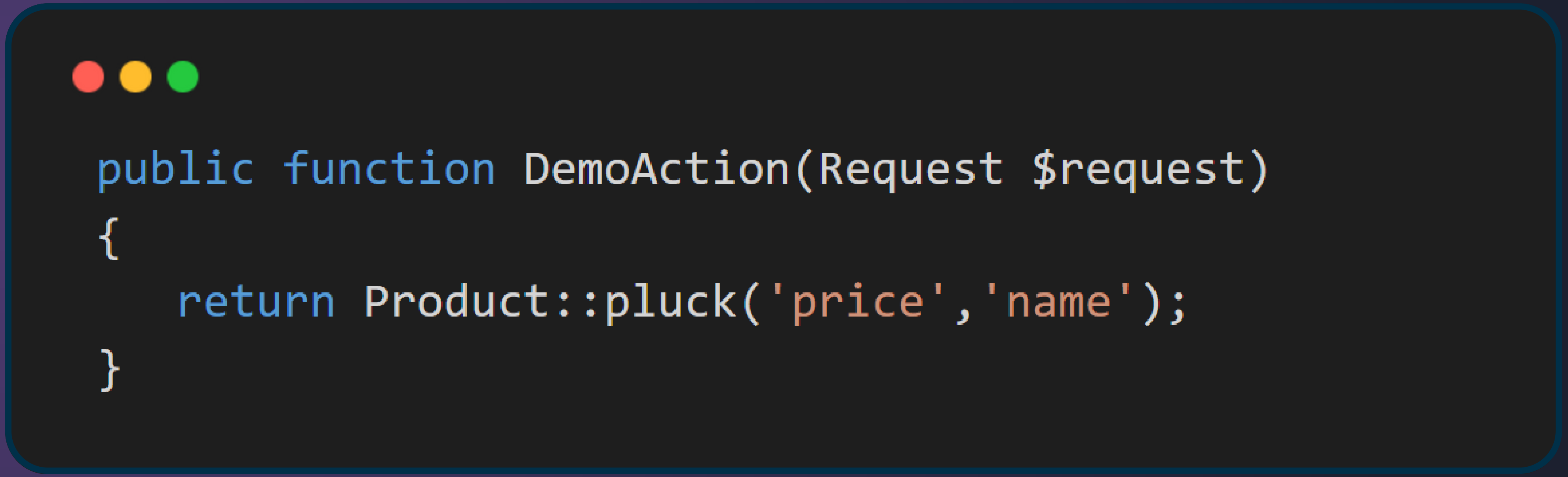


```
class DemoController extends Controller
{
    public function DemoAction(Request $request)
    {
        return Brand::find(1);
    }
}
```

Retrieving List Of Column Values



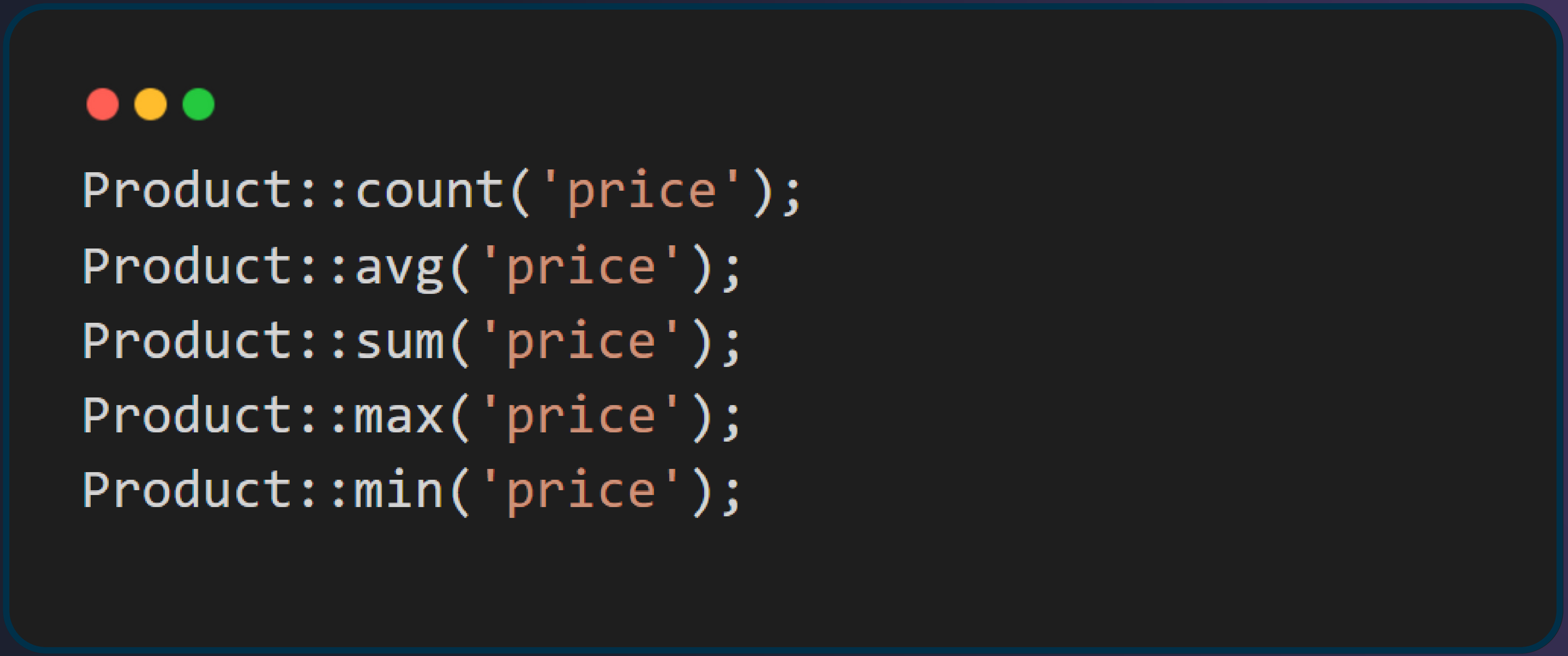
```
public function DemoAction(Request $request)
{
    return Product::pluck('price');
}
```



```
public function DemoAction(Request $request)
{
    return Product::pluck('price','name');
}
```

Aggregates

- Methods for retrieving aggregate values like count, max, min, avg, and sum.
- Call any of these methods after constructing query

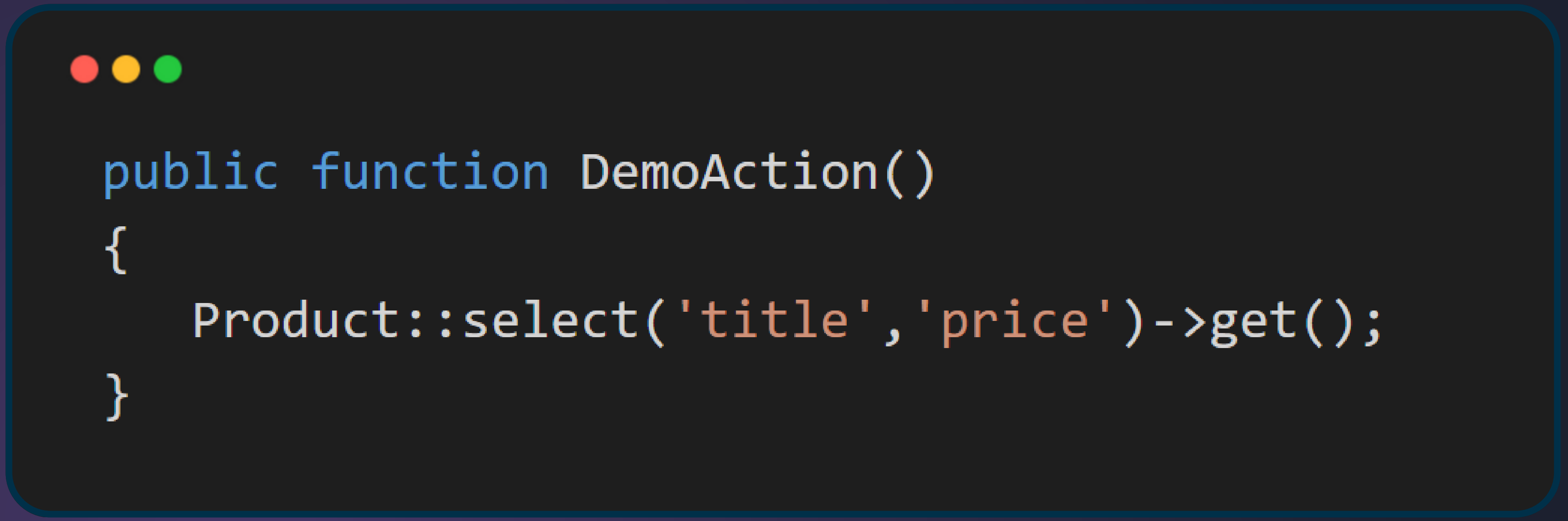


```php
Product::count('price');
Product::avg('price');
Product::sum('price');
Product::max('price');
Product::min('price');
```

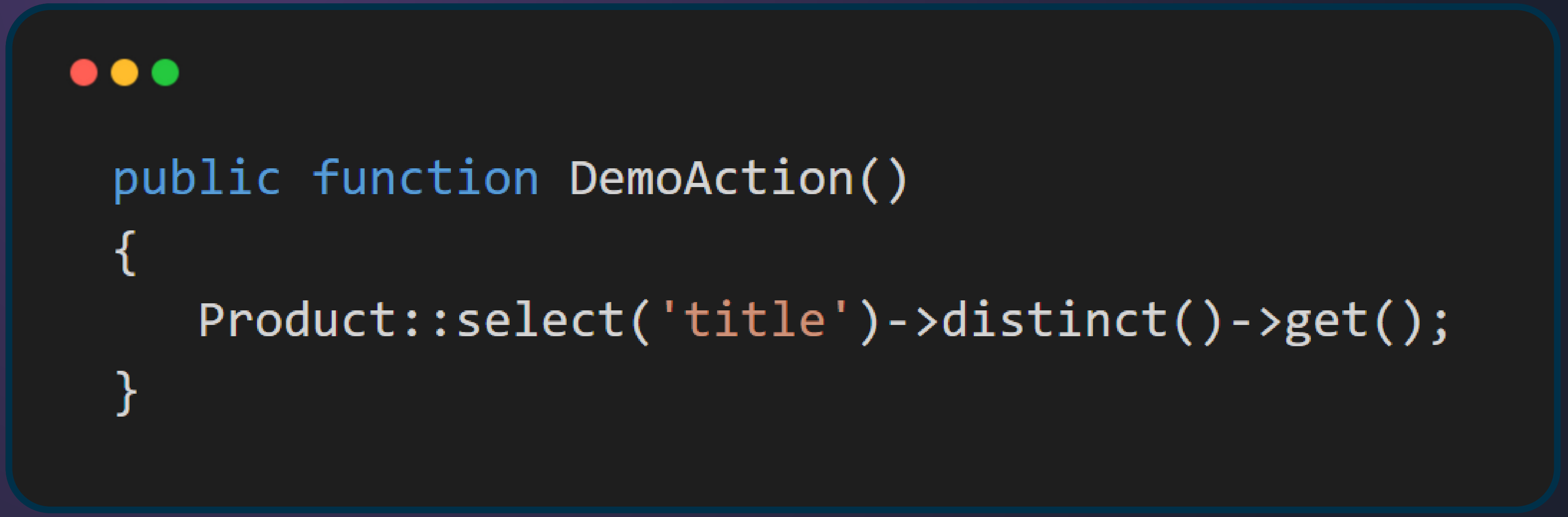
Select Clause

- The **select()** method allows you to specify the columns

- To return distinct results use the **distinct()** method



```
public function DemoAction()
{
    Product::select('title','price')->get();
}
```



```
public function DemoAction()
{
    Product::select('title')->distinct()->get();
}
```

Basic Where Clauses

The where() method allows you to filter the results.

- = (equal to)
- != (not equal to)
- < (less than)
- <= (less than or equal to)
- > (greater than)
- >= (greater than or equal to)
- LIKE (contains)
- NOT LIKE (does not contain)
- IN (is in the list)
- NOT IN (is not in the list)

Advance Where Clauses

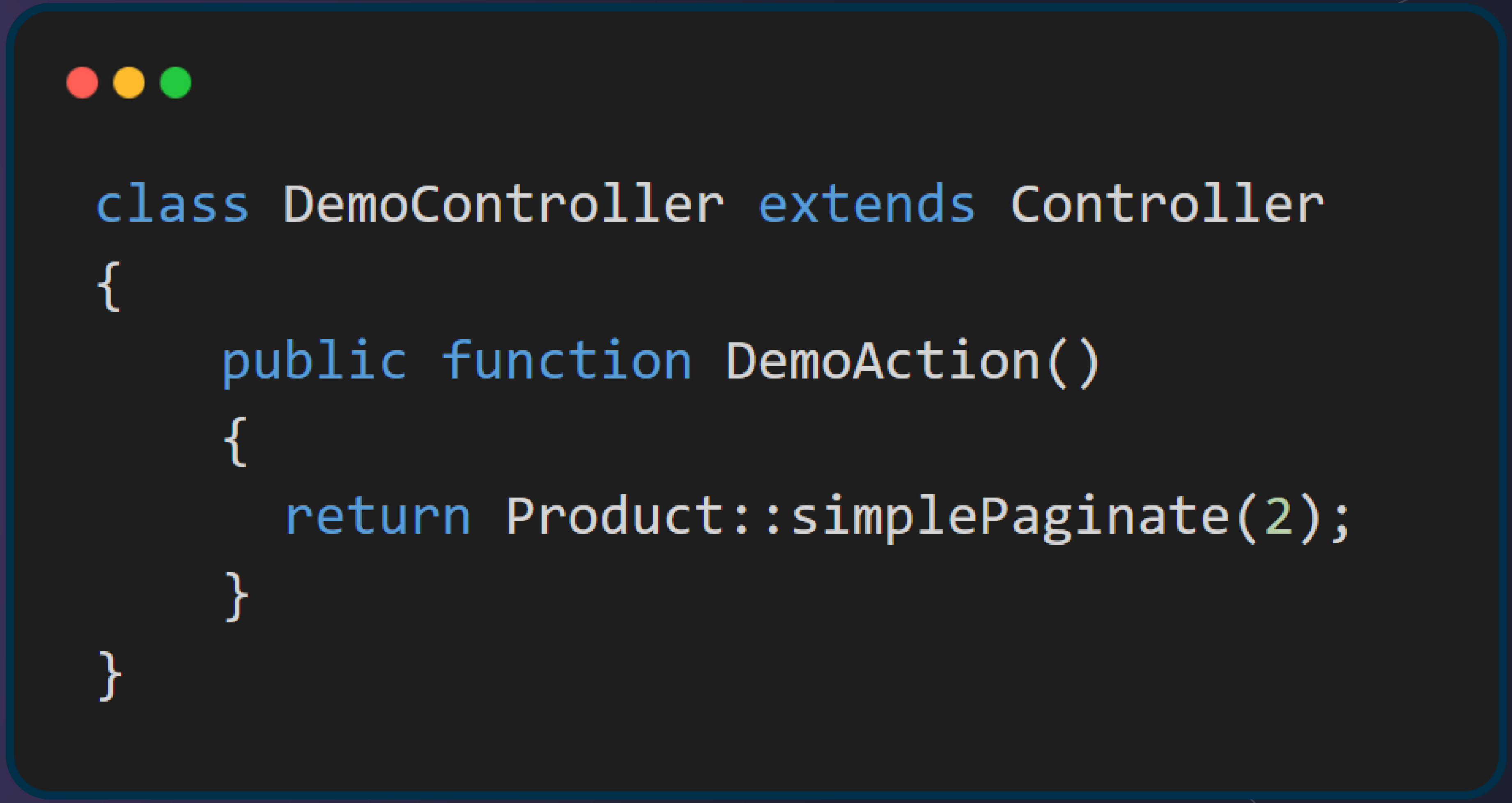
- The orWhere method to join a clause to the query using the or operator.
- The whereNot and orWhereNot methods may be used to negate a given group of query constraints.
- The whereBetween method verifies that a column's value is between two values .
- The whereNotBetween method verifies that a column's value lies outside of two values.
- The whereBetweenColumns method verifies that a column's value is between the two values of two columns in the same table row.
- The whereNotBetweenColumns method verifies that a column's value lies outside the two values of two columns in the same table row.
- The whereIn method verifies that a given column's value is contained within the given array.
- The whereNotIn method verifies that the given column's value is not contained in the given array.
- The whereNull method verifies that the value of the given column is NULL.
- he whereNotNull method verifies that the column's value is not NULL.
- The whereDate method may be used to compare a column's value against a date.
- The whereMonth method may be used to compare a column's value against a specific month.
- The whereDay method may be used to compare a column's value against a specific day of the month.
- The whereYear method may be used to compare a column's value against a specific year.
- The whereTime method may be used to compare a column's value against a specific time.
- The whereColumn method may be used to verify that two columns are equal.

Ordering, Grouping, Limit

- The orderBy method allows you to sort the results of the query by a given column
- The latest and oldest methods allow you to easily order results by date
- The inRandomOrder method may be used to sort the query results randomly
- The groupBy and having methods may be used to group the query results
- The skip and take methods to limit the number of results returned from the query or to skip a given number of results in the query

Paginate

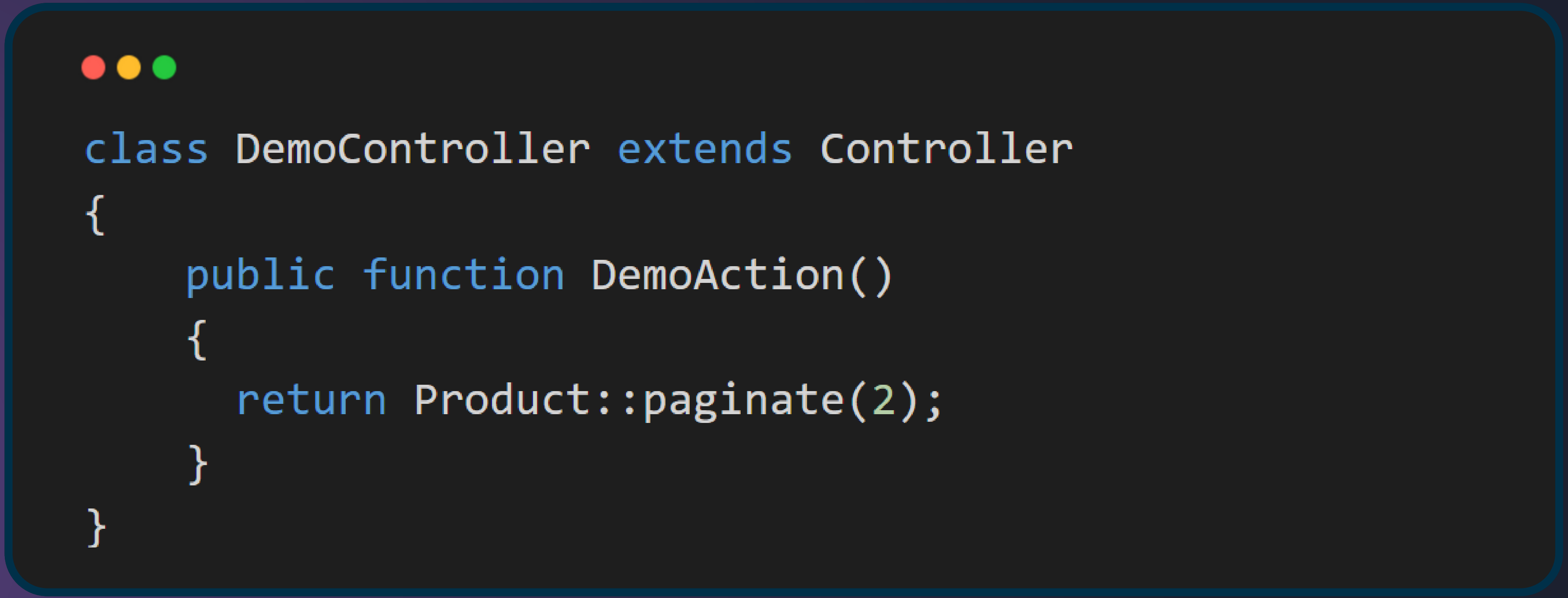
Display simple "Next" and "Previous" links in your application's UI, use the simplePaginate method to perform a single, efficient query



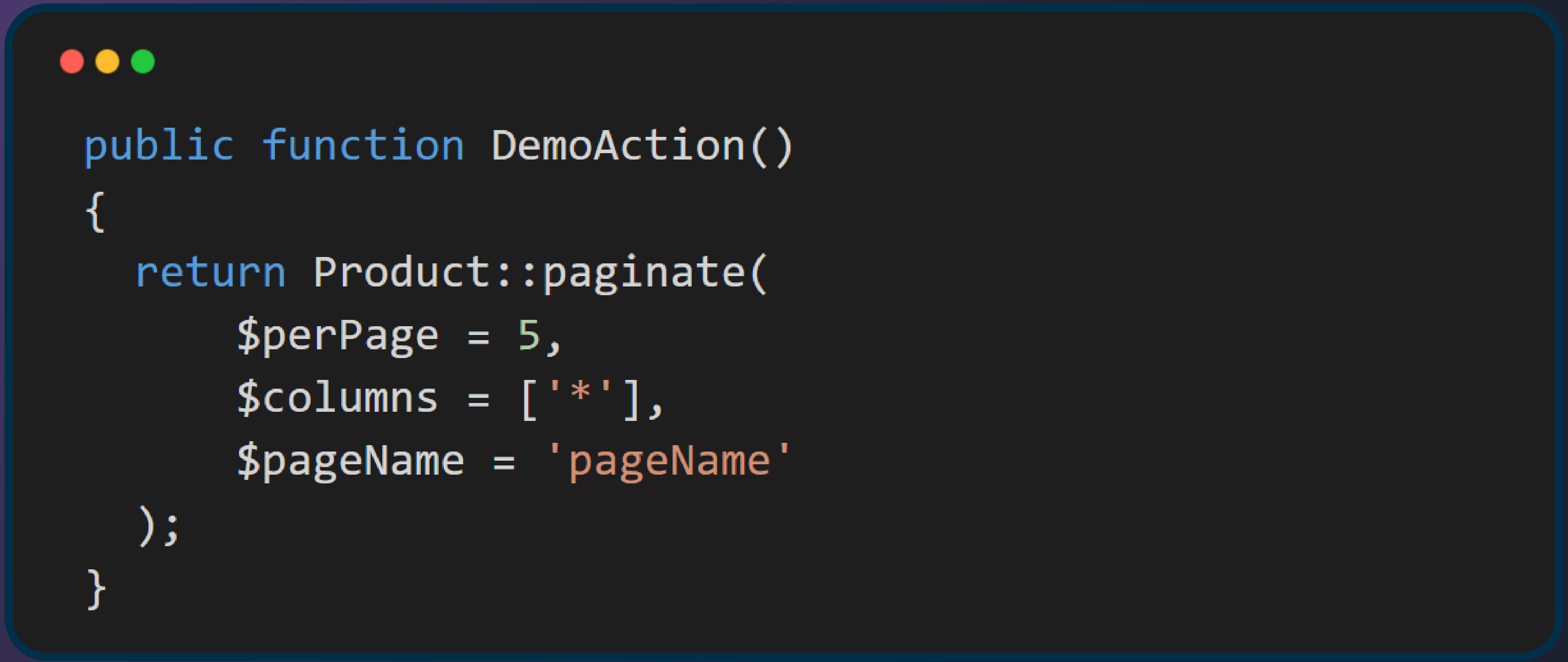
```
class DemoController extends Controller
{
    public function DemoAction()
    {
      return Product::simplePaginate(2);
    }
}
```

Paginate

The paginate method counts the total number of records matched by the query before retrieving the records from the database.



```
class DemoController extends Controller
{
    public function DemoAction()
    {
      return Product::paginate(2);
    }
}
```



```
public function DemoAction()
{
  return Product::paginate(
      $perPage = 5,
      $columns = ['*'],
      $pageName = 'pageName'
  );
}
```

Understanding Eloquent Relationship Term

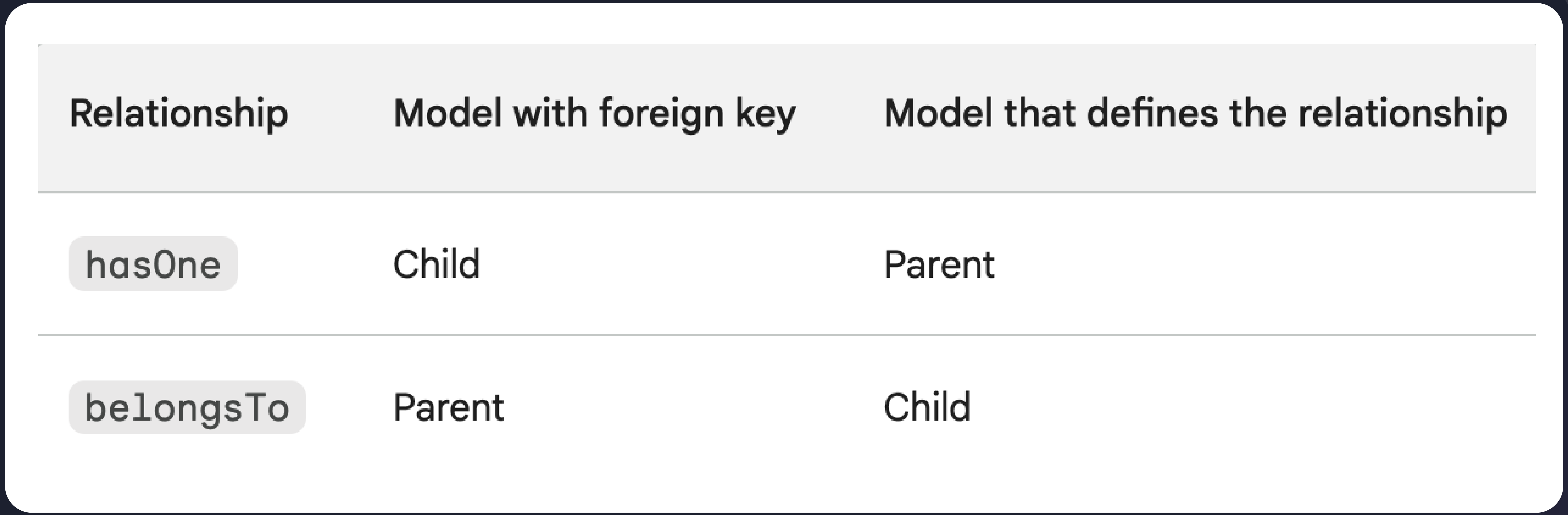
Has Relationship:

- It indicates that one model **"has"** one or more related models.
- The model that defines the relationship has the foreign key column. This means that the model that defines the relationship is the **"parent"** model, and the model that is related to it is the **"child"** model.

Belongs Relationship:

- The **"belongs"** relationship, also known as the **"inverse"** relationship, defines the inverse of a **"has"** relationship
- This means that the model that is related to the other model is the **"parent"** model, and the model that defines the relationship is the **"child"** model

Understanding Eloquent Relationship Term

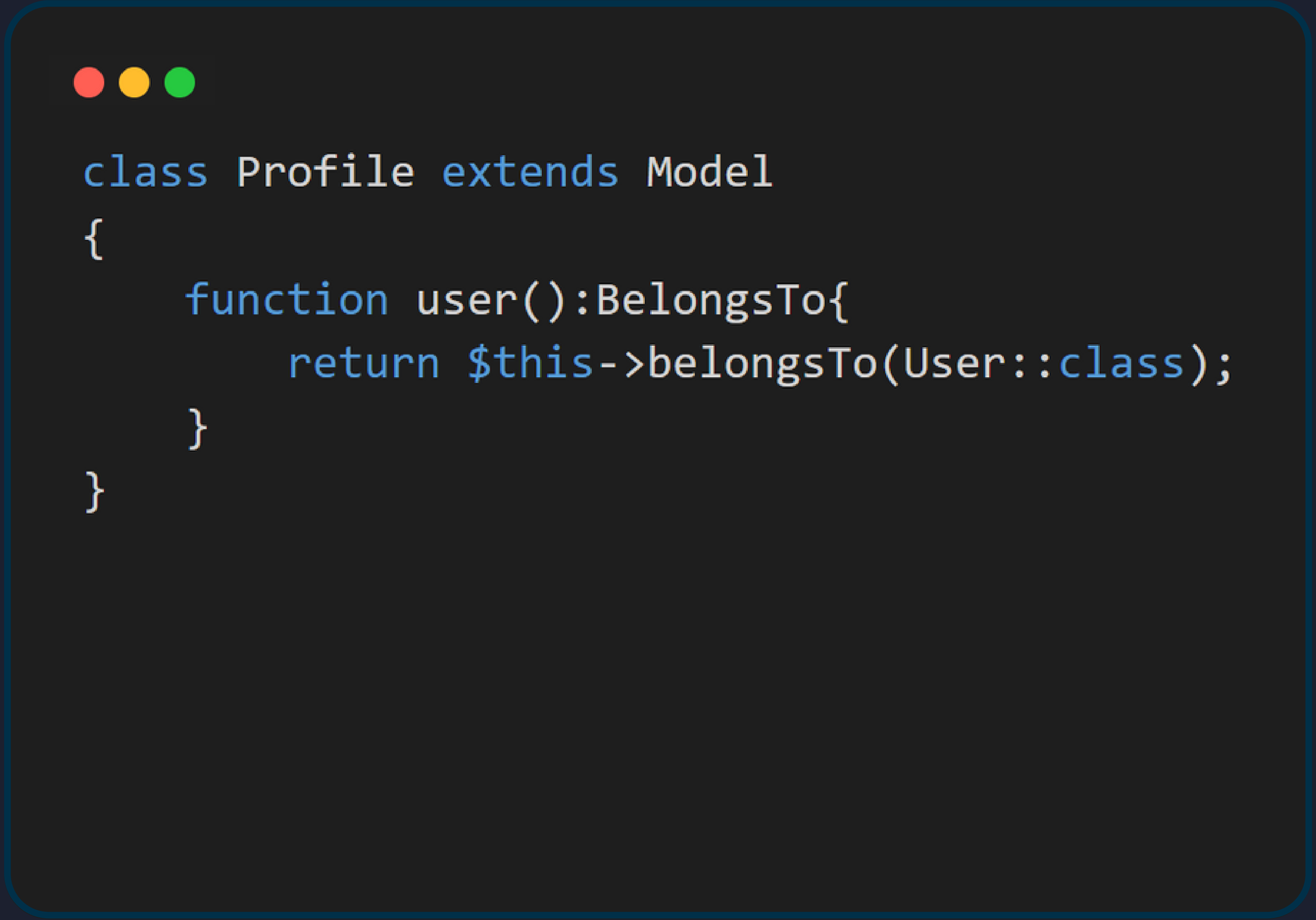


Relationship	Model with foreign key	Model that defines the relationship
`hasOne`	Child	Parent
`belongsTo`	Parent	Child

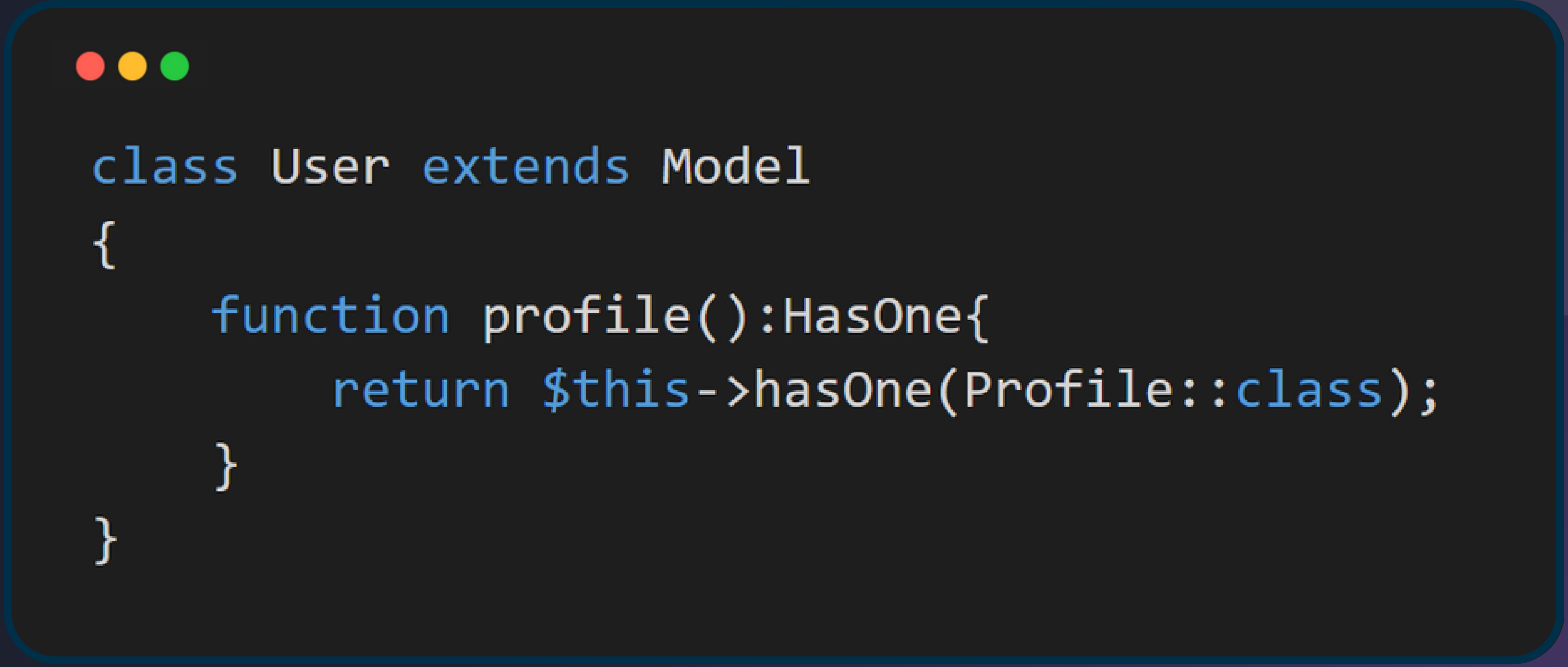
One to One & inverse Relationship

The **hasOne() method** in Laravel is used to define a **one-to-one** relationship between two models.

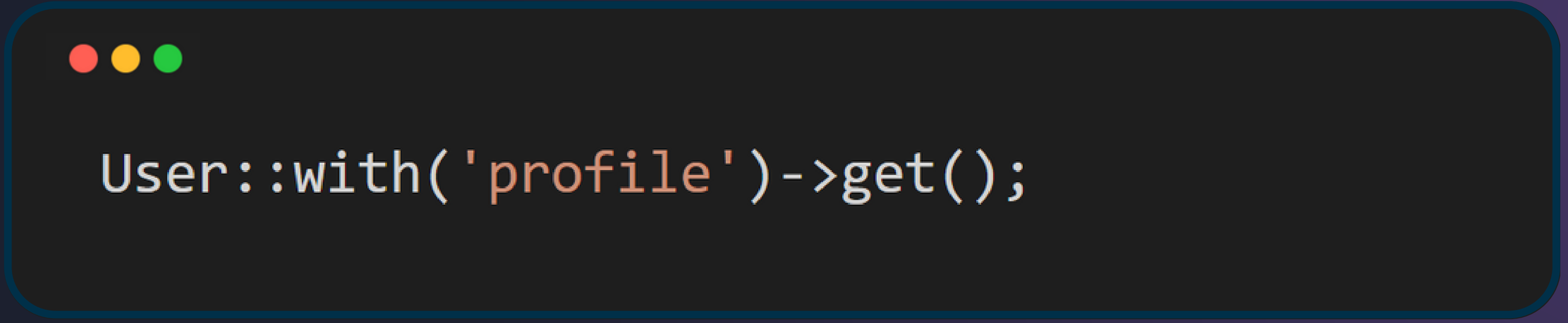
The **belongsTo() method** in Laravel is used to define a **one-to-one inverse** relationship between two models.



```
class Profile extends Model
{
    function user():BelongsTo{
        return $this->belongsTo(User::class);
    }
}
```



```
class User extends Model
{
    function profile():HasOne{
        return $this->hasOne(Profile::class);
    }
}
```

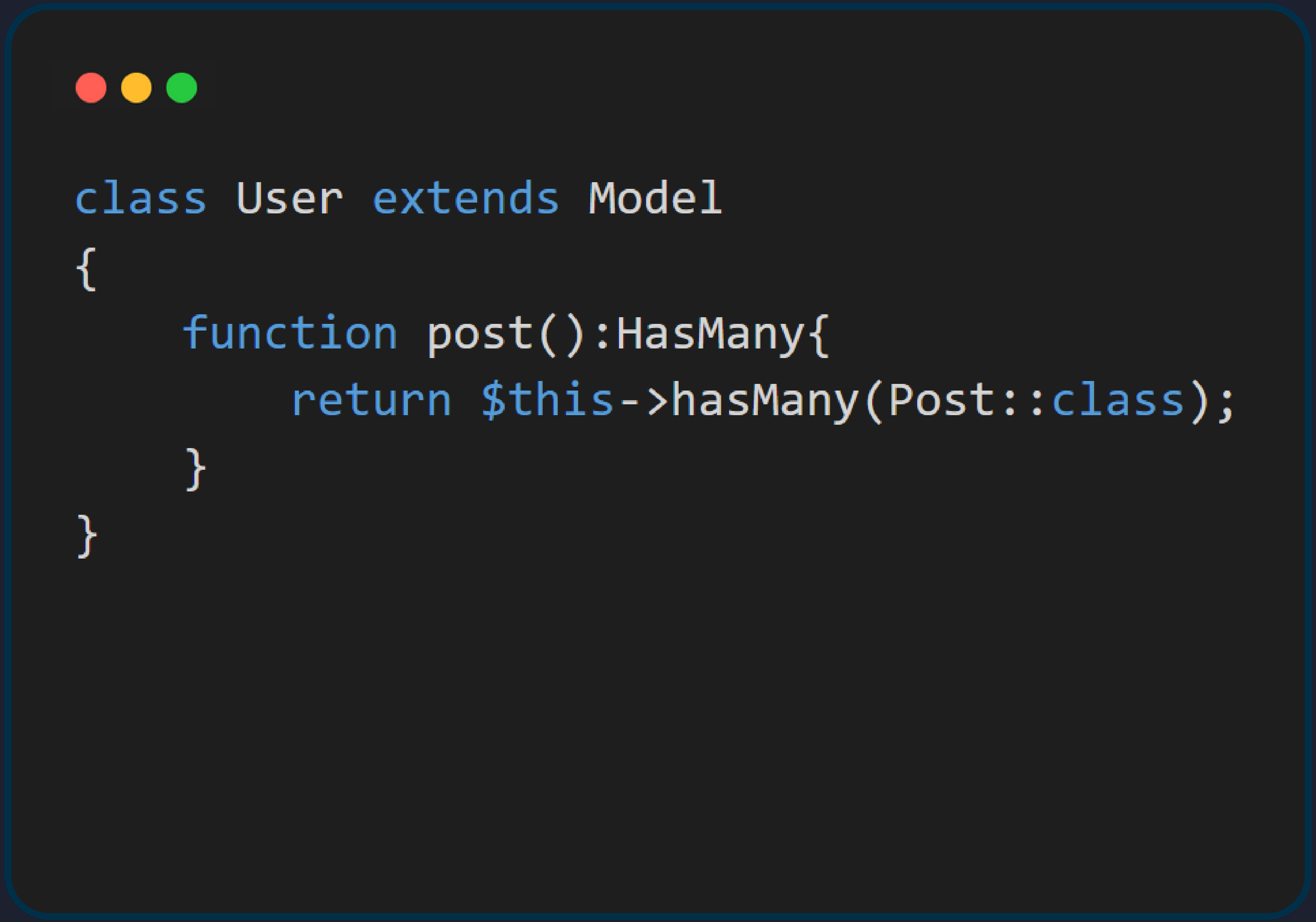


```
User::with('profile')->get();
```

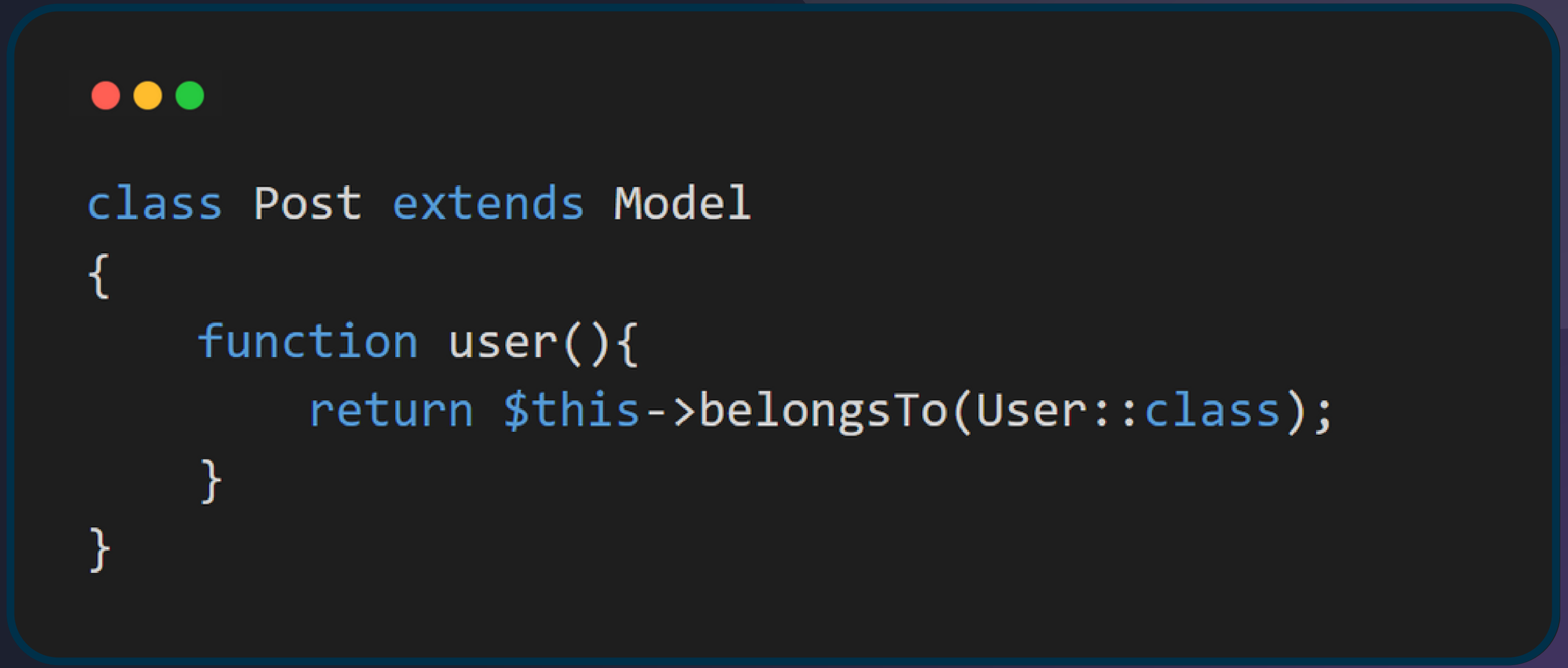
One to Many & inverse Relationship

The **hasMany() method** in Laravel is used to define a **one-to-many** relationship between two models.

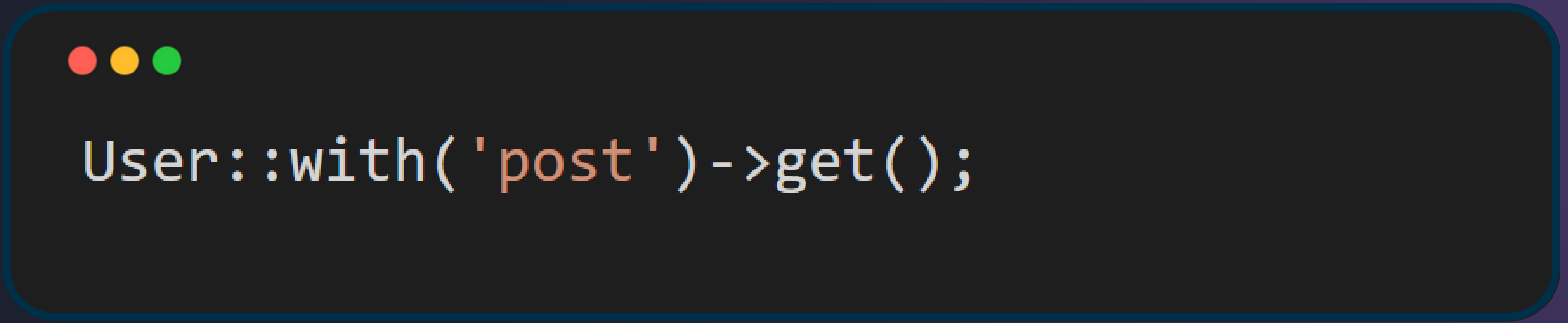
The **belongsTo() method** in Laravel is used to define a **one-to-many inver inversese** relationship between two models.



```
class User extends Model
{
    function post():HasMany{
        return $this->hasMany(Post::class);
    }
}
```



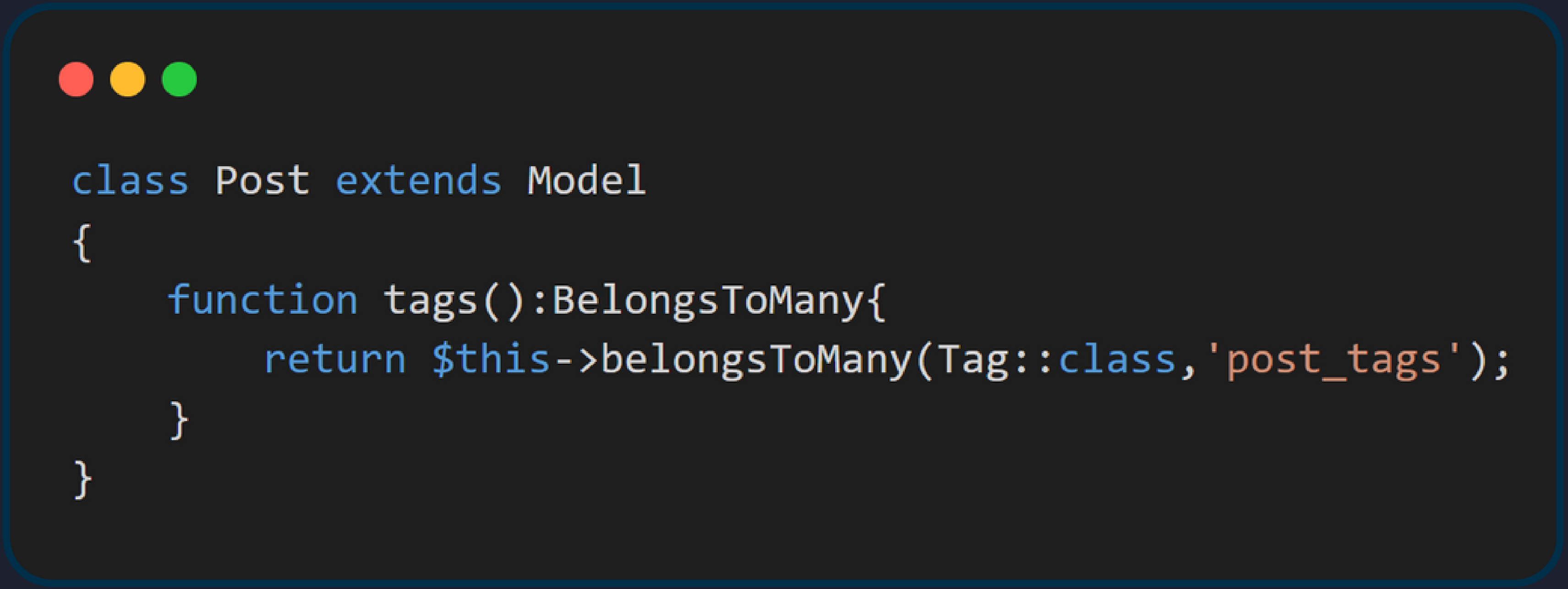
```
class Post extends Model
{
    function user(){
        return $this->belongsTo(User::class);
    }
}
```



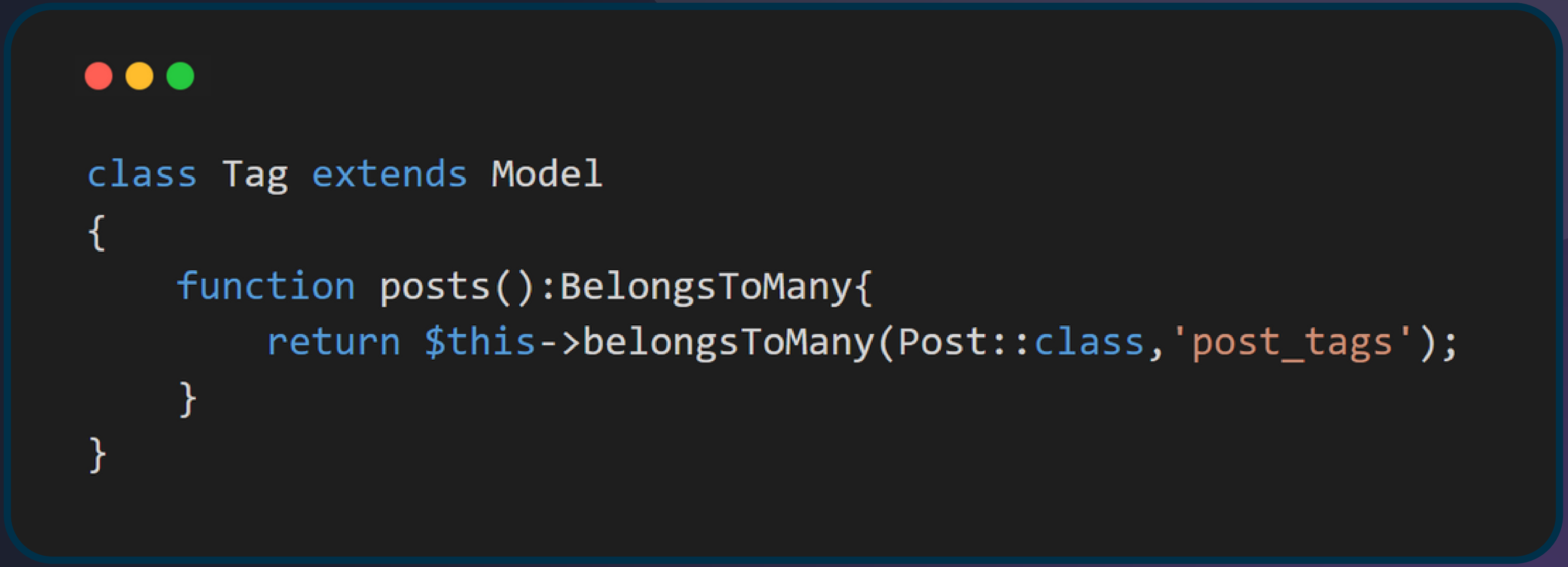
```
User::with('post')->get();
```

Many to Many Relationship

The **belongsToMany() method** in Laravel is used to define a **many-to-many** relationship between models.



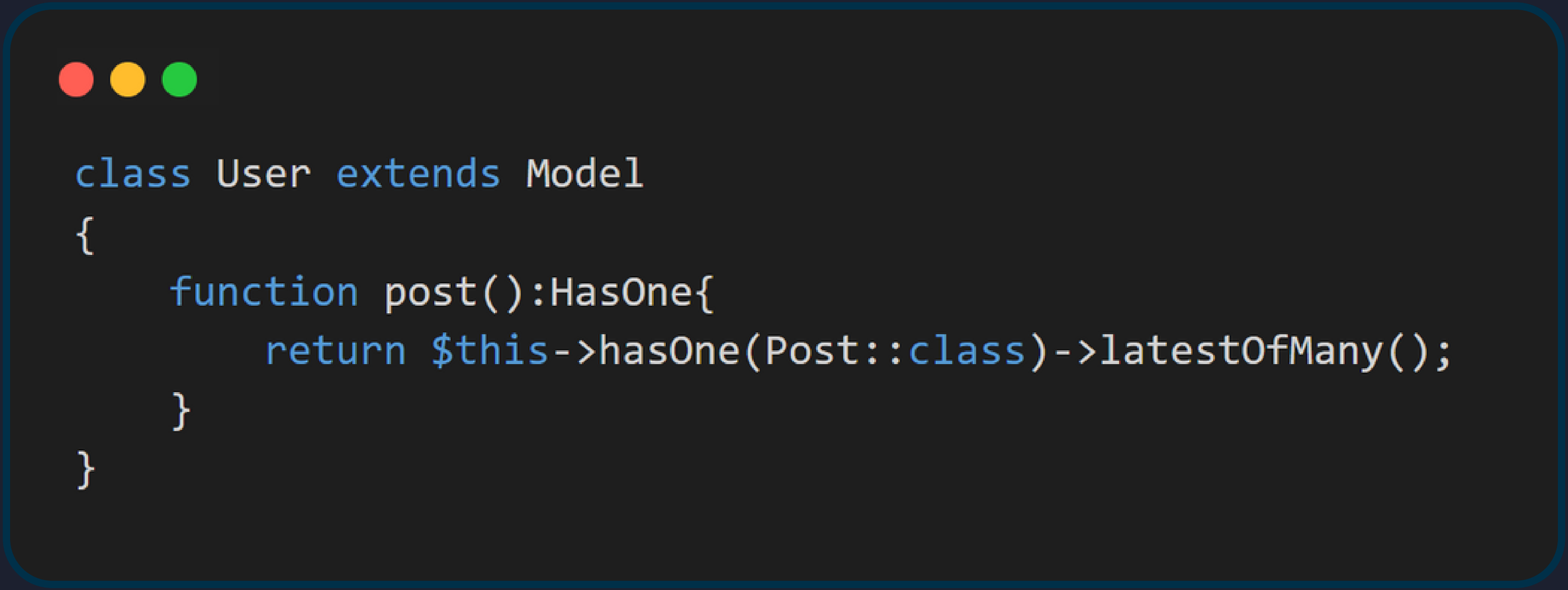
```php
class Post extends Model
{
    function tags():BelongsToMany{
        return $this->belongsToMany(Tag::class,'post_tags');
    }
}
```



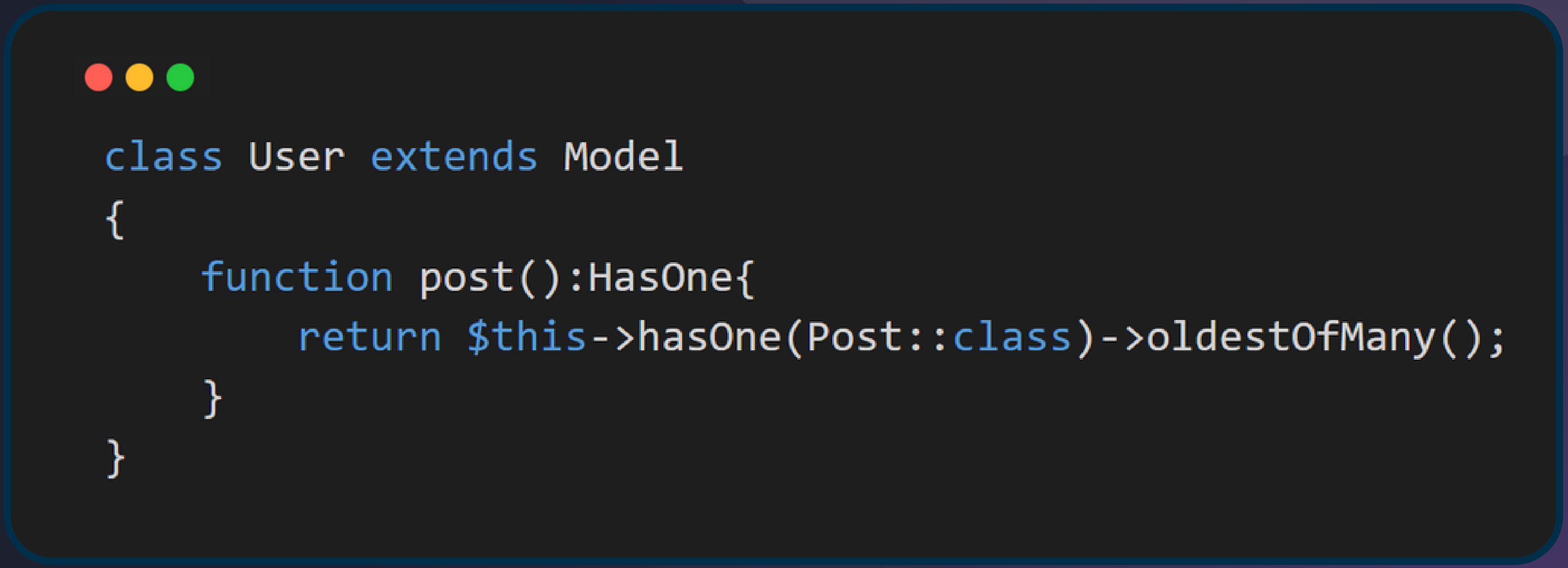
```php
class Tag extends Model
{
    function posts():BelongsToMany{
        return $this->belongsToMany(Post::class,'post_tags');
    }
}
```

Has One Of Many

latestOfMany and **oldestOfMany** methods will retrieve the latest or oldest related model based on the model's primary key, which must be sortable.



```php
class User extends Model
{
    function post():HasOne{
        return $this->hasOne(Post::class)->latestOfMany();
    }
}
```



```php
class User extends Model
{
    function post():HasOne{
        return $this->hasOne(Post::class)->oldestOfMany();
    }
}
```