Introduction

This quickstart guide provides a basic introduction to the Laravel framework and includes content on database migrations, the Eloquent ORM, routing, validation, views, and Blade templates.

Installation

Of course, first you will need a fresh installation of the Laravel framework. You may use the Homestead virtual machine or the local PHP environment of your choice to run the framework. Once your local environment is ready, you may install the Laravel framework using Composer:

```
composer create-project laravel/laravel quickstart --prefer-dist
```

You're free to just read along for the remainder of this quickstart; however, if you would like to download the source code for this quickstart and run it on your local machine, you may clone its Git repository and install its dependencies:

```
git clone https://github.com/laravel/quickstart-basic quickstart
cd quickstart
composer install
php artisan migrate
```

For more complete documentation on building a local Laravel development environment, check out the full Homestead and installation documentation.

Prepping The Database

Database Migrations

First, let's use a migration to define a database table to hold all of our tasks. Laravel's database migrations provide an easy way to define your database table structure and modifications using fluent, expressive PHP code. Instead of telling your team members to manually add columns to their local copy of the database, your teammates can simply run the migrations you push into source control.

So, let's build a database table that will hold all of our tasks. The Artisan CLI can be used to generate a variety of classes and will save you a lot of typing as you build your Laravel projects. In this case, let's use the `make:migration` command to generate a new database migration for our `tasks` table:

```
php artisan make:migration create_tasks_table --create=tasks
```

The migration will be placed in the `database/migrations` directory of your project. As you may have noticed, the `make:migration` command already added an auto-incrementing ID and timestamps to the migration file. Let's edit this file and add an additional `string` column for the name of our tasks:

```
<?php

use Illuminate\Database\Schema\Blueprint;
use Illuminate\Database\Migrations\Migration;

class CreateTasksTable extends Migration
{
    /**
     * Run the migrations.
     *
     * @return void
     */
    public function up()
    {
        Schema::create('tasks', function (Blueprint $table) {
            $table->increments('id');
            $table->string('name');
            $table->timestamps();
        });
    }
    /**
     * Reverse the migrations.
     *
     * @return void
     */
    public function down()
    {
        Schema::drop('tasks');
    }
}
```

To run our migration, we will use the `migrate` Artisan command. If you are using Homestead, you should run this command from within your virtual machine, since your host machine will not have direct access to the database:

```
php artisan migrate
```

This command will create all of our database tables. If you inspect the database tables using the database client of your choice, you should see a new `tasks` table which contains the columns defined in our migration. Next, we're ready to define an Eloquent ORM model for our tasks!

Eloquent Models

Eloquent is Laravel's default ORM (object-relational mapper). Eloquent makes it painless to retrieve and store data in your database using clearly defined "models". Usually, each Eloquent model corresponds directly with a single database table.

So, let's define a `Task` model that corresponds to our `tasks` database table we just created. Again, we can use an Artisan command to generate this model. In this case, we'll use the `make:model` command:

```
php artisan make:model Task
```

The model will be placed in the `app` directory of your application. By default, the model class is empty. We do not have to explicitly tell the Eloquent model which table it corresponds to because it will assume the database table is the plural form of the model name. So, in this case, the `Task` model is assumed to correspond with the `tasks` database table. Here is what our empty model should look like:

```
<?php


namespace App;


use Illuminate\Database\Eloquent\Model;


class Task extends Model
{
  //
}
```

We'll learn more about how to use Eloquent models as we add routes to our application. Of course, feel free to consult the complete Eloquent documentation for more information.

Routing

Stubbing The Routes

Next, we're ready to add a few routes to our application. Routes are used to point URLs to controllers or anonymous functions that should be executed when a user accesses a given page. By default, all Laravel routes are defined in the `app/Http/routes.php` file that is included in every new project.

For this application, we know we will need at least three routes: a route to display a list of all of our tasks, a route to add new tasks, and a route to delete existing tasks. So, let's stub all of these routes in the `app/Http/routes.php` file:

```
<?php


use App\Task;
use Illuminate\Http\Request;
```

```
/**
 * Display All Tasks
 */
Route::get('/', function () {
   //
});

/**
 * Add A New Task
 */
Route::post('/task', function (Request $request) {
   //
});

/**
 * Delete An Existing Task
 */
Route::delete('/task/{id}', function ($id) {
   //
});
```

Displaying A View

Next, let's fill out our `/` route. From this route, we want to render an HTML template that contains a form to add new tasks, as well as a list of all current tasks.

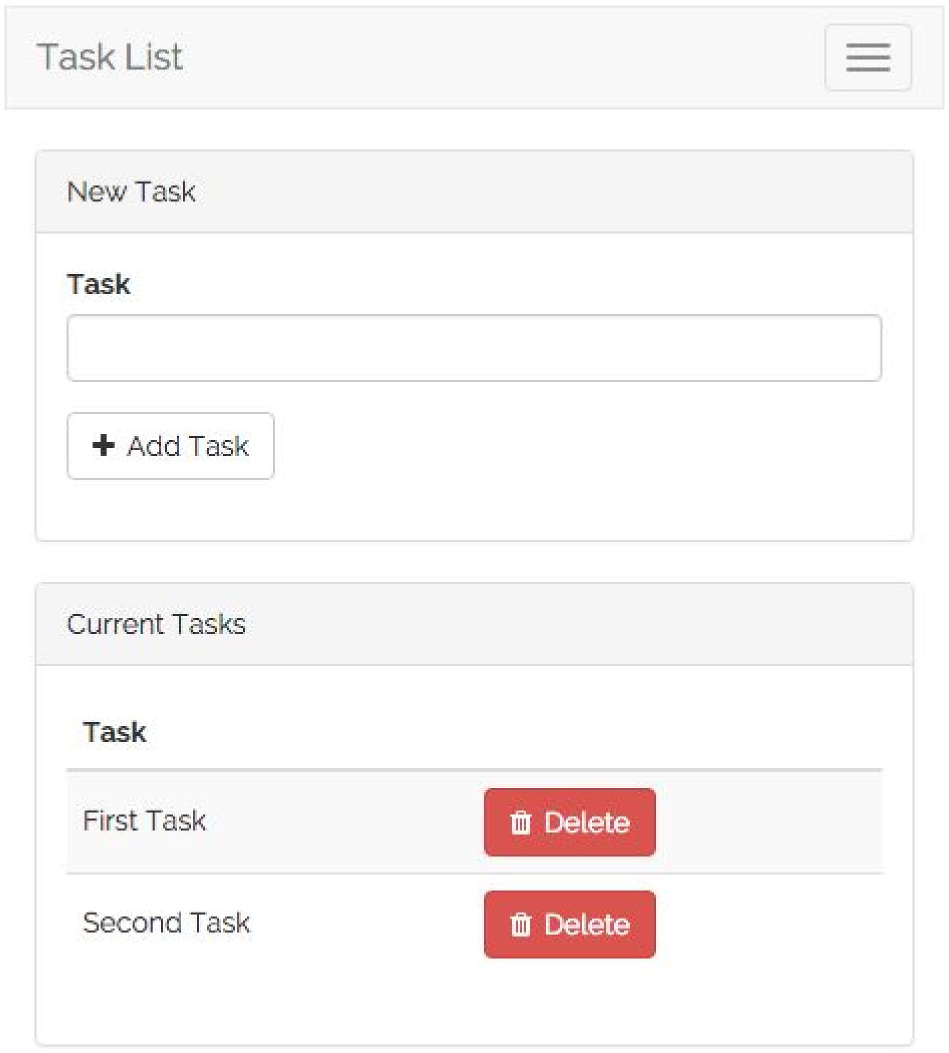
In Laravel, all HTML templates are stored in the `resources/views` directory, and we can use the `view` helper to return one of these templates from our route:

```
Route::get('/', function () {
    return view('tasks');
});
```

Of course, we need to actually define this view, so let's do that now!

Building Layouts & Views

This application only has a single view which contains a form for adding new tasks as well as a listing of all current tasks. To help you visualize the view, here is a screenshot of the finished application with basic Bootstrap CSS styling applied:



Defining The Layout

Almost all web applications share the same layout across pages. For example, this application has a top navigation bar that would be typically present on every page (if we had more than one). Laravel makes it easy to share these common features across every page using Blade **layouts**.

As we discussed earlier, all Laravel views are stored in `resources/views`. So, let's define a new layout view in `resources/views/layouts/app.blade.php`. The `.blade.php` extension instructs the framework to use the Blade templating engine to render the view. Of course, you may use plain PHP templates with Laravel. However, Blade provides convenient short-cuts for writing cleaner, terse templates.

Our `app.blade.php` view should look like the following:

```
// resources/views/layouts/app.blade.php

<!DOCTYPE html>
<html lang="en">
    <head>
        <title>Laravel Quickstart - Basic</title>

        <!-- CSS And JavaScript -->
    </head>

    <body>
        <div class="container">
            <nav class="navbar navbar-default">
                <!-- Navbar Contents -->
            </nav>
        </div>

        @yield('content')
    </body>
</html>
```

Note the `@yield('content')` portion of the layout. This is a special Blade directive that specifies where all child pages that extend the layout can inject their own content. Next, let's define the child view that will use this layout and provide its primary content.

Defining The Child View

Great, our application layout is finished. Next, we need to define a view that contains a form to create a new task as well as a table that lists all existing tasks. Let's define this view in `resources/views/tasks.blade.php`.

We'll skip over some of the Bootstrap CSS boilerplate and only focus on the things that matter. Remember, you can download the full source for this application on GitHub:

```
// resources/views/tasks.blade.php

@extends('layouts.app')

@section('content')

    <!-- Bootstrap Boilerplate... -->

    <div class="panel-body">
        <!-- Display Validation Errors -->
        @include('common.errors')

        <!-- New Task Form -->
        <form action="/task" method="POST" class="form-horizontal">
            {{ csrf_field() }}

            <!-- Task Name -->
            <div class="form-group">
                <label for="task" class="col-sm-3 control-label">Task</label>

                <div class="col-sm-6">
                    <input type="text" name="name" id="task-name" class="form-control">
                </div>
            </div>

            <!-- Add Task Button -->
            <div class="form-group">
                <div class="col-sm-offset-3 col-sm-6">
                    <button type="submit" class="btn btn-default">
                        <i class="fa fa-plus"></i> Add Task
                    </button>
                </div>
            </div>
        </form>
    </div>

    <!-- TODO: Current Tasks -->
@endsection
```

A Few Notes Of Explanation

Before moving on, let's talk about this template a bit. First, the `@extends` directive informs Blade that we are using the layout we defined at `resources/views/layouts/app.blade.php`. All of the content between `@section('content')` and `@endsection` will be injected into the location of the `@yield('content')` directive within the `app.blade.php` layout.

Now we have defined a basic layout and view for our application. Remember, we are returning this view from our `/` route like so:

```
Route::get('/', function () {
    return view('tasks');
});
```

Next, we're ready to add code to our `POST /task` route to handle the incoming form input and add a new task to the database.

Note: The @include('common.errors') directive will load the template located at resources/views/common/errors.blade.php. We haven't defined this template, but we will soon!

Adding Tasks

Validation

Now that we have a form in our view, we need to add code to our POST /task route to validate the incoming form input and create a new task. First, let's validate the input.

For this form, we will make the name field required and state that it must contain less than 255characters. If the validation fails, we will redirect the user back to the / URL, as well as flash the old input and errors into the session:

```
Route::post('/task', function (Request $request) {
    $validator = Validator::make($request->all(), [
        'name' => 'required|max:255',
    ]);

    if ($validator->fails()) {
        return redirect('/')
            ->withInput()
            ->withErrors($validator);
    }

   // Create The Task...
});
```

The $errors Variable

Let's take a break for a moment to talk about the `->withErrors($validator)` portion of this example. The `->withErrors($validator)` call will flash the errors from the given validator instance into the session so that they can be accessed via the `$errors` variable in our view.

Remember that we used the `@include('common.errors')` directive within our view to render the form's validation errors. The `common.errors` will allow us to easily show validation errors in the same format across all of our pages. Let's define the contents of this view now:

```
// resources/views/common/errors.blade.php


@if (count($errors) > 0)
    <!-- Form Error List -->
    <div class="alert alert-danger">
        <strong>Whoops! Something went wrong!</strong>


        <br><br>


        <ul>
            @foreach ($errors->all() as $error)
                <li>{{ $error }}</li>
            @endforeach
        </ul>
    </div>
@endif
```

Note: The `$errors` variable is available in **every** Laravel view. It will simply be an empty instance of `ViewErrorBag` if no validation errors are present.

Creating The Task

Now that input validation is handled, let's actually create a new task by continuing to fill out our route. Once the new task has been created, we will redirect the user back to the `/` URL. To create the task, we may use the `save` method after creating and setting properties on a new Eloquent model:

```
Route::post('/task', function (Request $request) {
    $validator = Validator::make($request->all(), [
        'name' => 'required|max:255',
    ]);

    if ($validator->fails()) {
        return redirect('/')
            ->withInput()
            ->withErrors($validator);
    }

    $task = new Task;
    $task->name = $request->name;
    $task->save();

    return redirect('/');
});
```

Great! We can now successfully create tasks. Next, let's continue adding to our view by building a list of all existing tasks.

Displaying Existing Tasks

First, we need to edit our `/` route to pass all of the existing tasks to the view. The `view`function accepts a second argument which is an array of data that will be made available to the view, where each key in the array will become a variable within the view:

```
Route::get('/', function () {
    $tasks = Task::orderBy('created_at', 'asc')->get();

    return view('tasks', [
        'tasks' => $tasks
    ]);
});
```

Once the data is passed, we can spin through the tasks in our `tasks.blade.php` view and display them in a table. The `@foreach` Blade construct allows us to write concise loops that compile down into blazing fast plain PHP code:

```
@extends('layouts.app')

@section('content')
    <!-- Create Task Form... -->

    <!-- Current Tasks -->
    @if (count($tasks) > 0)
        <div class="panel panel-default">
            <div class="panel-heading">
                Current Tasks
            </div>

            <div class="panel-body">
                <table class="table table-striped task-table">

                    <!-- Table Headings -->
                    <thead>
                        <th>Task</th>
                        <th>&nbsp;</th>
                    </thead>

                    <!-- Table Body -->
                    <tbody>
                        @foreach ($tasks as $task)
                            <tr>
                                <!-- Task Name -->
                                <td class="table-text">
                                    <div>{{ $task->name }}</div>
                                </td>

                                <td>
                                    <!-- TODO: Delete Button -->
                                </td>
                            </tr>
                        @endforeach
                    </tbody>
                </table>
            </div>
        </div>
    @endif
@endsection
```

Our task application is almost complete. But, we have no way to delete our existing tasks when they're done. Let's add that next!

Deleting Tasks

Adding The Delete Button

We left a "TODO" note in our code where our delete button is supposed to be. So, let's add a delete button to each row of our task listing within the `tasks.blade.php` view. We'll create a small single-button form for each task in the list. When the button is clicked, a `DELETE /task`request will be sent to the application:

```
<tr>
    <!-- Task Name -->
    <td class="table-text">
        <div>{{ $task->name }}</div>
    </td>
    <!-- Delete Button -->
    <td>
        <form action="/task/{{ $task->id }}" method="POST">
            {{ csrf_field() }}
            {{ method_field('DELETE') }}

            <button>Delete Task</button>
        </form>
    </td>
</tr>
```

A Note On Method Spoofing

Note that the delete button's form `method` is listed as `POST`, even though we are responding to the request using a `Route::delete` route. HTML forms only allow the `GET` and `POST` HTTP verbs, so we need a way to spoof a `DELETE` request from the form.

We can spoof a `DELETE` request by outputting the results of the `method_field('DELETE')`function within our form. This function generates a hidden form input that Laravel recognizes and will use to override the actual HTTP request method. The generated field will look like the following:

```
<input type="hidden" name="_method" value="DELETE">
```

Deleting The Task

Finally, let's add logic to our route to actually delete the given task. We can use the Eloquent `findOrFail` method to retrieve a model by ID or throw a 404 exception if the model does not exist. Once we retrieve the model, we will use the `delete` method to delete the record. Once the record is deleted, we will redirect the user back to the `/` URL:

```
Route::delete('/task/{id}', function ($id) {
    Task::findOrFail($id)->delete();

    return redirect('/');
});
```