CakePHP - Quick Guide

CakePHP - Overview

CakePHP is an open source MVC framework. It makes developing, deploying and maintaining applications much easier. CakePHP has a number of libraries to reduce the overload of most common tasks.

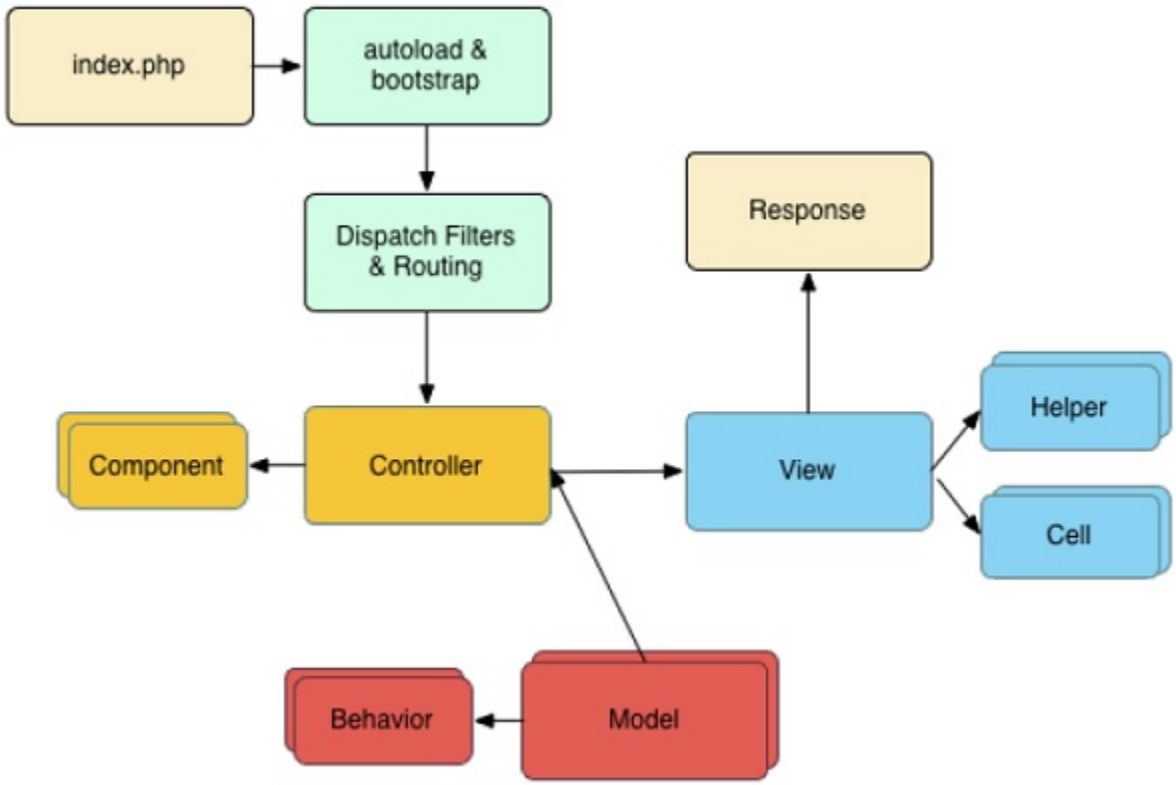
Advantages of CakePHP

The advantages of using CakePHP are listed below –

- Open Source
- MVC Framework
- Templating Engine
- Caching Operations
- Search Engine Friendly URLs
- Easy CRUD (Create, Read, Update, Delete) Database Interactions.
- Libraries and Helpers
- Built-in Validation
- Localisation
- Email, Cookie, Security, Session, and Request Handling Components
- View Helpers for AJAX, JavaScript, HTML Forms and More

CakePHP Request Cycle

The following illustration describes how a Request Lifecycle in CakePHP works –



A typical CakePHP request cycle starts with a user requesting a page or resource in your application. At high level, each request goes through the following steps –

- The webserver rewrite rules direct the request to webroot / index.php.
- Your application's autoloader and bootstrap files are executed.
- Any **dispatch filters** that are configured can handle the request, and optionally generate a response.
- The dispatcher selects the appropriate controller and action based on routing rules.
- The controller's action is called and the controller interacts with the required Models and Components.
- The controller delegates response creation to the **View** to generate the output resulting from the model data.
- The view uses **Helpers** and **Cells** to generate the response body and headers.
- The response is sent back to the client.

CakePHP - Installation

In this chapter, we will show the installation of CakePHP 4.0.3. The minimum PHP version that we need to install is **PHP 7.3**.

You need to have PHP 7.3 and Composer to be installed before starting the installation of cakePHP.

For **Windows** users, install or update WAMP server with PHP version > 7.3.

Go to www.wampserver.com/en/download-wampserver-64bits/ and install it.

For Linux users, kindly refer Tutorials Point website which is available at www.tutorialspoint.com/php7/php7_installation_linux.htm for installation of PHP .

Installing Composer

Go to composer at https://getcomposer.org/download/ and click on download as per the operating system (OS) of your computer and install composer on your system. Add the location to PATH variable for windows users, so that you can use composer from any directory.

Once you are done installing composer, let us now start to install CakePHP.

Installing CakePHP

Go to the folder where wamp is located for windows users and in www/ folder, create a folder **cakephp4/.**

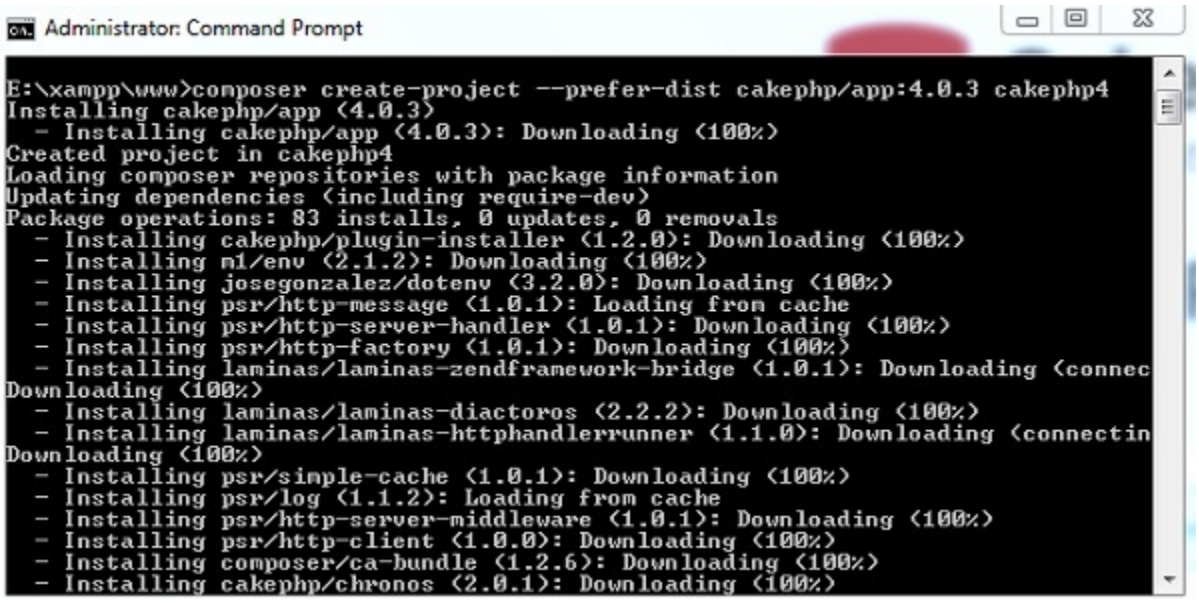
For Linux users, create the folder **var/www/html/** and then create folder **cakephp4/**.

- cakephp4/ is the folder where we are going to install CakePHP.

Use composer to execute the following command –

```
composer create-project --prefer-dist cakephp/app:4.0.3 cakephp4
```

This is what you should see, when the command executes –



Once the installation is complete, use localhost to open your project in browser.

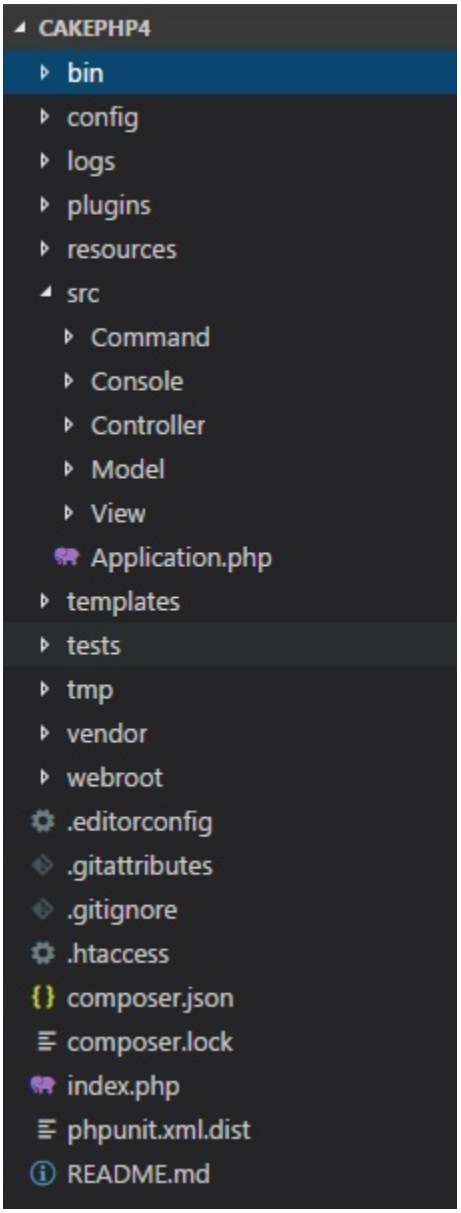
The Path for the same is http://localhost/cakephp.

CakePHP - Folder Structure

Here, we will learn about the Folder structure and the Naming Convention in CakePHP. Let us begin by understanding the Folder structure.

Folder Structure

Take a look at the following screenshot. It shows the folder structure of CakePHP.



The following table describes the role of each folder in CakePHP –

Sr.No	Folder Name & Description
1	**bin** The **bin** folder holds the Cake console executables.
2	**config** The **config** folder holds the (few) configuration files CakePHP uses. Database connection details, bootstrapping, core configuration files and more should be stored here.
3	**logs** The **logs** folder normally contains your log files, depending on your log configuration.
4	**plugins** The plugins folder is where the Plugins of your application uses are stored.
5	**resources** The files for internationalization in the respective locale folder will be stored here. E.g. locales/en_US.
6	**src** The **src** folder will be where you work your magic. It is where your application's files will be placed and you will do most of your application development. Let's look a little closer at the folders inside src. • Console – Contains the console commands and console tasks for your application. • Controller – Contains your application's controllers and their components. • Model – Contains your application's tables, entities and behaviors. • View Presentational classes are placed here: cells, helpers, and template files.
7	**templates** Template Presentational files are placed here: elements, error pages, layouts, and view template files.

8	**tests** The **tests** folder will be where you put the test cases for your application.
9	**tmp** The **tmp** folder is where CakePHP stores temporary data. The actual data it stores depends on how you have CakePHP configured, but this folder is usually used to store model descriptions and sometimes session information.
10	**vendor** The **vendor** folder is where CakePHP and other application dependencies will be installed. Make a personal commitment not to edit files in this folder. We can't help you, if you've modified the core.
11	**webroot** The **webroot** directory is the public document root of your application. It contains all the files you want to be publically reachable.

Naming Convention

Naming convention is not something mandatory to be followed, but is a good coding practice and will be very helpful as your project goes big.

Controller Convention

The controller class name has to be plural, PascalCased and the name has to end with Controller. For example, for Students class the name of the controller can be **StudentsController**. Public methods on Controllers are often exposed as 'actions' accessible through a web browser.

For example, the /users /view maps to the **view()** method of the UsersController out of the box. Protected or private methods cannot be accessed with routing.

File and Class Name Convention

Mostly, we have seen that our class name file name is almost the same. This is similar in cakephp.

For example, the class StudentsController will have the file named as StudentsController.php. The files have to be saved as the module name and in the respective folders in app folder.

Database Conventions

The tables used for CakePHP models, mostly have names plural with underscore.

For example, student_details, student_marks. The field name has an underscore, if it is made up of two words, for example, first_name, last_name.

Model Conventions

For model, the classes are named as per database table, the names are plural, PascalCased and suffixed with Table.

For example, StudentDetailsTable, StudentMarksTable

View Conventions

For view templates, the files are based on controller functions.

For example, if the class StudentDetailsController has function showAll(), the view template will be named as show_all.php and saved inside template/yrmodule/show_all.php.

CakePHP - Project Configuration

In this chapter, we will understand the **Environment Variables, General Configuration, Database Configuration** and **Email Configuration** in CakePHP.

Configuration CakePHP comes with one configuration file by default, and we can modify it according to our needs. There is one dedicated folder **"config"** for this purpose. CakePHP comes with different configuration options.

Let us start by understanding the Environment Variables in CakePHP.

Environment Variables

Environment variables make the working of your application on different environments easy. For example, on dev server, test server, staging server and production server environment. For all these environments, you can make use of **env() function** to read the configuration for the environment you need and build your application.

In your config folder, you will come across config/.env.example. This file has all the variables that will be changed based on your environment. To start with, you can create a file in config folder i.e. config/.env and define those variables and use them. In case you need any additional variables, it can go in that file.

You can read your environment variable using env() function as shown below –

Example

```
$debug = env('APP_DEBUG', false);
```

The first one is the name of the environment variable you want and second value is the default value. The default value is used, if there is no value found for the environment variable.

General Configuration

The following table describes the role of various variables and how they affect your CakePHP application.

Sr.No	Variable Name & Description
1	**debug** Changes CakePHP debugging output. **false** = Production mode. No error messages, errors, or warnings shown. **true** = Errors and warnings shown.
2	**App.namespace** The namespace to find app classes under.
3	**App.baseUrl** Un-comment this definition, if you don't plan to use Apache's mod_rewrite with CakePHP. Don't forget to remove your .htaccess files too.
4	**App.base** The base directory the app resides in. If false, this will be auto detected.
5	**App.encoding** Define what encoding your application uses. This encoding is used to generate the charset in the layout, and encode entities. It should match the encoding values specified for your database.
6	**App.webroot** The webroot directory.
7	**App.wwwRoot** The file path to webroot.
8	**App.fullBaseUrl** The fully qualified domain name (including protocol) to your application's root.
9	**App.imageBaseUrl**

	Web path to the public images directory under webroot.
10	**App.cssBaseUrl** Web path to the public css directory under webroot.
11	**App.jsBaseUrl** Web path to the public js directory under webroot.
12	**App.paths** Configure paths for non-class based resources. Supports the **plugins, templates, locales, subkeys,** which allow the definition of paths for plugins, view templates and locale files respectively.
13	**Security.salt** A random string used in hashing. This value is also used as the HMAC salt when doing symmetric encryption.
14	**Asset.timestamp** Appends a timestamp, which is last modified time of the particular file at the end of asset files URLs (CSS, JavaScript, Image) when using proper helpers. The valid values are – • (bool) false - Doesn't do anything (default). • (bool) true - Appends the timestamp, when debug is true. • (string) 'force' - Always appends the timestamp.

Databases Configuration

Database can be configured in **config/app.php and config/app_local.php** file. This file contains a default connection with provided parameters, which can be modified as per our choice.

The below snippet shows the default parameters and values, which should be modified as per the requirement.

Config/app_local.php

```
*/
    'Datasources' => [
        'default' => [
            'host' => 'localhost',
            'username' => 'my_app',
            'password' => 'secret',
            'database' => 'my_app',
            'url' => env('DATABASE_URL', null),
        ],
        /*
            * The test connection is used during the test suite.
        */
        'test' => [
            'host' => 'localhost',
            //'port' => 'non_standard_port_number',
            'username' => 'my_app',
            'password' => 'secret',
            'database' => 'test_myapp',
            //'schema' => 'myapp',
        ],
    ],
```

Let us understand each parameter in detail in **config/app_local.php**.

Host	The database server's hostname (or IP address).
username	Database username
password	Database password.
database	Name of Database.
Port	The TCP port or Unix socket used to connect to the server.

config/app.php

```
'Datasources' => [
    'default' => [
```

```
        'className' => Connection::class,
        'driver' => Mysql::class,
        'persistent' => false,
        'timezone' => 'UTC',
        //'encoding' => 'utf8mb4',
        'flags' => [],
        'cacheMetadata' => true,
        'log' => false,
        'quoteIdentifiers' => false,
        //'init' => ['SET GLOBAL innodb_stats_on_metadata = 0'],
    ],
];
```

Let us understand each parameter in detail in **config/app.php**.

log

Sr.No	Key & Description
1	**className** The fully namespaced class name of the class that represents the connection to a database server. This class is responsible for loading the database driver, providing SQL transaction mechanisms and preparing SQL statements among other things.
2	**driver** The class name of the driver used to implement all specificities for a database engine. This can either be a short classname using plugin syntax, a fully namespaced name, or a constructed driver instance. Examples of short classnames are Mysql, Sqlite, Postgres, and Sqlserver.
3	**persistent** Whether or not to use a persistent connection to the database.
4	**encoding** Indicates the character set to use, when sending SQL statements to the server like 'utf8' etc.
5	**timezone** Server timezone to set.
6	**init** A list of queries that should be sent to the database server as and when the connection is created.
7	**log** Set to true to enable query logging. When enabled queries will be logged at a debug level with the queriesLog scope.
8	**quoteIdentifiers** Set to true, if you are using reserved words or special characters in your table or column names. Enabling this setting will result in queries built using the Query Builder having identifiers quoted when creating SQL. It decreases performance.

9	**flags** An associative array of PDO constants that should be passed to the underlying PDO instance.
10	**cacheMetadata** Either boolean true, or a string containing the cache configuration to store meta data in. Having metadata caching disable is not advised and can result in very poor performance.

Email Configuration

Email can be configured in file **config/app.php**. It is not required to define email configuration in config/app.php. Email can be used without it. Just use the respective methods to set all configurations separately or load an array of configs. Configuration for Email defaults is created using **config()** and **configTransport()**.

Email Configuration Transport

By defining transports separately from delivery profiles, you can easily re-use transport configuration across multiple profiles. You can specify multiple configurations for production, development and testing. Each transport needs a className. Valid options are as follows –

- **Mail** – Send using PHP mail function
- **Smtp** – Send using SMTP
- **Debug** – Do not send the email, just return the result

You can add custom transports (or override existing transports) by adding the appropriate file to **src/Mailer/Transport**. Transports should be named **YourTransport.php**, where **'Your'** is the name of the transport.

Following is the example of Email configuration transport.

```
'EmailTransport' => [
   'default' => [
      'className' => 'Mail',
      // The following keys are used in SMTP transports
      'host' => 'localhost',
      'port' => 25,
      'timeout' => 30,
      'username' => 'user',
      'password' => 'secret',
```

```
        'client' => null,
        'tls' => null,
        'url' => env('EMAIL_TRANSPORT_DEFAULT_URL', null),
    ],
],
```

Email Delivery Profiles

Delivery profiles allow you to predefine various properties about email messages from your application, and give the settings a name. This saves duplication across your application and makes maintenance and development easier. Each profile accepts a number of keys.

Following is an example of Email delivery profiles.

```
'Email' => [
    'default' => [

        'transport' => 'default',
        'from' => 'you@localhost',
    ],
],
```

CakePHP - Routing

In this chapter, we are going to learn the following topics related to routing –

- Introduction to Routing
- Connecting Routes
- Passing Arguments to Routes
- Generating urls
- Redirect urls

Introduction to Routing

In this section, we will see how you can implement routes, how you can pass arguments from URL to controller's action, how you can generate URLs, and how you can redirect to a specific URL. Normally, routes are implemented in file **config/routes.php**. Routing can be implemented in two ways –

- static method
- scoped route builder

Here, is an example presenting both the types.

```
// Using the scoped route builder.
Router::scope('/', function ($routes) {
   $routes->connect('/', ['controller' => 'Articles', 'action' => 'index']);
});
// Using the static method.
Router::connect('/', ['controller' => 'Articles', 'action' => 'index']);
```

Both the methods will execute the index method of **ArticlesController**. Out of the two methods, **scoped route builder** gives better performance.

Connecting Routes

Router::connect() method is used to connect routes. The following is the syntax of the method –

```
static Cake\Routing\Router::connect($route, $defaults =[], $options =[])
```

There are three arguments to the **Router::connect()** method –

- The first argument is for the URL template you wish to match.
- The second argument contains default values for your route elements.
- The third argument contains options for the route, which generally contains regular expression rules.

Here, is the basic format of a route –

```
$routes->connect(
   'URL template',
   ['default' => 'defaultValue'],
   ['option' => 'matchingRegex']
);
```

Example

Make changes in the **config/routes.php** file as shown below.

config/routes.php

```
<?php
use Cake\Http\Middleware\CsrfProtectionMiddleware;
use Cake\Routing\Route\DashedRoute;
use Cake\Routing\RouteBuilder;
$routes->setRouteClass(DashedRoute::class);
$routes->scope('/', function (RouteBuilder $builder) {
```

```
    // Register scoped middleware for in scopes.
       $builder->registerMiddleware('csrf', new CsrfProtectionMiddleware([
       'httpOnly' => true,
    ]));
    $builder->applyMiddleware('csrf');
    $builder->connect('/', ['controller' => 'Tests', 'action' => 'show']);
    $builder->connect('/pages/*', ['controller' => 'Pages', 'action' => 'display']);
    $builder->fallbacks();
});
```

Create a **TestsController.php** file at **src/Controller/TestsController.php.** Copy the following code in the controller file.

src/Controller/TestsController.php

```
<?php
declare(strict_types=1);
namespace App\Controller;
use Cake\Core\Configure;
use Cake\Http\Exception\ForbiddenException;
use Cake\Http\Exception\NotFoundException;
use Cake\Http\Response;
use Cake\View\Exception\MissingTemplateException;
class TestsController extends AppController {
    public function show()
    {
    }
}
```

Create a folder **Tests** under **src/Template** and under that folder, create a **View file** called show.php. Copy the following code in that file.

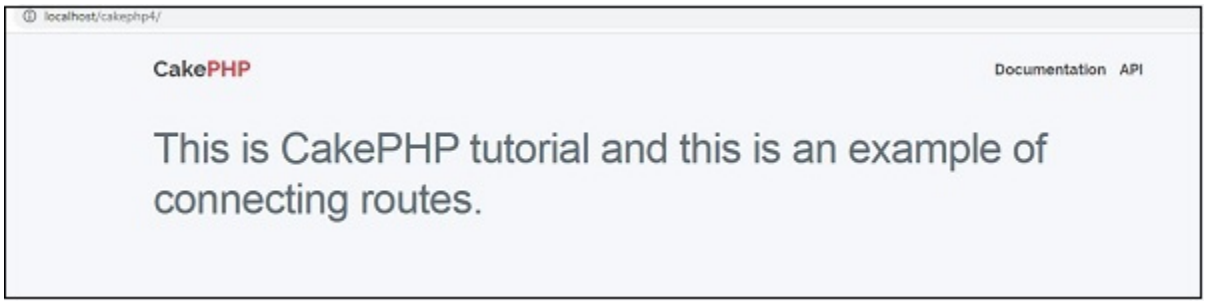
src/Template/Tests/show.php

```
<h1>This is CakePHP tutorial and this is an example of connecting routes.</h1>
```

Execute the above example by visiting the following URL which is available at http://localhost/cakephp4/

Output

The above URL will yield the following output.



Passed Arguments

Passed arguments are the arguments which are passed in the URL. These arguments can be passed to controller's action. These passed arguments are given to your controller in three ways.

As arguments to the action method

Following example shows, how we can pass arguments to the action of the controller. Visit the following URL at http://localhost/cakephp4/tests/value1/value2

This will match the following route line.

```
$builder->connect('tests/:arg1/:arg2', ['controller' => 'Tests', 'action' => 'show'],['pass' => ['a
```

Here, the value1 from URL will be assigned to arg1 and value2 will be assigned to arg2.

As numericallyindexed array

Once the argument is passed to the controller's action, you can get the argument with the following statement.

```
$args = $this->request->params[‘pass’]
```

The arguments passed to controller's action will be stored in $args variable.

Using routing array

The argument can also be passed to action by the following statement –

```
$routes->connect('/', ['controller' => 'Tests', 'action' => 'show',5,6]);
```

The above statement will pass two arguments 5, and 6 to TestController's show() method.

Example

Make Changes in the **config/routes.php** file as shown in the following program.

config/routes.php

```
<?php
use Cake\Http\Middleware\CsrfProtectionMiddleware;
use Cake\Routing\Route\DashedRoute;
use Cake\Routing\RouteBuilder;
$routes->setRouteClass(DashedRoute::class);
$routes->scope('/', function (RouteBuilder $builder) {
// Register scoped middleware for in scopes.
$builder->registerMiddleware('csrf', new CsrfProtectionMiddleware([
      'httpOnly' => true,
   ]));
   $builder->applyMiddleware('csrf');
   $builder->connect('tests/:arg1/:arg2', ['controller' => 'Tests', 'action' => 'show'],['pass
   $builder->connect('/pages/*', ['controller' => 'Pages', 'action' => 'display']);
   $builder->fallbacks();
});
```

Create a **TestsController.php** file at **src/Controller/TestsController.php.** Copy the following code in the controller file.

src/Controller/TestsController.php

```
<?php
declare(strict_types=1);
namespace App\Controller;
use Cake\Core\Configure;
use Cake\Http\Exception\ForbiddenException;
use Cake\Http\Exception\NotFoundException;
use Cake\Http\Response;
use Cake\View\Exception\MissingTemplateException;
class TestsController extends AppController {
public function show($arg1, $arg2) {
      $this->set('argument1',$arg1);
      $this->set('argument2',$arg2);
   }
}
```

Create a folder **Tests** at **src/Template** and under that folder create a **View** file called show.php. Copy the following code in that file.

src/Template/Tests/show.php.

```
<h1>This is CakePHP tutorial and this is an example of Passed arguments.</h1>
<?php
```

```
   echo "Argument-1:".$argument1."<br/>";
   echo "Argument-2:".$argument2."<br/>";
?>
```

Execute the above example by visiting the following URL http://localhost/cakephp4/tests/Virat/Kunal

Output

Upon execution, the above URL will produce the following output.

Generating URLs

This is a cool feature of CakePHP. Using the generated URLs, we can easily change the structure of URL in the application without modifying the whole code.

```
url( string|array|null $url null , boolean $full false )
```

The above function will take two arguments –

- The first argument is an array specifying any of the following - **'controller', 'action', 'plugin'**. Additionally, you can provide routed elements or query string parameters. If string, it can be given the name of any valid url string.
- If true, the full base URL will be prepended to the result. Default is false.

Example

Make Changes in the **config/routes.php** file as shown in the following program.

config/routes.php

```
<?php
use Cake\Http\Middleware\CsrfProtectionMiddleware;
use Cake\Routing\Route\DashedRoute;
use Cake\Routing\RouteBuilder;
$routes->setRouteClass(DashedRoute::class);
```

```
$routes->scope('/', function (RouteBuilder $builder) {
   // Register scoped middleware for in scopes.
   $builder->registerMiddleware('csrf', new CsrfProtectionMiddleware([
      'httpOnly' => true,
   ]));
   $builder->applyMiddleware('csrf');
   $builder->connect('/generate',['controller'=>'Generates','action'=>'show']);
   $builder->fallbacks();
});
```

Create a **GeneratesController.php** file at **src/Controller/GeneratesController.php.** Copy the following code in the controller file.

src/Controller/GeneratesController.php

```
<?php
declare(strict_types=1);
namespace App\Controller;
21
use Cake\Core\Configure;
use Cake\Http\Exception\ForbiddenException;
use Cake\Http\Exception\NotFoundException;
use Cake\Http\Response;
use Cake\View\Exception\MissingTemplateException;
class GeneratesController extends AppController {
   public function show()
   {
   }
}
```

Create a folder **Generates at src/Template** and under that folder, create a **View** file called show.php. Copy the following code in that file.

src/Template/Generates/show.php

```
<h1>This is CakePHP tutorial and this is an example of Generating URLs<h1>
```

Execute the above example by visiting the following URL –

http://localhost/cakephp4/generate

Output

The above URL will produce the following output –

Redirect Routing

Redirect routing is useful, when we want to inform client applications that, this URL has been moved. The URL can be redirected using the following function –

```
static Cake\Routing\Router::redirect($route, $url, $options =[])
```

There are three arguments to the above function as follows –

- A string describing the template of the route.
- A URL to redirect to.
- An array matching the named elements in the route to regular expressions which that element should match.

Example

Make Changes in the **config/routes.php** file as shown below. Here, we have used controllers that were created previously.

config/routes.php

```
<?php
use Cake\Http\Middleware\CsrfProtectionMiddleware;
use Cake\Routing\Route\DashedRoute;
use Cake\Routing\RouteBuilder;
$routes->setRouteClass(DashedRoute::class);
$routes->scope('/', function (RouteBuilder $builder) {
   // Register scoped middleware for in scopes.
   $builder->registerMiddleware('csrf', new CsrfProtectionMiddleware([
      'httpOnly' => true,
   ]));
   $builder->applyMiddleware('csrf');
   $builder->connect('/generate',['controller'=>'Generates','action'=>'show']);
   $builder->redirect('/redirect','https://tutorialspoint.com/');
```

```
    $builder->fallbacks();
});
```

Execute the above example by visiting the following URLs.

URL 1 – http://localhost/cakephp4/generate

Output for URL 1

URL 2 – http://localhost/cakephp4/redirect

Output for URL 2

You will be redirected to https://tutorialspoint.com

CakePHP - Controllers

The controller as the name indicates controls the application. It acts like a bridge between models and views. Controllers handle request data, makes sure that correct models are called and right response or view is rendered.

Methods in the controllers' class are called **actions**. Each controller follows naming conventions. The Controller class names are in plural form, Camel Cased, and end in Controller — **PostsController**.

AppController

The **AppConttroller** class is the parent class of all applications' controllers. This class extends the **Controller** class of CakePHP. AppController is defined at **src/Controller/AppController.php.** The file contains the following code.

```
<?php
declare(strict_types=1);
namespace App\Controller;
use Cake\Controller\Controller;
class AppController extends Controller {
```

```
    public function initialize(): void {
        parent::initialize();
        $this->loadComponent('RequestHandler');
        $this->loadComponent('Flash');
    }
}
```

AppController can be used to load components that will be used in every controller of your application. The attributes and methods created in AppController will be available in all controllers that extend it. The **initialize()** method will be invoked at the end of controller's constructor to load components.

Controller Actions

The methods in the controller class are called Actions. These actions are responsible for sending appropriate response for browser/user making the request. View is rendered by the name of action, i.e., the name of method in controller.

Example

```
class RecipesController extends AppController {
    public function view($id) {
        // Action logic goes here.
    }
    public function share($customerId, $recipeId) {
        // Action logic goes here.
    }
    public function search($query) {
        // Action logic goes here.
    }
}
```

As you can see in the above example, the **RecipesController** has 3 actions – **View**, Share, and **Search**.

Redirecting

For redirecting a user to another action of the same controller, we can use the setAction() method. The following is the syntax for the setAction() method.

```
Cake\Controller\Controller::setAction($action, $args...)
```

The following code will redirect the user to index action of the same controller.

```
$this->setAction('index');
```

The following example shows the usage of the above method.

Example

Make changes in the **config/routes.php** file as shown in the following program.

config/routes.php

```
<?php
use Cake\Http\Middleware\CsrfProtectionMiddleware;
use Cake\Routing\Route\DashedRoute;
use Cake\Routing\RouteBuilder;
$routes->setRouteClass(DashedRoute::class);
$routes->scope('/', function (RouteBuilder $builder) {
   // Register scoped middleware for in scopes.
   $builder->registerMiddleware('csrf', new CsrfProtectionMiddleware([
      'httpOnly' => true,
   ]));
   $builder->applyMiddleware('csrf');
   $builder->connect('/redirect-controller',['controller'=>'Redirects','action'=>'action1']);
   $builder->connect('/redirect-controller2',['controller'=>'Redirects','action'=>'action2']);
   $builder->fallbacks();
});
```

Create a **RedirectsController.php** file at src/Controller/RedirectsController.php. Copy the following code in the controller file.

src/Controller/RedirectsController.php

```
<?php
declare(strict_types=1);
namespace App\Controller;
use Cake\Core\Configure;
use Cake\Http\Exception\ForbiddenException;
use Cake\Http\Exception\NotFoundException;
use Cake\Http\Response;
use Cake\View\Exception\MissingTemplateException;
class RedirectsController extends AppController {
   public function action1() {
   }
   public function action2(){
      echo "redirecting from action2";
```

```
        $this->setAction('action1');
    }
}
```

Create a directory **Redirects** at **src/Template** and under that directory create a **View** file called action1.php. Copy the following code in that file.

src/Template/Redirects/action1.php

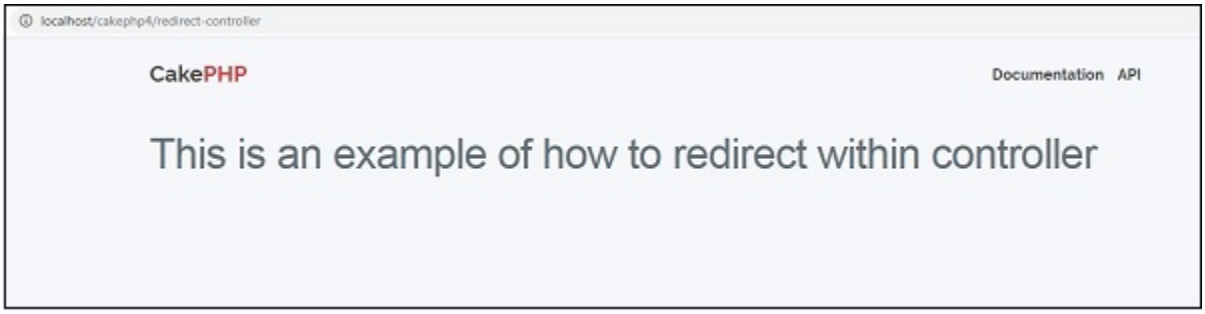
```
<h1>This is an example of how to redirect within controller.</h1>
```

Execute the above example by visiting the following URL.

http://localhost/cakephp4/redirect-controller

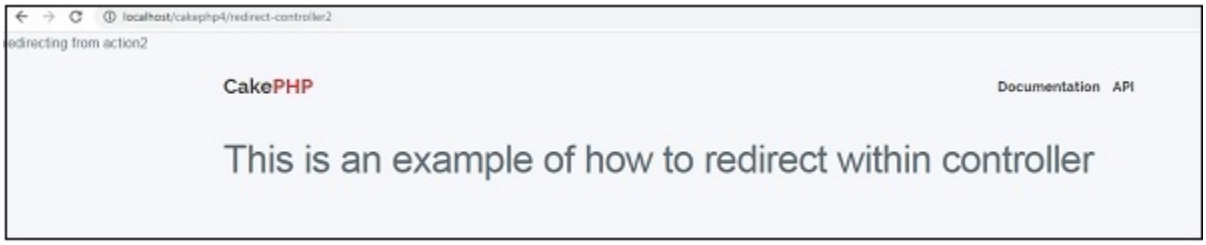
Output

Upon execution, you will receive the following output.



Now, visit the following URL: http://localhost/cakephp4/redirect-controller2

The above URL will give you the following output.



Loading Models

In CakePHP, a model can be loaded using the **loadModel()** method. The following is the syntax for the **loadModel()** method –

```
Cake\Controller\Controller::loadModel(string $modelClass, string $type)
```

There are two arguments to the above function as follows –

- The first argument is the name of model class.

- The second argument is the type of repository to load.

Example

If you want to load Articles model in a controller, then it can be loaded by writing the following line in controller's action.

```
$this->loadModel('Articles');
```

CakePHP - Views

The letter "V" in the MVC is for Views. Views are responsible for sending output to user based on request. **View Classes** is a powerful way to speed up the development process.

View Templates

The View Templates file of CakePHP gets data from controller and then render the output so that it can be displayed properly to the user. We can use variables, various control structures in template.

Template files are stored in **src/Template/**, in a directory named after the controller that uses the files, and named after the action it corresponds to. For example, the **View**file for the Products controller's **"view()"** action, would normally be found in src/Template/Products/view.php.

In short, the name of the controller (ProductsController) is same as the name of the folder (Products) but without the word Controller and name of action/method (view()) of the controller (ProductsController) is same as the name of the View file(view.php).

View Variables

View variables are variables which get the value from controller. We can use as many variables in view templates as we want. We can use the **set()** method to pass values to variables in views. These set variables will be available in both the view and the layout your action renders. The following is the syntax of the **set()** method.

```
Cake\View\View::set(string $var, mixed $value)
```

This method takes two arguments – **the name of the variable** and **its value**.

Example

Make Changes in the **config/routes.php** file as shown in the following program.

config/routes.php

```
<?php
use Cake\Http\Middleware\CsrfProtectionMiddleware;
use Cake\Routing\Route\DashedRoute;
use Cake\Routing\RouteBuilder;
$routes->setRouteClass(DashedRoute::class);
$routes->scope('/', function (RouteBuilder $builder) {
   // Register scoped middleware for in scopes.
   $builder->registerMiddleware('csrf', new CsrfProtectionMiddleware([
      'httpOnly' => true,
   ]));
   $builder->applyMiddleware('csrf');
   $builder->connect('template',['controller'=>'Products','action'=>'view']);
   $builder->fallbacks();
});
```

Create a **ProductsController.php** file at **src/Controller/ProductsController.php.** Copy the following code in the controller file.

src/Controller/ProductsController.php

```
<?php
declare(strict_types=1);
namespace App\Controller;
use Cake\Core\Configure;
use Cake\Http\Exception\ForbiddenException;
use Cake\Http\Exception\NotFoundException;
use Cake\Http\Response;
use Cake\View\Exception\MissingTemplateException;
class ProductsController extends AppController {
public function view(){
      $this->set('Product_Name','XYZ');
   }
}
```

Create a directory Products at **src/Template** and under that folder create a **View** file called view.php. Copy the following code in that file.

```
Value of variable is: <?php echo $Product_Name; ? >
```

Execute the above example by visiting the following URL.

http://localhost/cakephp4/template

Output

The above URL will produce the following output.

CakePHP - Extending Views

Many times, while making web pages, we want to repeat certain part of pages in other pages. CakePHP has such facility by which one can extend view in another view and for this, we need not repeat the code again.

The **extend()** method is used to extend views in **View** file. This method takes one argument, i.e., the name of the view file with path. Don't use extension .ctp while providing the name of the View file.

Example

Make changes in the config/routes.php file as shown in the following program.

config/routes.php

```
<?php
use Cake\Http\Middleware\CsrfProtectionMiddleware;
use Cake\Routing\Route\DashedRoute;
use Cake\Routing\RouteBuilder;
$routes->setRouteClass(DashedRoute::class);
$routes->scope('/', function (RouteBuilder $builder) {
   $builder->registerMiddleware('csrf', new CsrfProtectionMiddleware([
      'httpOnly' => true,
   ]));
   $builder->applyMiddleware('csrf');
   $builder->connect('extend',['controller'=>'Extends','action'=>'index']);
   $builder->fallbacks();
});
```

Create an **ExtendsController.php** file at **src/Controller/ExtendsController.php.** Copy the following code in the controller file.

src/Controller/ExtendsController.php

```
<?php
   namespace App\Controller;
   use App\Controller\AppController;
   class ExtendsController extends AppController{
      public function index(){
      }
   }
?>
```

Create a directory **Extends** at **src/Template** and under that folder create a **View** file called header.php. Copy the following code in that file.

src/Template/Extends/header.php

```
<div align="center">
   <h1>Common Header</h1>
</div>
<?= $this->fetch('content') ?>
```

Create another **View** under **Extends** directory called **index.php.** Copy the following code in that file. Here, we are extending the above view **header.php.**

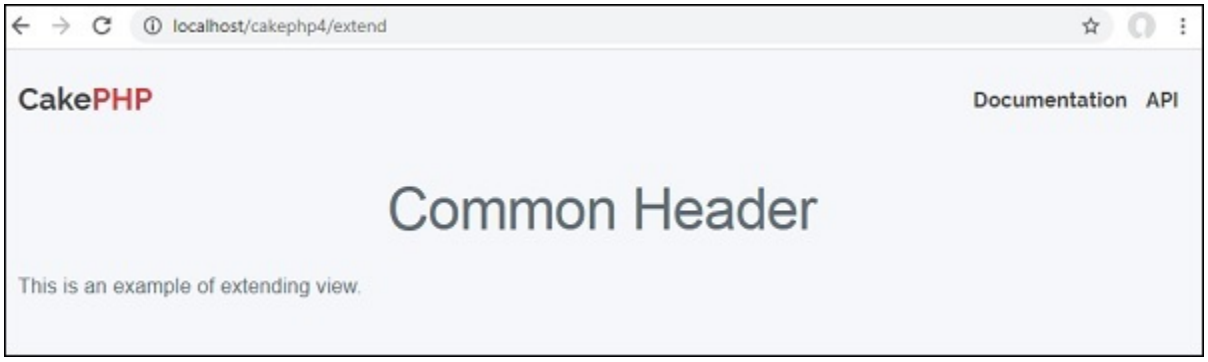
src/Template/Extends/index.php

```
<?php $this->extend('header'); ?>
This is an example of extending view.
```

Execute the above example by visiting the following URL http://localhost/cakephp4/extend

Output

Upon execution, you will receive the following output.



CakePHP - View Elements

Certain parts of the web pages are repeated on multiple web pages, but at different locations. CakePHP can help us reuse these repeated parts. These reusable parts are called **Elements - help box, extra menu,** etc. An element is basically a **mini-view**. We can also pass variables in elements.

```
Cake\View\View::element(string $elementPath, array $data, array $options =[]
```

There are three arguments to the above function as follows –

- The first argument is the name of the template file in the **/src/Template/element/** folder.
- The second argument is the array of data to be made available to the rendered view.
- The third argument is for the array of options. e.g. cache.

Out of the 3 arguments, the first one is compulsory, while the rest are optional.

Example

Create an element file at **src/Template/element** directory called **helloworld.php.** Copy the following code in that file.

src/Template/element/helloworld.php

```
<p>Hello World</p>
```

Create a folder **Elems** at **src/Template** and under that directory create a **View** file called index.php. Copy the following code in that file.

src/Template/Elems/index.php

```
Element Example: <?php echo $this->element('helloworld'); ?>
```

Make Changes in the **config/routes.php** file as shown in the following program.

config/routes.php

```
<?php
use Cake\Http\Middleware\CsrfProtectionMiddleware;
use Cake\Routing\Route\DashedRoute;
use Cake\Routing\RouteBuilder;
$routes->setRouteClass(DashedRoute::class);
$routes->scope('/', function (RouteBuilder $builder) {
```

```
    $builder->registerMiddleware('csrf', new CsrfProtectionMiddleware([
        'httpOnly' => true,
    ]));
    $builder->applyMiddleware('csrf');
    $builder->connect('/element-example',['controller'=>'Elems','action'=>'index']);
    $builder->fallbacks();
});
```

Create an **ElemsController.php** file at **src/Controller/ElemsController.php.** Copy the following code in the controller file.

src/Controller/ElemsController.php

```
<?php
    namespace App\Controller;
    use App\Controller\AppController;
    class ElemsController extends AppController{
        public function index(){
        }
    }
?>
```

Execute the above example by visiting the following URL http://localhost/cakephp4/element-example

Output

Upon execution, the above URL will give you the following output.

CakePHP - View Events

There are several callbacks/events that we can use with View Events. These events are helpful to perform several tasks before something happens or after something happens. The following is a list of callbacks that can be used with CakePHP –

Sr.No	Event Function & Description
1	**Helper::beforeRender(Event $event,$viewFile)** The **beforeRender** method is called after the controller's beforeRender method but before the controller renders **view** and **layout**. This receives the file being rendered as an argument.
2	**Helper::beforeRenderFile(Event $event, $viewFile)** This method is called before each view file is rendered. This includes **elements, views, parent views** and **layouts**.
3	**Helper::afterRenderFile(Event $event, $viewFile, $content)** This method is called after each View file is rendered. This includes **elements, views, parent views** and **layouts**. A callback can modify and return **$content** to change how the rendered content will be displayed in the browser.
4	**Helper::afterRender(Event $event, $viewFile)** This method is called after the view has been rendered, but before the layout rendering has started.
5	**Helper::beforeLayout(Event $event, $layoutFile)** This method is called before the layout rendering starts. This receives the layout filename as an argument.
6	**Helper::afterLayout(Event $event, $layoutFile)** This method is called after the layout rendering is complete. This receives the layout filename as an argument.

CakePHP - Working with Database

Working with database in CakePHP is very easy. We will understand the CRUD (Create, Read, Update, Delete) operations in this chapter.

Further, we also need to configure our database in **config/app_local.php file.**

```
'Datasources' => [
   'default' => [
```

```
        'host' => 'localhost',
        'username' => 'my_app',
        'password' => 'secret',
        'database' => 'my_app',
        'url' => env('DATABASE_URL', null),
    ],
    /*
        * The test connection is used during the test suite.
    */
    'test' => [
        'host' => 'localhost',
        //'port' => 'non_standard_port_number',
        'username' => 'my_app',
        'password' => 'secret',
        'database' => 'test_myapp',
        //'schema' => 'myapp',
    ],
],
```

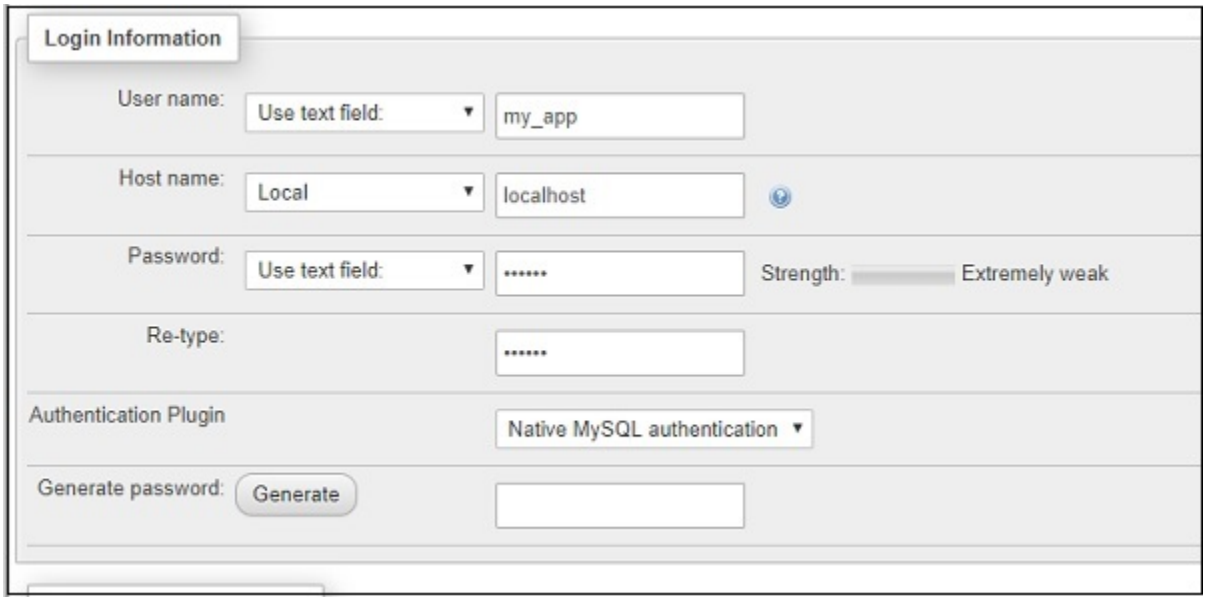
The default connection has following details –

```
'host' => 'localhost',
    'username' => 'my_app',
    'password' => 'secret',
    'database' => 'my_app',
```

You can change the details, i.e. host, username, password and database as per your choice.

Once done, make sure it is updated in config/app_local.php in Datasources object.

Now, we will continue with above details, go to your phpmyadmin or mysql database and create user my_app as shown below –



Give the necessary privileges and save it. Now, we have the database details as per the configuration mentioned in app_local.php. When you check CakePHP home page, this is what you should get –

Now, we will create the following users' table in the database.

```
CREATE TABLE `users` (
   `id` int(11) NOT NULL AUTO_INCREMENT,
   `username` varchar(50) NOT NULL,
   `password` varchar(255) NOT NULL, PRIMARY KEY (`id`)
) ENGINE=InnoDB AUTO_INCREMENT=7 DEFAULT CHARSET=latin1
```

Insert a Record

To insert a record in database, we first need to get hold of a table using **TableRegistry** class. We can fetch the instance out of registry using **get()** method. The **get()** method will take the name of the database table as

argument.

This new instance is used to create new entity. Set necessary values with the instance of new entity. We now have to call the **save()** method with **TableRegistry** class's instance which will insert new record in database.

Example

Make changes in the **config/routes.php** file as shown in the following program.

config/routes.php

```
<?php
use Cake\Http\Middleware\CsrfProtectionMiddleware;
use Cake\Routing\Route\DashedRoute;
use Cake\Routing\RouteBuilder;
$routes->setRouteClass(DashedRoute::class);
$routes->scope('/', function (RouteBuilder $builder) {
   $builder->registerMiddleware('csrf', new CsrfProtectionMiddleware([
      'httpOnly' => true,
   ]));
   $builder->applyMiddleware('csrf');
   //$builder->connect('/pages',['controller'=>'Pages','action'=>'display', 'home']);
   $builder->connect('/users/add', ['controller' => 'Users', 'action' => 'add']);
   $builder->fallbacks();
});
```

Create a **UsersController.php** file at **src/Controller/UsersController.php.** Copy the following code in the controller file.

src/controller/UsersController.php

```
<?php
namespace App\Controller;
use App\Controller\AppController;
use Cake\ORM\TableRegistry;
use Cake\Datasource\ConnectionManager;
use Cake\Auth\DefaultPasswordHasher;
class UsersController extends AppController{
   public function add(){
      if($this->request->is('post')){
         $username = $this->request->getData('username');
         $hashPswdObj = new DefaultPasswordHasher;
         $password = $hashPswdObj->hash($this->request->getData('password'));
         $users_table = TableRegistry::get('users');
         $users = $users_table->newEntity($this->request->getData());
         $users->username = $username;
```

```
            $users->password = $password;
            $this->set('users', $users);
            if($users_table->save($users))
            echo "User is added.";
         }
      }
   }
?>
```

Create a directory **Users** at **src/Template** and under that directory create a **View** file called add.php. Copy the following code in that file.

src/Template/Users/add.php

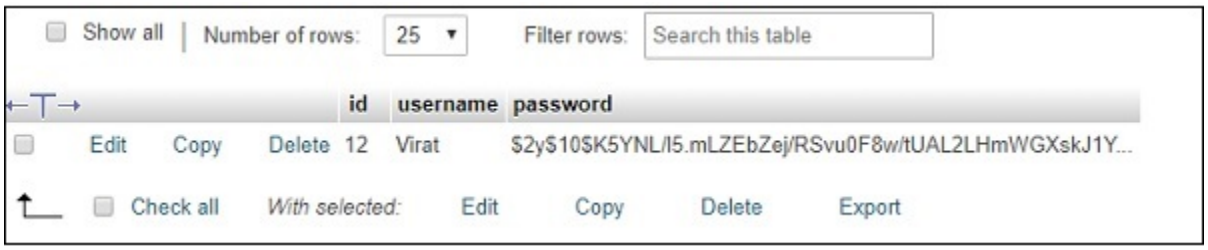
```
<?php
   echo $this->Form->create(NULL,array('url'=>'/users/add'));
   echo $this->Form->control('username');
   echo $this->Form->control('password');
   echo $this->Form->button('Submit');
   echo $this->Form->end();
?>
```

Execute the above example by visiting the following URL. http://localhost/cakephp4/users/add

Output

Upon execution, you will receive the following output.

The data will be saved in the users table as shown below –



CakePHP - View a Record

To view records of database, we first need to get hold of a table using the **TableRegistry** class. We can fetch the instance out of registry using **get()** method. The **get()** method will take the name of the database table as argument.

Now, this new instance is used to find records from database using find() method. This method will return all records from the requested table.

Example

Make changes in the **config/routes.php** file as shown in the following code.

config/routes.php

```
<?php
use Cake\Http\Middleware\CsrfProtectionMiddleware;
use Cake\Routing\Route\DashedRoute;
use Cake\Routing\RouteBuilder;
$routes->setRouteClass(DashedRoute::class);
$routes->scope('/', function (RouteBuilder $builder) {
   $builder->registerMiddleware('csrf', new CsrfProtectionMiddleware([
      'httpOnly' => true,
   ]));
   $builder->applyMiddleware('csrf');
   //$builder->connect('/pages',['controller'=>'Pages','action'=>'display', 'home']);
   $builder->connect('/users', ['controller' => 'Users', 'action' => 'index']);
   $builder->fallbacks();
});
```

Create a **UsersController.php** file at **src/Controller/UsersController.php.** Copy the following code in the controller file.

src/controller/UsersController.php

```
<?php
   namespace App\Controller;
```

```
    use App\Controller\AppController;
    use Cake\ORM\TableRegistry;
    use Cake\Datasource\ConnectionManager;
    class UsersController extends AppController{
       public function index(){
          $users = TableRegistry::get('users');
          $query = $users->find();
          $this->set('results',$query);
       }
    }
 ?>
```

Create a directory **Users** at **src/Template,** ignore if already created, and under that directory create a **View** file called **index.php.** Copy the following code in that file.

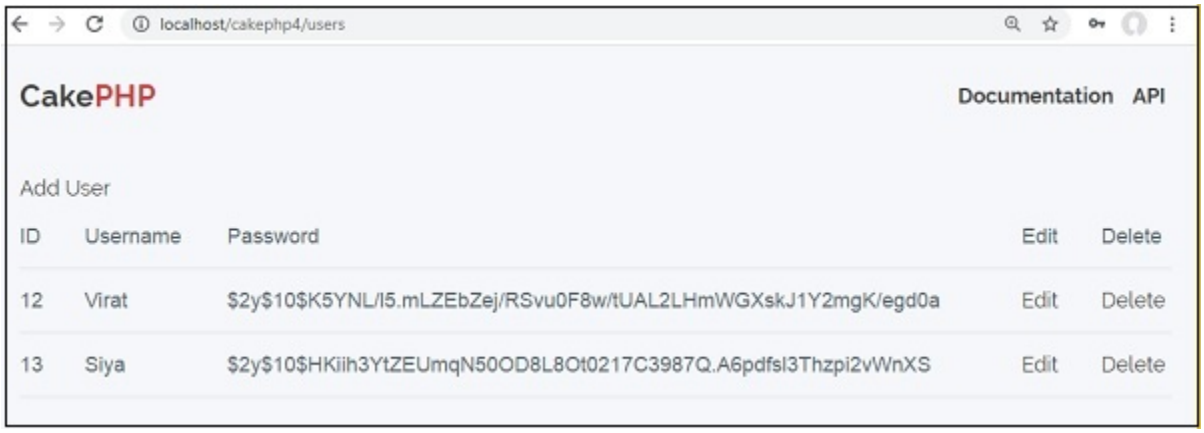
src/Template/Users/index.ctp

```
 <a href="add">Add User</a>
 <table>
    <tr>
       <td>ID</td>
       <td>Username</td>
       <td>Password</td>
       <td>Edit</td>
       <td>Delete</td>
    </tr>
    <?php
       foreach ($results as $row):
       echo "<tr><td>".$row->id."</td>";
       echo "<td<".$row-<username."</td>";
       echo "<td>".$row->password."</td>";
       echo "<td><a href='".$this-<Url->build(["controller" => "Users","action" => "edit",$row-
       echo "<td><a href='".$this->Url->build(["controller" => "Users","action" => "delete",$rc
       endforeach;
    ?>
 </table>
```

Execute the above example by visiting the following URL http://localhost/cakephp4/users

Output

Upon execution, the above URL will give you the following output.



CakePHP - Update a Record

To update a record in database, we first need to get hold of a table using **TableRegistry** class. We can fetch the instance out of registry using the **get()** method. The **get()** method will take the name of the database table as an argument. Now, this new instance is used to get particular record that we want to update.

Call the **get()** method with this new instance, and pass the primary key to find a record, which will be saved in another instance. Use this instance, to set new values that you want to update and then, finally call the **save()** method with the **TableRegistry** class's instance to update record.

Example

Make changes in the config/routes.php file as shown in the following code.

config/routes.php

```
<?php
use Cake\Http\Middleware\CsrfProtectionMiddleware;
use Cake\Routing\Route\DashedRoute;
use Cake\Routing\RouteBuilder;
$routes->setRouteClass(DashedRoute::class);
$routes->scope('/', function (RouteBuilder $builder) {
   $builder->registerMiddleware('csrf', new CsrfProtectionMiddleware([
      'httpOnly' => true,
   ]));
   $builder->applyMiddleware('csrf');
   //$builder->connect('/pages',['controller'=>'Pages','action'=>'display', 'home']);
   $builder->connect('/users/edit', ['controller' => 'Users', 'action' => 'edit']);
   $builder->fallbacks();
});
```

Create a **UsersController.php** file at **src/Controller/UsersController.php.** Copy the following code in the controller file.

src/controller/UsersController.php

```
<?php
   namespace App\Controller;
   use App\Controller\AppController;
   use Cake\ORM\TableRegistry;
   use Cake\Datasource\ConnectionManager;
   class UsersController extends AppController{
      public function index(){
         $users = TableRegistry::get('users');
         $query = $users->find();
         $this->set('results',$query);
      }
      public function edit($id){
         if($this->request->is('post')){
            $username = $this->request->getData('username');
            $password = $this->request->getData('password');
            $users_table = TableRegistry::get('users');
            $users = $users_table->get($id);
            $users->username = $username;
            $users->password = $password;
            if($users_table->save($users))
            echo "User is udpated";
            $this->setAction('index');
         } else {
            $users_table = TableRegistry::get('users')->find();
            $users = $users_table->where(['id'=>$id])->first();
            $this->set('username',$users->username);
            $this->set('password',$users->password);
            $this->set('id',$id);
         }
      }
   }
?>
```

Create a directory **Users at src/Template,** ignore if already created, and under that directory create a view called **index.php.** Copy the following code in that file.

src/Template/Users/index.php

```
<a href="add">Add User</a>
<table>
   <tr>
   <td>ID</td>
```

```
    <td>Username</td>
    <td>Password</td>
    <td>Edit</td>
    <td>Delete</td>
    </tr>
    <?php
       foreach ($results as $row):
       echo "<tr><td>".$row->id."</td>";
       echo "<td>".$row->username."</td>";
       echo "<td>".$row->password."</td>";
       echo "<td><a href='".$this->Url->build(["controller" => "Users","action" => "edit",$row-
       echo "<td><a href='".$this->Url->build(["controller" => "Users","action" => "delete",$rc
       endforeach;
    ?>
</table>
```

Create another **View** file under the Users directory called **edit.php** and copy the following code in it.

src/Template/Users/edit.php

```
<?php
    echo $this->Form->create(NULL,array('url'=>'/users/edit/'.$id));
    echo $this->Form->control('username',['value'=>$username]);
    echo $this->Form->control('password',['value'=>$password]);
    echo $this->Form->button('Submit');
    echo $this->Form->end();
?>
```

Execute the above example by visiting the following URL and click on **Edit link** to edit record.

http://localhost/cakephp4/users

Output

After visiting the above URL, it will display the records in users table as shown below –

Click on Edit button and it will display you following screen –

Now, we will update the name Virat to Virat123 and submit the details. The next screen displayed will be as follows –

CakePHP - Delete a Record

To delete a record in database, we first need to get hold of a table using the **TableRegistry** class. We can fetch the instance out of registry using the **get()** method. The get() method will take the name of the database table as an argument. Now, this new instance is used to get particular record that we want to delete.

Call the **get()** method with this new instance and pass the primary key to find a record which will be saved in another instance. Use the TableRegistry class's instance to call the **delete** method to delete record fr

database.

Example

Make changes in the config/routes.php file as shown in the following code.

config/routes.php

```
<?php
use Cake\Http\Middleware\CsrfProtectionMiddleware;
use Cake\Routing\Route\DashedRoute;
use Cake\Routing\RouteBuilder;
$routes->setRouteClass(DashedRoute::class);
$routes->scope('/', function (RouteBuilder $builder) {
   $builder->registerMiddleware('csrf', new CsrfProtectionMiddleware([
      'httpOnly' => true,
   ]));
   $builder->applyMiddleware('csrf');
   //$builder->connect('/pages',['controller'=>'Pages','action'=>'display', 'home']);
   $builder->connect('/users/delete', ['controller' => 'Users', 'action' => 'delete']);
   $builder->fallbacks();
});
```

Create a **UsersController.php** file at **src/Controller/UsersController.php.** Copy the following code in the controller file.

src/controller/UsersController.php

```
<?php
   namespace App\Controller;
   use App\Controller\AppController;
   use Cake\ORM\TableRegistry;
   use Cake\Datasource\ConnectionManager;
   class UsersController extends AppController{
      public function index(){
         $users = TableRegistry::get('users');
         $query = $users->find();
         $this->set('results',$query);
      }
      public function delete($id){
         $users_table = TableRegistry::get('users');
         $users = $users_table->get($id);
         $users_table->delete($users);
         echo "User deleted successfully.";
```

```
            $this->setAction('index');
        }
    }
?>
```

Just create an empty **View** file under **Users** directory called **delete.ctp.**

src/Template/Users/delete.ctp

Create a directory **Users** at **src/Template,** ignore if already created, and under that directory create a **View**file called **index.ctp.** Copy the following code in that file.

src/Template/Users/index.ctp

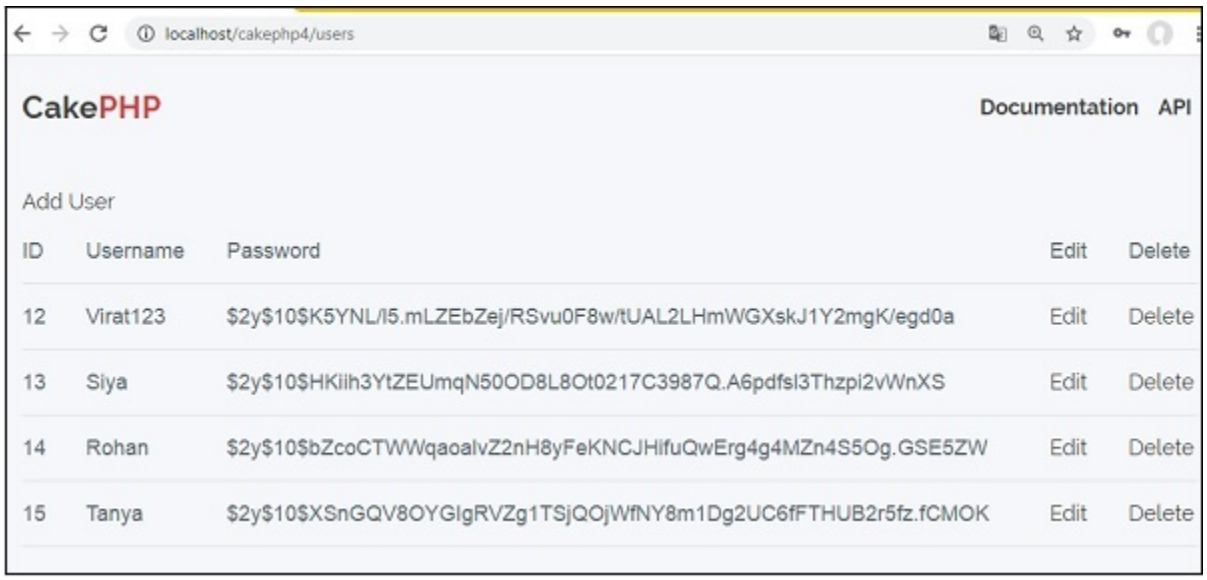
```
<a href="add">Add User</a>
<table>
   <tr>
   <td>ID</td>
   <td>Username</td>
   <td>Password</td>
   <td>Edit</td>
   <td>Delete</td>
   </tr>
   <?php
      foreach ($results as $row):
      echo "<tr><td>".$row->id."</td>";
      echo "<td>".$row->username."</td>";
      echo "<td>".$row->password."</td>";
      echo "<td><a href='".$this->Url->build(["controller" => "Users","action" => "edit",$row-
      echo "<td><a href='".$this->Url->build(["controller" => "Users","action" => "delete",$rc
      endforeach;
   ?>
</table>
```

Execute the above example by visiting the following URL and click on **Delete link** to delete record.

http://localhost:85/CakePHP/users

Output

After visiting the above URL and clicking on the Delete link, you will receive the following output where you can delete record.



Click on Delete link to delete the record.

CakePHP - Services

This chapter deals with the information about the authentication process available in CakePHP.

Authentication

Authentication is the process of identifying the correct user. CakePHP supports three types of authentication.

- **FormAuthenticate** – It allows you to authenticate users based on form POST data. Usually, this is a login form that users enter information into. This is default authentication method.
- **BasicAuthenticate** – It allows you to authenticate users using Basic HTTP authentication
- **DigestAuthenticate** – It allows you to authenticate users using Digest HTTP authentication.

Example for FormAuthentication

Make changes in the config/routes.php file as shown in the following code.

config/routes.php

```
<?php
use Cake\Core\Plugin;
use Cake\Routing\RouteBuilder;
use Cake\Routing\Router;
Router::defaultRouteClass('DashedRoute');
Router::scope('/', function (RouteBuilder $routes) {
   $routes->connect('/auth',['controller'=>'Authexs','action'=>'index']);
   $routes->connect('/login',['controller'=>'Authexs','action'=>'login']);
   $routes->connect('/logout',['controller'=>'Authexs','action'=>'logout']);
   $routes->fallbacks('DashedRoute');
});
Plugin::routes();
```

Change the code of AppController.php file as shown in the following program.

src/Controller/AppController.php

```
<?php
namespace App\Controller;
use Cake\Controller\Controller;
use Cake\Event\Event;
use Cake\Controller\Component\AuthComponent;
class AppController extends Controller {
   public function initialize() {
      parent::initialize();
      $this->loadComponent('RequestHandler');
      $this->loadComponent('Flash');
         $this->loadComponent('Auth', [
            'authenticate' => [
               'Form' => [
                  'fields' => [
               'username' => 'username',
               'password' => 'password'
               ]
            ]
      ],
      'loginAction' => [
         'controller' => 'Authexs',
         'action' => 'login'
      ],
      'loginRedirect' => [
         'controller' => 'Authexs',
```

```
            'action' => 'index'
        ],
        'logoutRedirect' => [
            'controller' => 'Authexs',
            'action' => 'login'
        ]
    ]);
}
public function beforeFilter(Event $event) {
        $this->Auth->allow(['index','view']);
        $this->set('loggedIn', $this->Auth->user());
    }
}
```

Create **AuthexsController.php** file at **src/Controller/AuthexsController.php.** Copy the following code in the controller file.

src/Controller/AuthexsController.php

```
<?php
namespace App\Controller;
use App\Controller\AppController;
use Cake\ORM\TableRegistry;
use Cake\Datasource\ConnectionManager;
use Cake\Event\Event;
use Cake\Auth\DefaultPasswordHasher;
class AuthexsController extends AppController {
    var $components = array('Auth');
    public function index(){
    }
    public function login(){
        if($this->request->is('post')) {
            $user = $this->Auth->identify();
            if($user){
                $this->Auth->setUser($user);
                return $this->redirect($this->Auth->redirectUrl());
            } else
            $this->Flash->error('Your username or password is incorrect.');
        }
    }
    public function logout(){
        return $this->redirect($this->Auth->logout());
    }
```

```
}
?>
```

Create a directory **Authexs** at **src/Template** and under that directory create a **View** file called **login.php**. Copy the following code in that file.

src/Template/Authexs/login.php

```
<?php
   echo $this->Form->create();
   echo $this->Form->control('username');
   echo $this->Form->control('password');
   echo $this->Form->button('Submit');
   echo $this->Form->end();
?>
```

Create another **View** file called **logout.php.** Copy the following code in that file.

src/Template/Authexs/logout.php

```
You are successfully logged out.
```

Create another **View** file called **index.php.** Copy the following code in that file.

src/Template/Authexs/index.php

```
You are successfully logged in.
<?php
   echo $this->Html->link('logout',[
      "controller" => "Authexs","action" => "logout"
   ]);
?>
```

Execute the above example by visiting the following URL.

http://localhost/cakephp4/auth

Output

As the authentication has been implemented, and once you try to visit the above URL, you will be redirected to the login page as shown below.

After providing the correct credentials, you will be logged in and redirected to the screen as shown below.

After clicking on the **logout** link, you will be redirected to the login screen again.

CakePHP - Errors & Exception Handling

Failure of system needs to be handled effectively for smooth running of the system. CakePHP comes with default error trapping, that prints and logs error as they occur. This same error handler is used to catch **Exceptions**.

Error handler displays errors, when debug is true and logs error, when debug is false. CakePHP has number of exception classes and the built in exception handling will capture any uncaught exception and render a useful page.

Errors and Exception Configuration

Errors and Exception can be configured in file **config\app.php**. Error handling accepts a few options that allow you to tailor error handling for your application –

Option	Data Type	Description
errorLevel	int	The level of errors you are interested in capturing. Use the built-in php error constants, and bitmasks to select the level of error you are interested in.
trace	bool	Include stack traces for errors in log files. Stack traces will be included in the log after each error. This is helpful for finding where/when errors are being raised.
exceptionRenderer	string	The class responsible for rendering uncaught exceptions. If you choose a **custom** class, you should place the file for that class in **src/Error**. This class needs to implement a **render()** method.
log	bool	When true, exceptions + their stack traces will be logged to **Cake\Log\Log**.
skipLog	array	An array of exception class names that should not be logged. This is useful to remove **NotFoundExceptions** or other common, but uninteresting logs messages.
extraFatalErrorMemory	int	Set to the number of megabytes to increase the memory limit by, when a fatal error is encountered. This allows breathing room to complete logging or error handling.

Example

Make changes in the **config/routes.php** file as shown in the following code.

config/routes.php

```
<?php
use Cake\Http\Middleware\CsrfProtectionMiddleware;
use Cake\Routing\Route\DashedRoute;
use Cake\Routing\RouteBuilder;
$routes->setRouteClass(DashedRoute::class);
$routes->scope('/', function (RouteBuilder $builder) {
   $builder->registerMiddleware('csrf', new CsrfProtectionMiddleware([
      'httpOnly' => true,
```

```
    ]));
    $builder->applyMiddleware('csrf');
    //$builder->connect('/pages',['controller'=>'Pages','action'=>'display', 'home']);
    $builder->connect('/exception/:arg1/:arg2',
       ['controller'=>'Exps','action'=>'index'],
       ['pass' => ['arg1', 'arg2']]);
    $builder->fallbacks();
});
```

Create **ExpsController.php** file at **src/Controller/ExpsController.php.** Copy the following code in the controller file.

src/Controller/ExpsController.php

```
<?php
   namespace App\Controller;
   use App\Controller\AppController;
   use Cake\Core\Exception\Exception;
   class ExpsController extends AppController {
      public function index($arg1,$arg2) {
         try{
            $this->set('argument1',$arg1);
            $this->set('argument2',$arg2);
            if(($arg1 > 1 || $arg1 > 10) || ($arg2 < 1 || $arg2 > 10))
               throw new Exception("One of the number is out of range [1-10].");
         } catch(\Exception $ex){
            echo $ex->getMessage();
         }
      }
   }
?>
```

Create a directory **Exps** at **src/Template** and under that directory create a **View** file called index.php. Copy the following code in that file.

src/Template/Exps/index.php

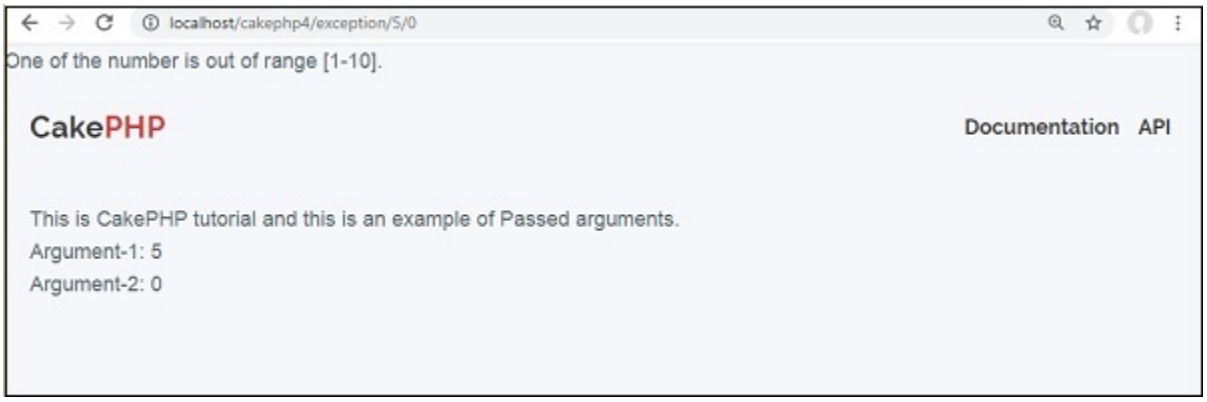
```
This is CakePHP tutorial and this is an example of Passed arguments.

Argument-1: <?=$argument1?><br/>
Argument-2: <?=$argument2?><br/>
```

Execute the above example by visiting the following URL.

http://localhost/cakephp4/exception/5/0

Output

Upon execution, you will receive the following output.



CakePHP - Logging

Logging in CakePHP is a very easy task. You just have to use one function. You can log errors, exceptions, user activities, action taken by users, for any background process like cronjob. Logging data in CakePHP is easy. The log() function is provided by the LogTrait, which is the common ancestor for almost all CakePHP classes.

Logging Configuration

We can configure the log in file **config/app.php.** There is a log section in the file, where you can configure logging options as shown in the following screenshot.

```
/**
 * Configures logging options
 */
'Log' => [
    'debug' => [
        'className' => 'Cake\Log\Engine\FileLog',
        'path' => LOGS,
        'file' => 'debug',
        'levels' => ['notice', 'info', 'debug'],
        'url' => env('LOG_DEBUG_URL', null),
    ],
    'error' => [
        'className' => 'Cake\Log\Engine\FileLog',
        'path' => LOGS,
        'file' => 'error',
        'levels' => ['warning', 'error', 'critical', 'alert', 'emergency'],
        'url' => env('LOG_ERROR_URL', null),
    ],
],
```

By default, you will see two log levels – **error** and **debug** already configured for you. Each will handle different level of messages.

CakePHP supports various logging levels as shown below –

- **Emergency** – System is unusable

- **Alert** – Action must be taken immediately
- **Critical** – Critical conditions
- **Error** – Error conditions
- **Warning** – Warning conditions
- **Notice** – Normal but significant condition
- **Info** – Informational messages
- **Debug** – Debug-level messages

Writing to Log file

There are two ways by which, we can write in a Log file.

The first is to use the static **write()** method. The following is the syntax of the static **write()** method.

Syntax	write(integer|string *$level*, mixed *$message*, string|array *$context* [])
Parameters	The severity level of the message being written. The value must be an integer or string matching a known level. Message content to log. Additional data to be used for logging the message. The special scope key can be passed to be used for further filtering of the log engines to be used. If a string or a numerically index array is passed, it will be treated as the scope key. See **Cake\Log\Log::config()** for more information on logging scopes.
Returns	boolean
Description	Writes the given message and type to all of the configured log adapters. Configured adapters are passed both the $level and $message variables. $level is one of the following strings/values.

The second is to use the **log() shortcut** function available on any using the **LogTrait** Calling log() will internally call **Log::write()** –

Example

Make changes in the **config/routes.php** file as shown in the following program.

config/routes.php

```
<?php
use Cake\Http\Middleware\CsrfProtectionMiddleware;
use Cake\Routing\Route\DashedRoute;
use Cake\Routing\RouteBuilder;
$routes->setRouteClass(DashedRoute::class);
$routes->scope('/', function (RouteBuilder $builder) {
   $builder->registerMiddleware('csrf', new CsrfProtectionMiddleware([
      'httpOnly' => true,
   ]));
   $builder->applyMiddleware('csrf');
   //$builder->connect('/pages',
      ['controller'=>'Pages','action'=>'display', 'home']);
   $builder->connect('logex',['controller'=>'Logexs','action'=>'index']);
   $builder->fallbacks();
});
```

Create a **LogexsController.php** file at **src/Controller/LogexsController.php.** Copy the following code in the controller file.

src/Controller/LogexsController.php

```
<?php
   namespace App\Controller;
   use App\Controller\AppController;
   use Cake\Log\Log;
   class LogexsController extends AppController{
      public function index(){
         /*The first way to write to log file.*/
         Log::write('debug',"Something didn't work.");
         /*The second way to write to log file.*/
         $this->log("Something didn't work.",'debug');
      }
   }
?>
```

Create a directory **Logexs** at **src/Template** and under that directory create a **View** file called index.php. Copy the following code in that file.

src/Template/Logexs/index.php

```
Something is written in log file. Check log file logs\debug.log
```

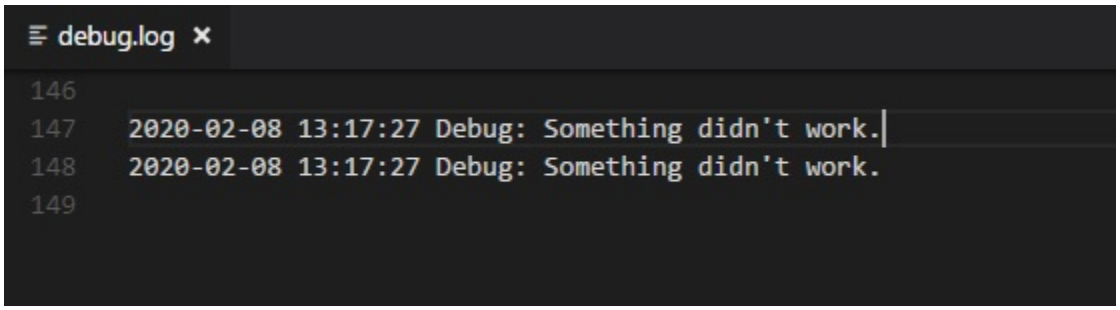
Execute the above example by visiting the following URL.

http://localhost/cakephp4/logex

Output

Upon execution, you will receive the following output.

The logs will be added to log/debug.log file –



CakePHP - Form Handling

CakePHP provides various in built tags to handle HTML forms easily and securely. Like many other PHP frameworks, major elements of HTML are also generated using CakePHP. Following are the various functions used to generate HTML elements.

The following functions are used to **generate select options** –

Syntax	_selectOptions(array *$elementsarray()*, array *$parentsarray()*, boolean *$showParentsnull*, array *$attributesarray()*)
Parameters	• Elements to format • Parents for OPTGROUP • Whether to show parents • HTML attributes
Returns	array
Description	Returns an array of formatted OPTION/OPTGROUP elements

The following functions are used **to generate HTML select element**.

Syntax	select(string $fieldName, array $options array(), array $attributes array())
Parameters	Name attribute of the SELECT Array of the OPTION elements (as 'value'=>'Text' pairs) to be used in the SELECT element.
Returns	Formatted SELECT element.
Description	Returns a formatted SELECT element.

The following functions are used **to generate button** on HTML page.

Syntax	Button(string $title, array $optionsarray())
Parameters	• The button's caption. Not automatically HTML encoded. • Array of options and HTML attributes
Returns	HTML button tag.
Description	Creates a **<button>** tag. The type attribute defaults to **type="submit"**. You can change it to a different value by using **$options['type']**.

The following functions are used **to generate checkbox** on HTML page.

Syntax	Checkbox(string $fieldName, array $optionsarray())
Parameters	• Name of a field, like this "Modelname.fieldname" • Array of HTML attributes. Possible options are value, checked, hiddenField, disabled, default.
Returns	An HTML text input element.
Description	Creates a checkbox input widget.

The following functions are used **to create form** on HTML page.

Syntax	create(mixed *$modelnull* , array *$optionsarray()*)
Parameters	• The model name for which the form is being defined. Should include the plugin name for plugin models. e.g. ContactManager.Contact. If an array is passed and $options argument is empty, the array will be used as options. If false, no model is used. • An array of html attributes and options. Possible options are type, action, url, default, onsubmit, inputDefaults, encoding.
Returns	A formatted opening FORM tag.
Description	Returns an HTML FORM element.

The following functions are used to **provide file uploading functionality** on HTML page.

Syntax	file(string $fieldName, array $optionsarray())
Parameters	• Name of a field, in the form "Modelname.fieldname" • Array of HTML attributes.
Returns	A generated file input.
Description	Creates file input widget.

The following functions are used to create **hidden element** on HTML page.

Syntax	hidden(string *$fieldName* , array *$optionsarray()*)
Parameters	• Name of a field, in the form of "Modelname.fieldname" • Array of HTML attributes.
Returns	A generated hidden input
Description	Creates a hidden input field

The following functions are used to generate **input element** on HTML page.

Syntax	Input(string $fieldName , array $options array())
Parameters	• This should be "Modelname.fieldname" • Each type of input takes different options
Returns	Completed form widget
Description	Generates a form input element complete with label and wrapper div

The following functions are used to generate **radio button** on HTML page.

Syntax	Radio(string *$fieldName* , array *$optionsarray()* , array *$attributesarray()*)
Parameters	• Name of a field, like this "Modelname.fieldname" • Radio button options array. • Array of HTML attributes, and special attributes above.
Returns	Completed radio widget set
Description	Creates a set of radio widgets. Will create a legend and fieldset by default. Use $options to control this.

The following functions are used to generate **submit** button on HTML page.

Syntax	Submit(string $caption null, array $options array())
Parameters	• The label appearing on the button OR if string contains :// or the extension .jpg, .jpe, .jpeg, .gif, .png. Use an image if the extension exists, AND the first character is /, image is relative to webroot, OR if the first character is not /, image is relative to webroot/img. • Array of options. Possible options are div, before, after, type etc.
Returns	An HTML submit button
Description	Creates a submit button element. This method will generate <input /> elements that can be used to submit, and reset forms by using $options. Image submits can be created by supplying an image path for $caption.

The following functions are used **to generate textarea element** on HTML page.

Syntax	Textarea(string $fieldName , array $options array())
Parameters	• Name of a field, in the form "Modelname.fieldname" • Array of HTML attributes, special option like escape
Returns	A generated HTML text input element
Description	Creates a textarea widget

Example

Make changes in the **config/routes.php** file as shown in the following code.

config/routes.php

```
<?php
use Cake\Http\Middleware\CsrfProtectionMiddleware;
use Cake\Routing\Route\DashedRoute;
use Cake\Routing\RouteBuilder;
$routes->setRouteClass(DashedRoute::class);
$routes->scope('/', function (RouteBuilder $builder) {
   $builder->registerMiddleware('csrf', new CsrfProtectionMiddleware([
      'httpOnly' => true,
   ]));
   $builder->applyMiddleware('csrf');
```

```
    //$builder->connect('/pages',['controller'=>'Pages','action'=>'display', 'home']);
    $builder->connect('register',['controller'=>'Registrations','action'=>'index']);
    $builder->fallbacks();
});
```

Create a **RegistrationsController.php** file at

src/Controller/RegistrationsController.php. Copy the following code in the controller file.

src/Controller/RegistrationsController.php

```
<?php
    namespace App\Controller;
    use App\Controller\AppController;
    class RegistrationsController extends AppController{
        public function index(){
            $country = array('India','United State of America','United Kingdom');
            $this->set('country',$country);
            $gender = array('Male','Female');
            $this->set('gender',$gender);
        }
    }
?>
```

Create a directory **Registrations** at **src/Template** and under that directory, create a **View** file called **index.php.** Copy the following code in that file.

src/Template/Registrations/index.php

```
<?php
    echo $this->Form->create(NULL,array('url'=>'/register'));
    echo '<label for="country">Country</label>';
    echo $this->Form->select('country',$country);
    echo '<label for="gender">Gender</label>';
    echo $this->Form->radio('gender ',$gender);
    echo '<label for="address">Address</label>';
    echo $this->Form->textarea('address');
    echo $this->Form->file('profilepic');
    echo '<div>'.$this->Form->checkbox('terms').
        '<label for="country">Terms ∓ Conditions</label></div>';
    echo $this->Form->button('Submit');
    echo $this->Form->end();
?>
```

Execute the above example by visiting the following URL –

http://localhost/cakephp4/register

Output

Upon execution, you will receive the following output.

CakePHP - Internationalization

Like many other frameworks, CakePHP also supports Internationalization. We need to follow these steps to go from single language to multiple language.

Step 1

Create a separate locales directory resources**locales**.

Step 2

Create subdirectory for each language, under the directory src\Locale. The name of the subdirectory can be two letter ISO code of the language or full locale name like en_US, fr_FR etc.

Step 3

Create separate **default.po** file under each language subdirectory. This file contains entry in the form of **msgid** and **msgstr**, as shown in the following program.

```
msgid "msg"
msgstr "CakePHP Internationalization example."
```

Here, the **msgid** is the key which will be used in the View template file and **msgstr** is the value which stores the translation.

Step 4

In the View template file, we can use the above **msgid**, as shown below which will be translated based on the set value of locale.

```
<?php echo __('msg'); ?>
```

The default locale can be set in the **config/app.php** file by the following line.

```
'defaultLocale' => env('APP_DEFAULT_LOCALE', 'en_US')
```

To change the local at runtime, we can use the following lines.

```
use Cake\I18n\I18n;
I18n::locale('de_DE');
```

Example

Make changes in the config/routes.php file as shown in the following program.

config/routes.php

```
<?php
use Cake\Http\Middleware\CsrfProtectionMiddleware;
use Cake\Routing\Route\DashedRoute;
use Cake\Routing\RouteBuilder;
$routes->setRouteClass(DashedRoute::class);
$routes->scope('/', function (RouteBuilder $builder) {
   $builder->registerMiddleware('csrf', new CsrfProtectionMiddleware([
      'httpOnly' => true,
   ]));
   $builder->applyMiddleware('csrf');
   //$builder->connect('/pages',
      ['controller'=>'Pages','action'=>'display', 'home']);
   $builder->connect('locale',
      ['controller'=>'Localizations','action'=>'index']);
   $builder->fallbacks();
});
```

Create a **LocalizationsController.php** file at **src/Controller/LocalizationsController.php.** Copy the following code in the controller file.

src/Controller/LocalizationsController.php

```
<?php
   namespace App\Controller;
   use App\Controller\AppController;
   use Cake\I18n\I18n;
   class LocalizationsController extends AppController {
      public function index() {
         if($this->request->is('post')) {
            $locale = $this->request->getData('locale');
            I18n::setLocale($locale);
         }
      }
   }
?>
```

Create a **locales** directory at resources**locales**. Create 3 directories called **en_US, fr_FR, de_DE** under the locales directory. Create a file under each directory called **default.po.** Copy the following code in the respective file.

resources/locales/en_US/default.po

```
msgid "msg"
msgstr "CakePHP Internationalization example."
```

resources/locales/fr_FR/default.po

```
msgid "msg"
msgstr "Exemple CakePHP internationalisation."
```

resources/locales/de_DE/default.po

```
msgid "msg"
msgstr "CakePHP Internationalisierung Beispiel."
```

Create a directory **Localizations** at **src/Template** and under that directory, create a **View** file called **index.php.** Copy the following code in that file.

src/Template/Localizations/index.php

```
<?php
   echo $this->Form->create(NULL,array('url'=>'/locale'));
   echo $this->Form->radio("locale",
      [
```

```
            ['value'=>'en_US','text'=>'English'],
            ['value'=>'de_DE','text'=>'German'],
            ['value'=>'fr_FR','text'=>'French'],
        ]
    );
    echo $this->Form->button('Change Language');
    echo $this->Form->end();
?>
<?php echo __('msg'); ?>
```

Execute the above example by visiting the following URL. http://localhost/cakephp4/locale

Output

Upon execution, you will receive the following output.

Email

CakePHP provides Email class to manage email related functionalities. To use email functionality in any controller, we first need to load the Email class by writing the following line.

```
use Cake\Mailer\Email;
```

The Email class provides various useful methods which are described below.

Syntax	From(string|array|null *$email* null, string\|null *$name* null)
Parameters	• String with email • Name
Returns	array|$this
Description	It specifies from which email address; the email will be sent

Syntax	To(string|array|null *$email*null, string\|null *$name*null)
Parameters	• String with email • Name
Returns	array|$this
Description	It specifies to whom the email will be sent

Syntax	Send(string|array|null *$content*null)
Parameters	• String with message or array with messages.
Returns	array
Description	Send an email using the specified content, template and layout

Syntax	Subject(string|null *$subject*null)
Parameters	• Subject string
Returns	array|$this
Description	Get/Set Subject

Syntax	Attachments(string|array|null *$attachment*snull)
Parameters	• String with the filename or array with filenames
Returns	array|$this
Description	Add attachments to the email message

Syntax	Bcc(string|array|null *$email*null, string\|null *$name*null)
Parameters	• String with email • Name
Returns	array|$this
Description	Bcc

Syntax	cc(string|array|null *$email*null , string\|null *$name*null)
Parameters	• String with email • Name
Returns	array|$this
Description	Cc

Example

Make changes in the config/routes.php file as shown in the following program.

config/routes.php

```
<?php
use Cake\Http\Middleware\CsrfProtectionMiddleware;
use Cake\Routing\Route\DashedRoute;
use Cake\Routing\RouteBuilder;
$routes->setRouteClass(DashedRoute::class);
$routes->scope('/', function (RouteBuilder $builder) {
   $builder->registerMiddleware('csrf', new CsrfProtectionMiddleware([
      'httpOnly' => true,
   ]));
   $builder->applyMiddleware('csrf');
   //$builder->connect('/pages',['controller'=>'Pages','action'=>'display', 'home']);
   $builder->connect('/email',['controller'=>'Emails','action'=>'index']);
   $builder->fallbacks();
});
```

Create an **EmailsController.php** file at **src/Controller/EmailsController.php.** Copy the following code in the controller file.

src/Controller/EmailsController.php

```
<?php
   namespace App\Controller;
   use App\Controller\AppController;
   use Cake\Mailer\Email;
   class EmailsController extends AppController{
```

```
        public function index(){
            $email = new Email('default');
            $email->to('abc@gmail.com')
                ->subject('About')
                ->send('My message');
        }
    }
?>
```

Create a directory **Emails** at **src/Template** and under that directory, create a View file called **index.php.** Copy the following code in that file.

src/Template/Emails/index.php

```
Email Sent.
```

Before we send any email, we need to configure it. In the below screenshot, you can see that there are two transports, default and Gmail. We have used Gmail transport.

You need to replace the “GMAIL USERNAME” with your Gmail username and “APP PASSWORD” with your applications password. You need to turn on 2-step verification in Gmail and create a new APP password to send email.

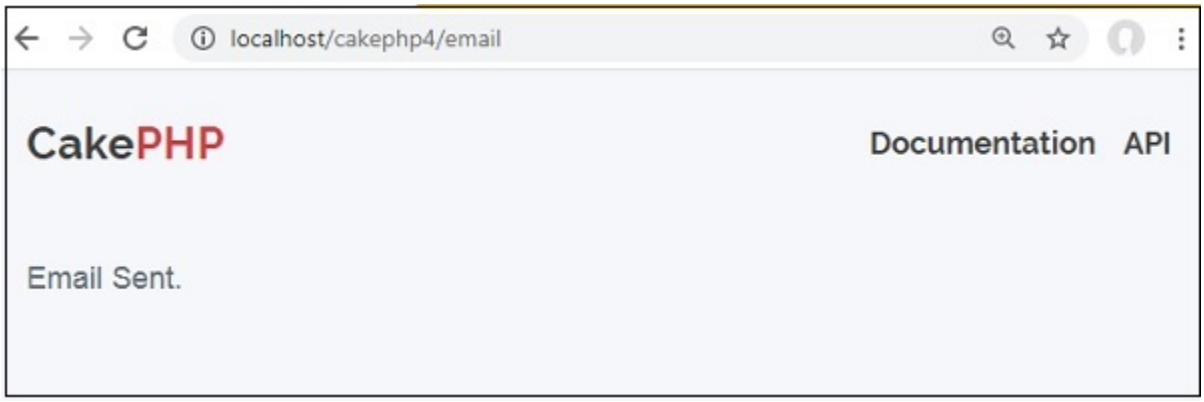
config/app.php

```
'EmailTransport' => [
    'default' => [
        'className' => 'Mail',
        // The following keys are used in SMTP transports
        'host' => 'localhost',
        'port' => 25,
        'timeout' => 30,
        'username' => 'user',
        'password' => 'secret',
        'client' => null,
        'tls' => null,
        'url' => env('EMAIL_TRANSPORT_DEFAULT_URL', null),
    ],
    'gmail' => [
        'host' => 'ssl://smtp.gmail.com',
        'port' => 465,
        'username' => 'GMAIL USERNAME',
        'password' => 'APP PASSWORD',
        'className' => 'Smtp'
    ],
],
```

Execute the above example by visiting the following URL – http://localhost/cakephp/email

Output

Upon execution, you will receive the following output.



CakePHP - Session Management

Session allows us to manage unique users across requests, and stores data for specific users. Session data can be accessible anywhere, anyplace, where you have access to request object, i.e., sessions are accessible from controllers, views, helpers, cells, and components.

Accessing Session Object

Session object can be created by executing the following code.

```
$session = $this->request->session();
```

Writing Session Data

To write something in session, we can use the **write() session** method.

```
Session::write($key, $value)
```

The above method will take two arguments, the **value** and the **key** under, which the value will be stored.

Example

```
$session->write('name', 'Virat Gandhi');
```

Reading Session Data

To retrieve stored data from session, we can use the **read() session** method.

```
Session::read($key)
```

The above function will take only one argument, that is **the key of the value,** which was used at the time of writing session data. Once the correct key was provided, then the function will return its value.

Example

```
$session->read('name');
```

When you want to check whether, particular data exists in the session or not, then you can use the **check() session** method.

```
Session::check($key)
```

The above function will take only key as the argument.

Example

```
if ($session->check('name')) {
   // name exists and is not null.
}
```

Delete Session Data

To delete data from session, we can use the **delete() session** method to delete the data.

```
Session::delete($key)
```

The above function will take only key of the value to be deleted from session.

Example

```
$session->delete('name');
```

When you want to read and then delete data from session then, we can use the **consume() session** method.

```
static Session::consume($key)
```

The above function will take only key as argument.

Example

```
$session->consume('name');
```

Destroying a Session

We need to destroy a user session, when the user logs out from the site and to destroy the session the **destroy()** method is used.

```
Session::destroy()
```

Example

```
$session->destroy();
```

Destroying session will remove all session data from server, but will not remove session cookie.

Renew a Session

In a situation, where you want to renew user session then, we can use the **renew() session** method.

```
Session::renew()
```

Example

```
$session->renew();
```

Complete Session

Make changes in the **config/routes.php** file as shown in the following program.

config/routes.php

```
<?php
use Cake\Http\Middleware\CsrfProtectionMiddleware;
use Cake\Routing\Route\DashedRoute;
use Cake\Routing\RouteBuilder;
$routes->setRouteClass(DashedRoute::class);
$routes->scope('/', function (RouteBuilder $builder) {
   $builder->registerMiddleware('csrf', new CsrfProtectionMiddleware([
      'httpOnly' => true,
   ]));
   $builder->applyMiddleware('csrf');
   //$builder->connect('/pages',['controller'=>'Pages','action'=>'display', 'home']);
   $builder->connect('/session-object',['controller'=>'Sessions','action'=>'index']);
   $builder->connect('/session-read',['controller'=>'Sessions','action'=>'retrieve_session_
```

```
    $builder->connect('/session-write',['controller'=>'Sessions','action'=> 'write_session_data
    $builder->connect('/session-check',['controller'=>'Sessions','action'=>'check_session_data'
    $builder->connect('/session-delete',['controller'=>'Sessions','action'=>'delete_session_dat
    $builder->connect('/session-destroy',['controller'=>'Sessions','action'=>'destroy_session_d
    $builder->fallbacks();
});
```

Create a **SessionsController.php** file at **src/Controller/SessionsController.php.** Copy the following code in the controller file

src/Controller/SessionsController.php

```
<?php
namespace App\Controller;
use App\Controller\AppController;
    class SessionsController extends AppController {
    public function retrieveSessionData() {
        //create session object
        $session = $this->request->getSession();
        //read data from session
        $name = $session->read('name');
        $this->set('name',$name);
    }
    public function writeSessionData(){
        //create session object
        $session = $this->request->getSession();
        //write data in session
        $session->write('name','Virat Gandhi');
    }
    public function checkSessionData(){
        //create session object
        $session = $this->request->getSession();
        //check session data
        $name = $session->check('name');
        $address = $session->check('address');
        $this->set('name',$name);
        $this->set('address',$address);
    }
    public function deleteSessionData(){
        //create session object
        $session = $this->request->getSession();
        //delete session data
        $session->delete('name');
    }
```

```
    public function destroySessionData(){
        //create session object
        $session = $this->request->getSession();
        //destroy session
        $session->destroy();
    }
}
?>
```

Create a directory **Sessions** at **src/Template** and under that directory create a **View** file called **write_session_data.php.** Copy the following code in that file.

src/Template/Sessions/write_session_data.php

```
The data has been written in session.
```

Create another **View** file called **retrieve_session_data.php** under the same **Sessions** directory and copy the following code in that file.

src/Template/Sessions/retrieve_session_data.php

```
Here is the data from session.
Name: <?=$name;?>
```

Create another **View** file called **check_session_data.ctp** under the same Sessions directory and copy the following code in that file.

src/Template/Sessions/check_session_data.ctp

```
<?php if($name): ?>
name exists in the session.
<?php else: ?>
name doesn't exist in the database
<?php endif;?>
<?php if($address): ?>
address exists in the session.
<?php else: ?>
address doesn't exist in the database
<?php endif;?>
```

Create another **View** file called **delete_session_data.ctp,** under the same Sessions directory and copy the following code in that file.

src/Template/Sessions/delete_session_data.ctp

```
Data deleted from session.
```

Create another **View** file called **destroy_session_data.ctp,** under the same Sessions directory and copy the following code in that file.

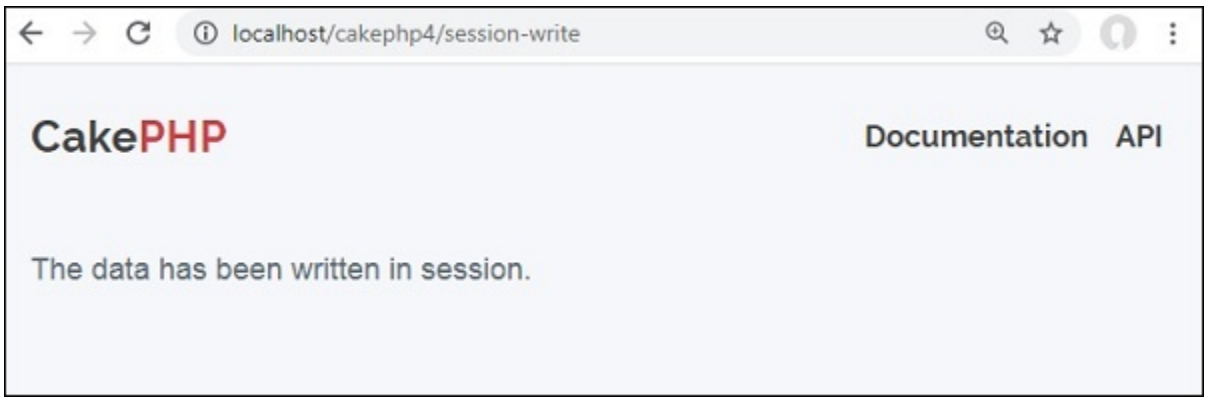
src/Template/Sessions/destroy_session_data.ctp

```
Session Destroyed.
```

Output

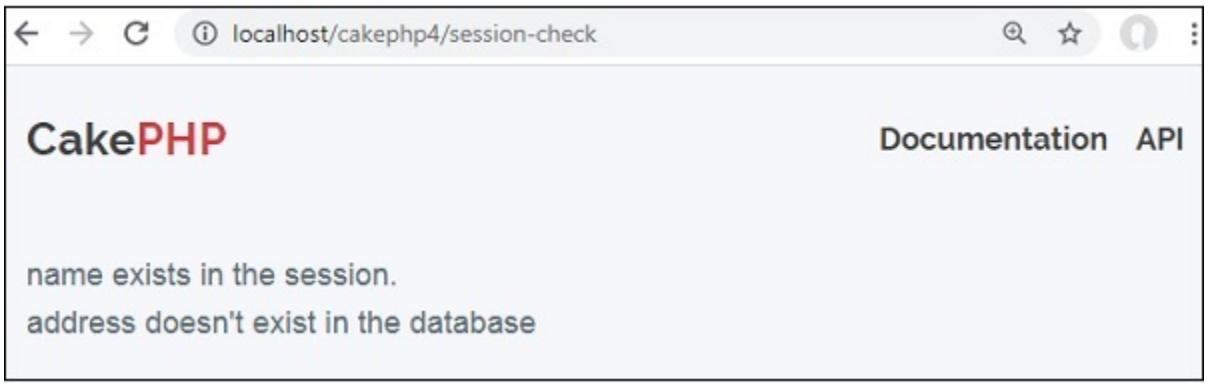
Execute the above example by visiting the following URL. This URL will help you write data in session.

http://localhost/cakephp4/session-write



Visit the following URL **to read session data – http://localhost/cakephp4/session-read**

Visit the following URL **to check session data** – http://localhost/cakephp4/session-check



Visit the following URL **to delete session data** – http://localhost/cakephp4/session-delete Visit the

Visit the following URL **to destroy session data** – http://localhost/cakephp4/session-destroy

CakePHP - Cookie Management

Handling Cookie with CakePHP is easy and secure. There is a CookieComponent class which is used for managing Cookie. The class provides several methods for working with Cookies.

To work with cookies, add this 2 classes to your controller –

```
use Cake\Http\Cookie\Cookie;
use Cake\Http\Cookie\CookieCollection;
```

The cookie object has to be created first to register a cookie.

```
$cookie = new Cookie(name,value,expiration time,path,domain);
```

The name and value are mandatory and others are optional param.

Write Cookie

Following is the syntax to write a cookie.

```
$cookie = new Cookie(name,value,expiration time,path,domain);
```

The cookie created has to be added to cookieCollection as shown below –

```
$cookie = new Cookie('name','XYZ');
$cookies = new CookieCollection([$cookie]);
```

If the cookie collection object is already created, the rest of the cookies can be added as shown below –

```
$cookies = $cookies->add($cookie);
```

Read Cookie

To read cookie make use of get() method from cookiecollection.

Syntax

The syntax for read cookie is as follows –

```
Cake\Http\Cookie\CookieCollection::get($name)
```

This will return you cookiecollection Interface, to get the value of the cookie, you will have to call the method getValue().

```
Cake\Http\Cookie\CookieCollection Interface::getValue()
```

Check Cookie

The **has()** method from cookieCollection will tell you, if the cookie is present or not.

```
Cake\Http\Cookie\CookieCollection::has($name)
```

Example

```
echo $isPresent = $this->cookies->has('name');
```

Delete Cookie

The **remove()** method is used to delete cookie. Following is the syntax of the remove() method.

```
Cake\Http\Cookie\CookieCollection::remove($name)
```

The remove() method will take one argument, the name of cookie variable ($name) to delete.

Example 1

```
$test = $this->cookies->remove('name');
```

Example 2

Make changes in the config/routes.php file as shown in the following program.

config/routes.php

```
<?php
use Cake\Http\Middleware\CsrfProtectionMiddleware;
use Cake\Routing\Route\DashedRoute;
use Cake\Routing\RouteBuilder;
$routes->setRouteClass(DashedRoute::class);
$routes->scope('/', function (RouteBuilder $builder) {
   $builder->registerMiddleware('csrf', new CsrfProtectionMiddleware([
      'httpOnly' => true,
   ]));
   $builder->applyMiddleware('csrf');
   //$builder->connect('/pages',['controller'=>'Pages','action'=>'display', 'home']);
   $builder->connect('cookie/testcookies',['controller'=>'Cookies','action'=>'testCookies']);
   $builder->fallbacks();
});
```

Create a **CookiesController.php** file at **src/Controller/CookiesController.php.** Copy the following code in the controller file.

src/Controller/Cookies/CookiesController.php

```
<?php
   namespace App\Controller;
   use App\Controller\AppController;
   use Cake\Http\Cookie\Cookie;
   use Cake\Http\Cookie\CookieCollection;
   class CookiesController extends AppController{
      public $cookies;
      public function testCookies() {
         $cookie = new Cookie('name','XYZ');
         $this->cookies = new CookieCollection([$cookie]);
         $cookie_val = $this->cookies->get('name');
         $this->set('cookie_val',$cookie_val->getValue());
         $isPresent = $this->cookies->has('name');
         $this->set('isPresent',$isPresent);
```

```
            $this->set('count', $this->cookies->count());
            $test = $this->cookies->remove('name');
            $this->set('count_afterdelete', $test->count());
        }
    }
?>
```

Create a directory **Cookies** at **src/Template** and under that directory create a **View** file called **test_cookies.php.** Copy the following code in that file.

src/Template/Cookie/test_cookies.php

```
The value of the cookie is: <?php echo $cookie_val; ?>

<br/>
<?php
   if($isPresent):
?>
The cookie is present.
<?php
   else:
?>
The cookie isn't present.
<?php
   endif;
?>
<br/>
<?php
   echo "The count of cookie before delete is :" .$count;
?>
<br/>
<?php
   echo "The count of cookie after delete is :" .$count_afterdelete;
?>
```

Output

Execute the above example by visiting the following URL – http://localhost/cakephp4/cookie/testcookies

CakePHP - Security

Security is another important feature while building web applications. It assures the users of the website that, their data is secured. CakePHP provides some tools to secure your application.

Encryption and Decryption

Security library in CakePHP provides methods, by which we can encrypt and decrypt data. Following are the two methods, which are used for the same purpose.

```
static Cake\Utility\Security::encrypt($text, $key, $hmacSalt = null)
static Cake\Utility\Security::decrypt($cipher, $key, $hmacSalt = null)
```

The encrypt method will take text and key as the argument to encrypt data and the return value will be the encrypted value with HMAC checksum.

To hash a data, **hash()** method is used. Following is the syntax of the hash() method.

```
static Cake\Utility\Security::hash($string, $type = NULL, $salt = false)
```

CSRF

CSRF stands for **Cross Site Request Forgery**. By enabling the CSRF Component, you get protection against attacks. CSRF is a common vulnerability in web applications.

It allows an attacker to capture and replay a previous request, and sometimes submit data requests using image tags or resources on other domains. The CSRF can be enabled by simply adding the **CsrfComponent** to your components array as shown below –

```
public function initialize(): void {
   parent::initialize();
   $this->loadComponent('Csrf');
}
```

The CsrfComponent integrates seamlessly with **FormHelper**. Each time you create a form with FormHelper, it will insert a hidden field containing the CSRF token.

While this is not recommended, you may want to disable the CsrfComponent on certain requests. You can do so by using the controller's event dispatcher, during the **beforeFilter()** method.

```
public function beforeFilter(Event $event) {
   $this->eventManager()->off($this->Csrf);
}
```

Security Component

Security Component applies tighter security to your application. It provides methods for various tasks like –

- **Restricting which HTTP methods your application accepts** – You should always verify the HTTP method, being used before executing side-effects. You should check the HTTP method or use **Cake\Network\Request::allowMethod()** to ensure the correct HTTP method is used.
- **Form tampering protection** – By default, the SecurityComponent prevents users from tampering with forms in specific ways. The SecurityComponent will prevent the following things –
    - Unknown fields cannot be added to the form.
    - Fields cannot be removed from the form.
    - Values in hidden inputs cannot be modified.
- **Requiring that SSL be used** – All actions to require a SSL- secured
- **Limiting cross controller communication** – We can restrict which controller can send request to this controller. We can also restrict which actions can send request to this controller's action.

Example

Make changes in the **config/routes.php** file as shown in the following program.

config/routes.php

```
<?php
use Cake\Http\Middleware\CsrfProtectionMiddleware;
use Cake\Routing\Route\DashedRoute;
use Cake\Routing\RouteBuilder;
$routes->setRouteClass(DashedRoute::class);
$routes->scope('/', function (RouteBuilder $builder) {
   $builder->registerMiddleware('csrf', new CsrfProtectionMiddleware([
      'httpOnly' => true,
   ]));
   $builder->applyMiddleware('csrf');
   //$builder->connect('/pages',
      ['controller'=>'Pages','action'=>'display', 'home']);
   $builder->connect('login',['controller'=>'Logins','action'=>'index']);
   $builder->fallbacks();
});
```

Create a **LoginsController.php** file at **src/Controller/LoginsController.php.** Copy the following code in the controller file.

src/Controller/LoginsController.php

```
<?php
   namespace App\Controller;
   use App\Controller\AppController;
   class LoginsController extends AppController {
      public function initialize() : void {
         parent::initialize();
         $this->loadComponent('Security');
      }
         public function index(){
      }
   }
?>
```

Create a directory **Logins** at **src/Template** and under that directory create a **View** file called index.php. Copy the following code in that file.

src/Template/Logins/index.php

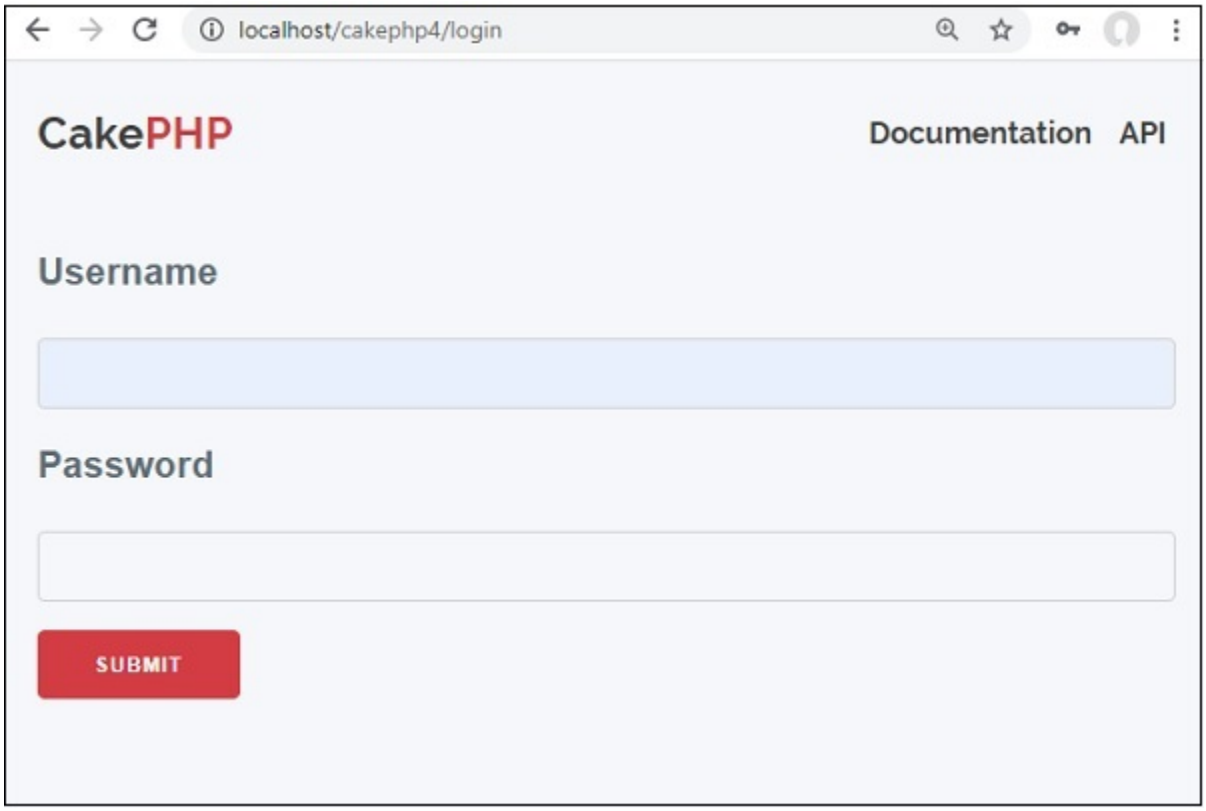
```
<?php
   echo $this->Form->create(NULL,array('url'=>'/login'));
   echo $this->Form->control('username');
   echo $this->Form->control('password');
```

```
    echo $this->Form->button('Submit');
    echo $this->Form->end();
?>
```

Execute the above example by visiting the following URL – http://localhost/cakephp4/login

Output

Upon execution, you will receive the following output.



CakePHP - Validation

Often while making websites, we need to validate certain things before processing data further. CakePHP provides validation package, to build validators that can validate data with ease.

Validation Methods

CakePHP provides various validation methods in the Validation Class. Some of the most popular of them are listed below.

Syntax	Add(string $field, array|string $name, array|Cake\Validation\ValidationRule $rule [])
Parameters	• The name of the field from which the rule will be added. • The alias for a single rule or multiple rules array. • The rule to add
Returns	$this
Description	Adds a new rule to a field's rule set. If second argument is an array, then rules list for the field will be replaced with second argument and third argument will be ignored.

Syntax	allowEmpty(string *$field*, boolean\|string\|callable *$when*true, string|null *$message*null)
Parameters	• The name of the field. • Indicates when the field is allowed to be empty. Valid values are **true (always), 'create', 'update'**. If a callable is passed, then the field will be left empty only when the callback returns true. • The message to show if the field is not.
Returns	$this
Description	Allows a field to be empty.
Syntax	alphanumeric (string *$field*, string\|null *$message*null, string|callable|null *$when*null)
Parameters	• The field you want to apply the rule to. • The error message when the rule fails. • Either 'create' or 'update' or a callable that returns true when the validation rule should be applied.
Returns	$this
Description	Add an alphanumeric rule to a field.

Syntax	creditCard(string *$field* , string *$type*'all', string|null *$message*null, string\|callable\|null *$when*null)
Parameters	• The field you want to apply the rule to. • The type of cards you want to allow. Defaults to 'all'. You can also supply an array of accepted card types, for example, ['mastercard', 'visa', 'amex']. • The error message when the rule fails. • Either 'create' or 'update' or a callable that returns true, when the validation rule should be applied.
Returns	$this
Description	Add a credit card rule to a field.

Syntax	Email(string $field , boolean *$checkMX*false, string|null *$message*null, string\|callable\|null, *$when*null)
Parameters	• The field you want to apply the rule to. • Whether or not to check the MX records. • The error message when the rule fails. • Either 'create' or 'update' or a callable that returns true, when the validation rule should be applied.
Returns	$this
Description	Add an email validation rule to a field.

Syntax	maxLength(string *$field*, integer *$max*, string|null *$message*null, string\|callable\|null *$when*null)
Parameters	• The field you want to apply the rule to. • The maximum length allowed. • The error message when the rule fails. • Either **'create'** or **'update'** or a **callable** that returns true when the validation rule should be applied.
Returns	$this
Description	Add a string length validation rule to a field.

Syntax	minLength(string *$field*, integer *$min*, string|null *$message*null, string\|callable\|null *$when*null)
Parameters	• The field you want to apply the rule to. • The maximum length allowed. • The error message when the rule fails. • Either **'create'** or **'update'** or a **callable**, that returns true when the validation rule should be applied.
Returns	$this
Description	Add a string length validation rule to a field.

Syntax	notBlank(string *$field*, string\|null *$message*null, string|callable|null *$when*null)
Parameters	• The field you want to apply the rule to. • The error message when the rule fails. • Either **'create'** or **'update'** or a **callable** that returns true when the validation rule should be applied. •
Returns	$this
Description	Add a notBlank rule to a field.

CakePHP - Creating Validators

Validator can be created by adding the following two lines in the controller.

```
use Cake\Validation\Validator;
$validator = new Validator();
```

Validating Data

Once, we have created validator, we can use the validator object to validate data. The following code explains, how we can validate data for login webpage.

```
$validator->notEmpty('username', 'We need username.')->add(
   'username', 'validFormat', ['rule' => 'email','message' => 'E-mail must be valid']);

$validator->notEmpty('password', 'We need password.');
$errors = $validator->errors($this->request->data());
```

Using the $validator object, we have first called the **notEmpty()** method, which will ensure that the username must not be empty. After that, we have chained the **add()** method to add one more validation for proper email format.

After that we have added validation for password field with notEmpty() method, which will confirm that password field must not be empty.

Example

Make Changes in the config/routes.php file as shown in the following program.

config/routes.php

```
<?php
use Cake\Http\Middleware\CsrfProtectionMiddleware;
use Cake\Routing\Route\DashedRoute;
use Cake\Routing\RouteBuilder;
$routes->setRouteClass(DashedRoute::class);
$routes->scope('/', function (RouteBuilder $builder) {
   $builder->registerMiddleware('csrf', new CsrfProtectionMiddleware([
      'httpOnly' => true,
   ]));
   $builder->applyMiddleware('csrf');
   //$builder->connect('/pages',['controller'=>'Pages','action'=>'display', 'home']);
   $builder->connect('validation',['controller'=>'Valids','action'=>'index']);
   $builder->fallbacks();
});
```

Create a **ValidsController.php** file at **src/Controller/ValidsController.php.** Copy the following code in the controller file.

src/Controller/ValidsController.php

```
<?php
   namespace App\Controller;
   use App\Controller\AppController;
   use Cake\Validation\Validator;
   class ValidsController extends AppController{
      public function index(){
         $validator = new Validator();
         $validator->notEmpty('username', 'We need username.')->add(
            'username', 'validFormat', ['rule' => 'email','message' => 'E-mail must be valid']
         $validator->notEmpty('password', 'We need password.');
         $errors = $validator->errors($this->request->getData());
         $this->set('errors',$errors);
      }
   }
?>
```

Create a directory **Valids** at **src/Template** and under that directory create a **View** file called **index.php.** Copy the following code in that file.

src/Template/Valids/index.php

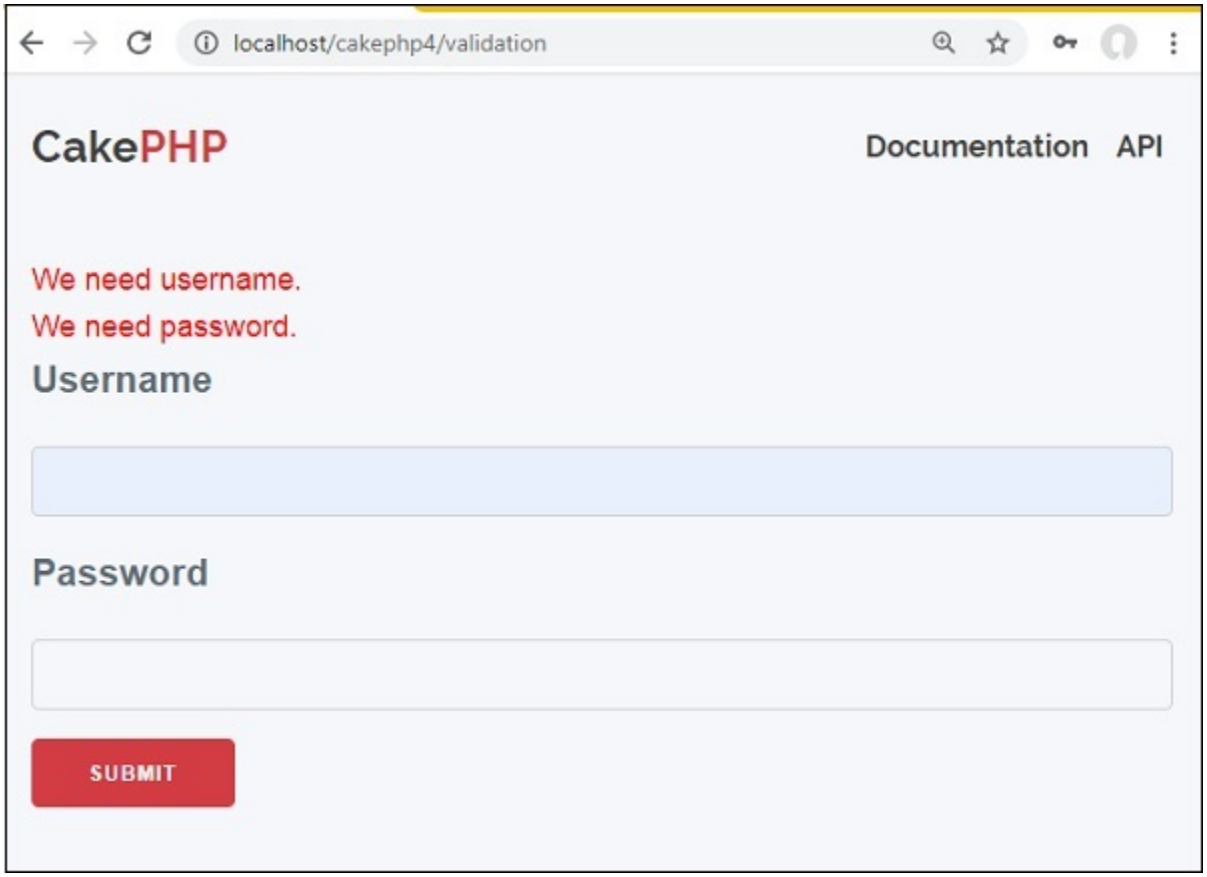
```
<?php
   if($errors) {
      foreach($errors as $error)
      foreach($error as $msg)
      echo '<font color="red">'.$msg.'</font><br>';
   } else {
      echo "No errors.";
   }
   echo $this->Form->create(NULL,array('url'=>'/validation'));
   echo $this->Form->control('username');
   echo $this->Form->control('password');
   echo $this->Form->button('Submit');
   echo $this->Form->end();
?>
```

Execute the above example by visiting the following URL –

http://localhost/cakephp4/validation

Output

Click on the submit button without entering anything. You will receive the following output.



Http - Client

The http client can be used to make requests like GET, POST, PUT etc.

To work with http client, add the following –

```
use Cake\Http\Client;
```

Let us work on example to understand working of HTTP client.

HTTP GET Method

To get the data from give http url, you can do as follows –

```
$response = $http->get('https://jsonplaceholder.typicode.com/users');
```

In case, you need to pass some query params, they can be passed as follows –

```
$response = $http->get('https://jsonplaceholder.typicode.com/users', ["id", 1]);
```

To get the response, you can do as follows –

For **normal text data** –

```
$response->getBody();
```

For **Json** –

```
$response->getJson();
```

For **Xml** –

```
$response->getXml()
```

Example

Make Changes in the config/routes.php file as shown in the following program.

config/routes.php

```
<?php
use Cake\Http\Middleware\CsrfProtectionMiddleware;
use Cake\Routing\Route\DashedRoute;
use Cake\Routing\RouteBuilder;
$routes->setRouteClass(DashedRoute::class);
$routes->scope('/', function (RouteBuilder $builder) {
   $builder->registerMiddleware('csrf', new CsrfProtectionMiddleware([
      'httpOnly' => true,
   ]));
   $builder->applyMiddleware('csrf');
   //$builder->connect('/pages',['controller'=>'Pages','action'=>'display', 'home']);
   $builder->connect('getData',['controller'=>'Requests','action'=>'index']);
   $builder->fallbacks();
});
```

Create a **RequestsController.php** file at **src/Controller/RequestsController.php.** Copy the following code in the controller file.

src/Controller/RequestsController.php

```
<?php
   namespace App\Controller;
   use App\Controller\AppController;
   use Cake\Http\Client;
   class RequestsController extends AppController{
      public function index(){
         $http = new Client();
         $response = $http->get('https://jsonplaceholder.typicode.com/users');
         $stream = $response->getJson();
         $this->set('response',$stream);
      }
```

```
   }
?>
```

Create a directory **Requests** at **src/Template** and under that directory create a **View** file called **index.php.** Copy the following code in that file.

src/Template/Requests/index.php

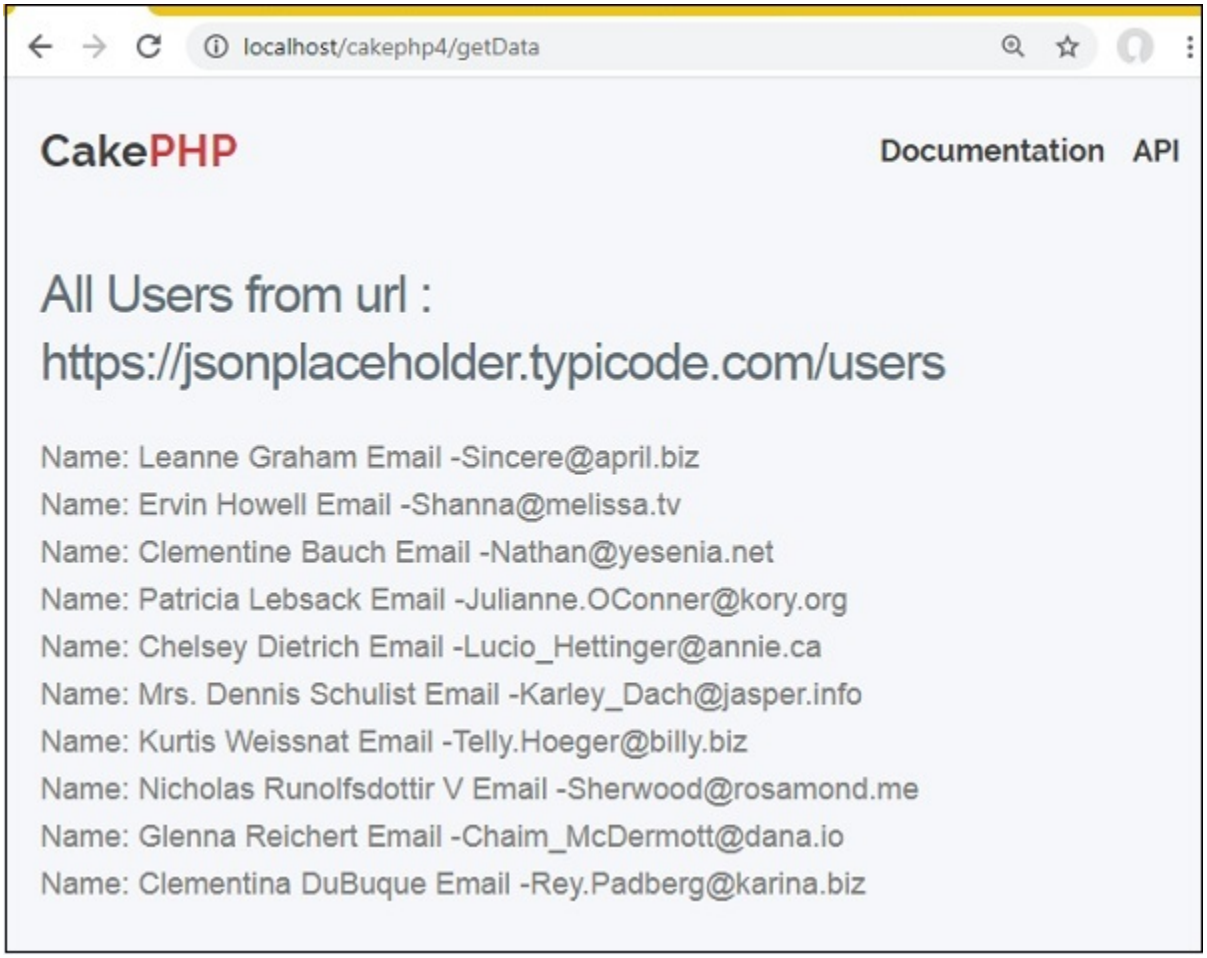
```
<h3>All Users from url : https://jsonplaceholder.typicode.com/users</h3>
<?php
   if($response) {
      foreach($response as $res => $val) {
         echo '<font color="gray">Name: '.$val["name"].' Email -'.$val["email"].'</font><br>';
      }
   }
?>
```

Execute the above example by visiting the following URL –

```
http://localhost/cakephp4/getData
```

Output

Click on the submit button without entering anything. You will receive the following output.



HTTP POST Method

To work with post, you need to call $http client as follows –

```
$response = $http->post('yoururl', data);
```

Let us see one example on the same.

Example

Make Changes in the config/routes.php file as shown in the following program.

config/routes.php

```
<?php
use Cake\Http\Middleware\CsrfProtectionMiddleware;
use Cake\Routing\Route\DashedRoute;
use Cake\Routing\RouteBuilder;
$routes->setRouteClass(DashedRoute::class);
$routes->scope('/', function (RouteBuilder $builder) {
   $builder->registerMiddleware('csrf', new CsrfProtectionMiddleware([
      'httpOnly' => true,
   ]));
   $builder->applyMiddleware('csrf');
   //$builder->connect('/pages',['controller'=>'Pages','action'=>'display', 'home']);
```

```
    $builder->connect('postData',['controller'=>'Requests','action'=>'index']);
    $builder->fallbacks();
});
```

Create a **RequestsController.php** file at **src/Controller/RequestsController.php.** Copy the following code in the controller file. Ignore if already created.

src/Controller/RequestsController.php

```
<?php
    namespace App\Controller;
    use App\Controller\AppController;
    use Cake\Http\Client;
    class RequestsController extends AppController{
        public function index(){
            $http = new Client();
            $response = $http->post('https://postman-echo.com/post', [
                'name'=> 'ABC',
                'email' => 'xyz@gmail.com'
            ]);
        }
    }
?>
```

Create a directory **Requests** at **src/Template** and under that directory create a **View** file called index.php. Copy the following code in that file.

src/Template/Requests/index.php

```
<h3>Testing Post Method</h3>
```

Execute the above example by visiting the following URL –

http://localhost/cakephp4/postData

Output

Given below is the output of the code –

Similarly, you can try for PUT method.

```
$http = new Client();
$response = $http->put('https://postman-echo.com/post', [
   'name'=> 'ABC',
   'email' => 'xyz@gmail.com'
]);
```

CakePHP - Pagination

If we want to show a set of data that is huge, we can use pagination and this feature is available with cake php 4 which is very easy to use.

We have a table titled “articles” with following data –

Options

	id	title	details	status
Edit Copy Delete	1	article 1	This is article 1 details	1
Edit Copy Delete	2	article 2	This is article 2 details	1
Edit Copy Delete	3	article 3	This is article 3 details	1
Edit Copy Delete	4	article 4	This is article 4 details	1
Edit Copy Delete	5	article 5	This is article 5 details	1
Edit Copy Delete	6	article 6	This is article 6 details	1
Edit Copy Delete	7	article 7	This is article 7 details	1
Edit Copy Delete	8	article 8	This is article 8 details	1
Edit Copy Delete	9	article3	This is article 9 details	1
Edit Copy Delete	10	article 10	This is article 10 details	1

Let us use pagination to display the data in the form of pages, instead of showing them all together.

Example

Make Changes in the config/routes.php file as shown in the following program.

config/routes.php

```
<?php
use Cake\Http\Middleware\CsrfProtectionMiddleware;
use Cake\Routing\Route\DashedRoute;
use Cake\Routing\RouteBuilder;
$routes->setRouteClass(DashedRoute::class);
$routes->scope('/', function (RouteBuilder $builder) {
   $builder->registerMiddleware('csrf', new CsrfProtectionMiddleware([
      'httpOnly' => true,
   ]));
   $builder->applyMiddleware('csrf');
   //$builder->connect('/pages',['controller'=>'Pages','action'=>'display', 'home']);
   $builder->connect('posts',['controller'=>'Posts','action'=>'index']);
   $builder->fallbacks();
});
```

Create a **PostsController.php** file at **src/Controller/PostsController.php.** Copy the following code in the controller file. Ignore, if already created.

src/Controller/PostsController.php

```
<?php
   namespace App\Controller;
   use App\Controller\AppController;
   class PostsController extends AppController {
      public function index(){
         $this->loadModel('articles');
         $articles = $this->articles->find('all')->order(['articles.id ASC']);
         $this->set('articles', $this->paginate($articles, ['limit'=> '3']));
      }
   }
?>
```

The data from articles table is fetched using –

```
$this->loadModel('articles');
$articles = $this->articles->find('all')->order(['articles.id ASC']);
```

To apply pagination and we would show the data with 3 per records and the same is done as follows –

```
$this->set('articles', $this->paginate($articles, ['limit'=> '3']));
```

This is enough to activate pagination on the *articles* tables.

Create a directory **Posts** at **src/Template** and under that directory create a **View**file called index.php. Copy the following code in that file.

src/Template/Posts/index.php

```
<div>
<?php foreach ($articles as $key=>$article) {?>
<a href="#">
   <div>
   <p><?= $article->title ?> </p>
   <p><?= $article->details ?></p>
   </div>
</a>
<br/>
<?php
}
?>
<ul class="pagination">
<?= $this->Paginator->prev("<<") ?>
<?= $this->Paginator->numbers() ?>
<?= $this->Paginator->next(">>") ?>
</ul>
</div>
```

The pagination for the list of pages is done as follows –

```
<ul class="pagination">
<?= $this->Paginator->prev("<<") ?>
<?= $this->Paginator->numbers() ?>
<?= $this->Paginator->next(">>") ?>
</ul>
```

Execute the above example by visiting the following URL –

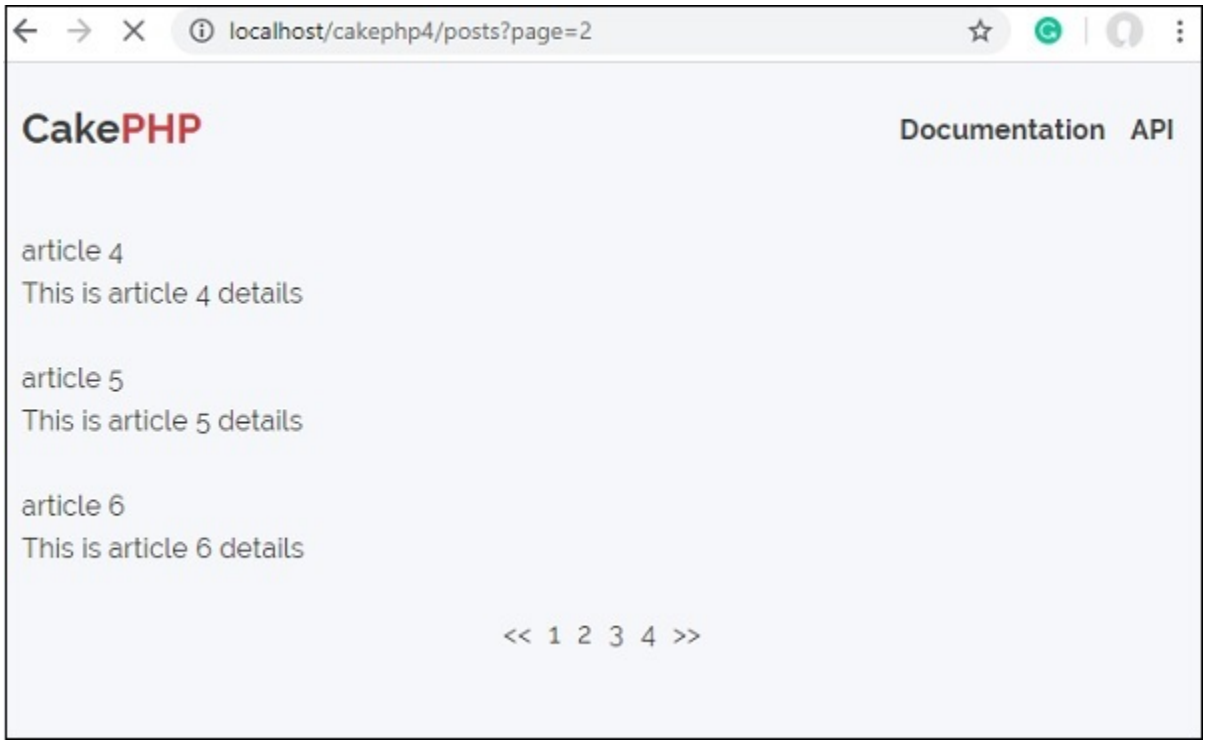
http://localhost/cakephp4/posts

Output

When you run the code, you will see the following output –

Click on the numbers below, to switch to next page, or use the next or previous button.

For example



You will see that page=2 is appended to the page url in the browser.

CakePHP - Date and Time

To work with date and time in cakephp4, we are going to make use of the available FrozenTime class.

To work with date and time, include the class in your controller

```
use Cake\I18n\FrozenTime;
```

Let us work, on an example and display date and time, using FrozenTime class.

Example

Make Changes in the config/routes.php file as shown in the following program.

config/routes.php

```
<?php
use Cake\Http\Middleware\CsrfProtectionMiddleware;
use Cake\Routing\Route\DashedRoute;
use Cake\Routing\RouteBuilder;
$routes->setRouteClass(DashedRoute::class);
$routes->scope('/', function (RouteBuilder $builder) {
   $builder->registerMiddleware('csrf', new CsrfProtectionMiddleware([
      'httpOnly' => true,
   ]));
   $builder->applyMiddleware('csrf');
   //$builder->connect('/pages',['controller'=>'Pages','action'=>'display', 'home']);
   $builder->connect('datetime',['controller'=>'Dates','action'=>'index']);
   $builder->fallbacks();
});
```

Create a **DatesController.php** file at **src/Controller/DatesController.php.** Copy the following code in the controller file. Ignore if already created.

src/Controller/DatesController.php

```
<?php
   namespace App\Controller;
   use App\Controller\AppController;
   use Cake\I18n\FrozenTime;
   class DatesController extends AppController{
      public function index(){
         $time = FrozenTime::now();
         $now = FrozenTime::parse('now');
         $_now = $now->i18nFormat('yyyy-MM-dd HH:mm:ss');
         $this->set('timenow', $_now);
         $now = FrozenTime::parse('now');
         $nice = $now->nice();
         $this->set('nicetime', $nice);
         $hebrewdate = $now->i18nFormat(\IntlDateFormatter::FULL, null, 'en-IR@calendar=hebrev
         $this->set("hebrewdate",$hebrewdate);
         $japanesedate = $now->i18nFormat(\IntlDateFormatter::FULL, null, 'en-IR@calendar=
```

```
            $this->set("japanesedate",$japanesedate);
            $time = FrozenTime::now();
            $this->set("current_year",$time->year);
            $this->set("current_month",$time->month);
            $this->set("current_day",$time->day);
        }
    }
?>
```

Create a directory **Dates** at **src/Template** and under that directory create a **View** file called index.php. Copy the following code in that file.

src/Template/Dates/index.php

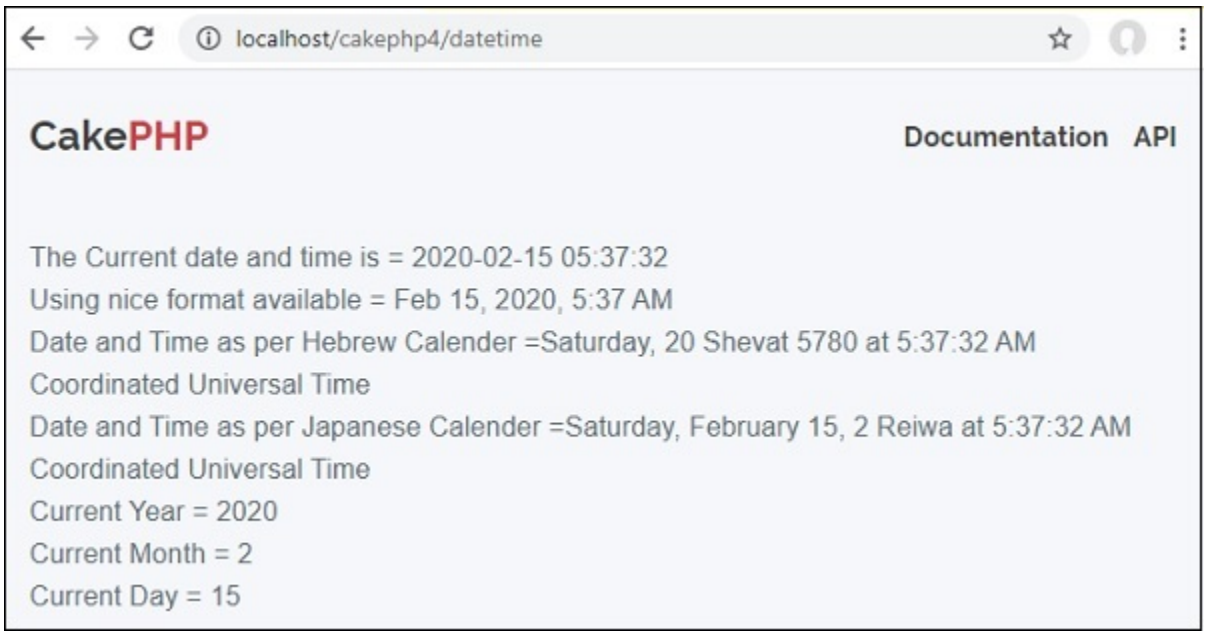
```
<?php
    echo "The Current date and time is = ".$timenow;
    echo "<br/>";
    echo "Using nice format available = ".$nicetime;
    echo "<br/>";
    echo "Date and Time as per Hebrew Calender =" .$hebrewdate;
    echo "<br/>";
    echo "Date and Time as per Japanese Calender =" .$japanesedate;
    echo "<br/>";
    echo "Current Year = ".$current_year;
    echo "<br/>";
    echo "Current Month = ".$current_month;
    echo "<br/>";
    echo "Current Day = ".$current_day;
?>
```

Execute the above example by visiting the following URL –

http://localhost/cakephp4/datetime

Output

When you run the code, you will see the following output –



CakePHP - File upload

To work on file upload we are going to use the form helper. Here, is an example for file upload.

Example

Make Changes in the config/routes.php file, as shown in the following program.

config/routes.php

```
<?php
use Cake\Http\Middleware\CsrfProtectionMiddleware;
use Cake\Routing\Route\DashedRoute;
use Cake\Routing\RouteBuilder;
$routes->setRouteClass(DashedRoute::class);
$routes->scope('/', function (RouteBuilder $builder) {
   $builder->registerMiddleware('csrf', new CsrfProtectionMiddleware([
      'httpOnly' => true,
   ]));
   $builder->applyMiddleware('csrf');
   //$builder->connect('/pages',['controller'=>'Pages','action'=>'display', 'home']);
   $builder->connect('fileupload',['controller'=>'Files','action'=>'index']);
   $builder->fallbacks();
});
```

Create a **FilesController.php** file at **src/Controller/FilesController.php.** Copy the following code in the controller file. Ignore, if already created.

Create uploads/ directory in src/. The files uploaded will be saved in uploads/ folder.

src/Controller/FilesController.php

```
<?php
   namespace App\Controller;
   use App\Controller\AppController;
   use Cake\View\Helper\FormHelper;
   class FilesController extends AppController {
      public function index(){
         if ($this->request->is('post')) {
            $fileobject = $this->request->getData('submittedfile');
            $uploadPath = '../uploads/';
            $destination = $uploadPath.$fileobject->getClientFilename();
            // Existing files with the same name will be replaced.
            $fileobject->moveTo($destination);
         }
      }
   }
?>
```

Create a directory **Files** at **src/Template** and under that directory create a **View** file called **index.php.** Copy the following code in that file.

src/Template/Files/index.php

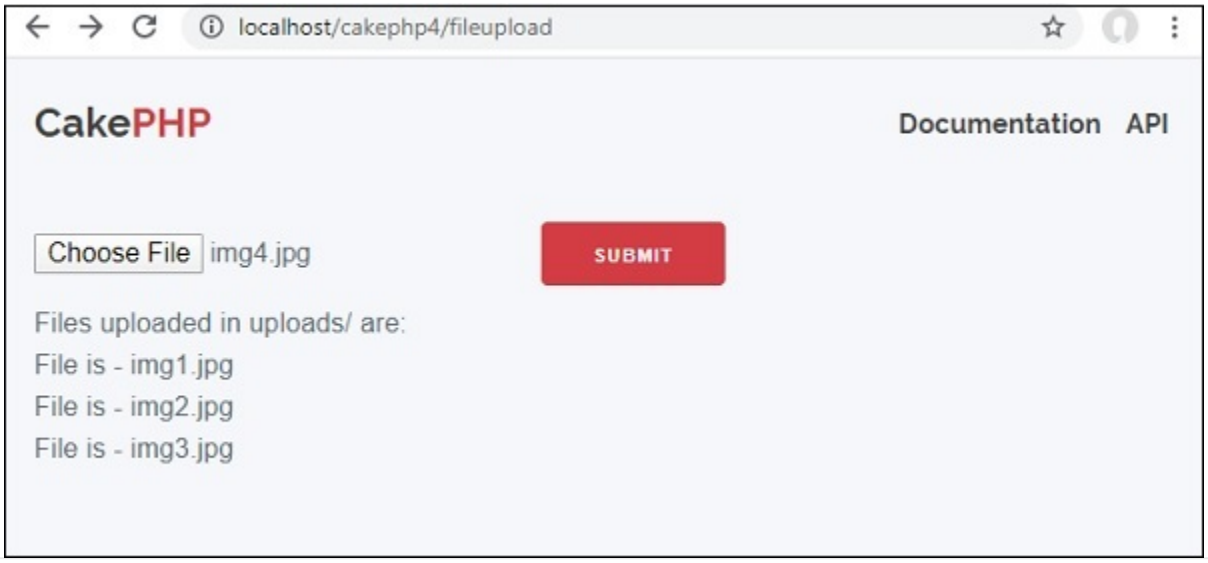
```
<?php
   echo $this->Form->create(NULL, ['type' => 'file']);
   echo $this->l;Form->file('submittedfile');
   echo $this->Form->button('Submit');
   echo $this->Form->end();
   $uploadPath ='../uploads/';
   $files = scandir($uploadPath, 0);
   echo "Files uploaded in uploads/ are:<br/>";
   for($i = 2; $i < count($files); $i++)
      echo "File is - ".$files[$i]."<br>";
?>
```

The files saved in uploads/ folder is listed for the user. Execute the above example by visiting the following URL –

http://localhost/cakephp4/fileupload –

Output

When you execute the above code, you should see the following output –



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