



Core Concepts & Configuration

MVC Structure

Model: Represents data and business logic.

View: Handles the presentation of data to the user (HTML, etc.).

Controller: Manages requests, interacts with models, and loads views.

Directory Structure: `app`, `system`, `public`, `writable`

`app` - Application specific code (controllers, models, views, etc.)

`system` - Core CodeIgniter files (do not modify).

`public` - Contains the `index.php` file and assets (CSS, JS, images).

`writable` - Directory for logs, cache, and uploads.

Configuration (app/Config/App.php)

`$baseURL` The base URL of your application (e.g., `http://localhost:8080`)

`$indexPage` The name of your index page (usually `index.php` or empty string to remove it.)

`$encryptionKey` Encryption key for secure sessions and data.

`$defaultLocale`

The default locale for your application (e.g., `en`, `fr`).
`ale`

`$sessionDriver` The session driver to use (`FileHandler`, `DatabaseHandler`, etc.).

`$timezone` The timezone for your application (e.g., `America/Los_Angeles`).

Controllers & Routing

Creating a Controller

Create a file in `app\Controllers/` (e.g., `MyController.php`)

```
<?php
```

```
namespace App\Controllers;
```

```
use CodeIgniter\Controller;
```

```
class MyController extends Controller
```

```
{
```

```
    public function index()
```

```
{
```

```
        return 'Hello, World!';
```

```
}
```

```
}
```

Access the controller via URL (e.g.,

`http://localhost:8080/mycontroller`)

Routing

`app\Config\Routes.php` Configuration file for defining routes.

`$routes->get('path', 'Controller::method');` Defines a GET route.

`$routes->post('path', 'Controller::method');` Defines a POST route.

`$routes->resource('photos');` Creates RESTful resource routes for a controller named 'Photos'.

Route Parameters

`$routes->get('users/(:num)', 'Users::show/$1');`

Auto Route (Improved)

Set `$routes->setAutoRoute(true);` to automatically route based on controller and method names.

Request Object

Accessing the request object in a controller:

```
$request = \Config\Services::request();
$data = $request->getPost(); // Get POST data
$data = $request->getGet(); // Get GET data
```

```
$ userAgent = $request->getUserAgent();
$ ipAddress = $request->getIPAddress();
```

Models & Database

Creating a Model

Create a file in `app/Models/` (e.g.,

`UserModel.php`)

```
<?php

namespace App\Models;

use CodeIgniter\Model;

class UserModel extends Model
{
    protected $table      = 'users';
    protected $primaryKey = 'id';

    protected $useAutoIncrement = true;

    protected $returnType     = 'array';
    protected $useSoftDeletes = true;

    protected $allowedFields = ['name',
        'email'];

    protected $useTimestamps = true;
    protected $createdField  =
        'created_at';
    protected $updatedField  =
        'updated_at';
    protected $deletedField  =
        'deleted_at';

    protected $validationRules   = [];
    protected $validationMessages = [];
    protected $skipValidation   =
        false;
}
```

Database Configuration (app/Config/Database.php)

<code>\$defau</code>	Default database connection settings.
<code>lt</code>	
<code>hostna</code>	Database server hostname (e.g.,
<code>me</code>	<code>localhost</code>).
<code>userna</code>	Database username.
<code>me</code>	
<code>passwo</code>	Database password.
<code>rd</code>	
<code>databa</code>	Database name.
<code>se</code>	
<code>DBDriv</code>	Database driver (e.g., <code>MySQLi</code> ,
<code>er</code>	<code>Postgre</code> , <code>SQLite3</code>).

Database Queries

```
$db = \Config\Database::connect();

// Simple query
$query = $db->query('SELECT * FROM
users');

foreach ($query->getResult() as $row) {
    echo $row->name;
}

// Using Query Builder
$builder = $db->table('users');
$builder->select('id, name, email');
$query = $builder->get();

// Insert data
$data = [
    'name' => 'John Doe',
    'email' => 'john.doe@example.com',
];
$builder->insert($data);

// Update data
$data = ['email' =>
    'new.email@example.com'];
$builder->where('id', 1);
$builder->update($data);
```

Views & Templating

Creating a View

Create a file in `app/Views/` (e.g.,

`welcome_message.php`)

```
<!DOCTYPE html>
<html>
<head>
    <title>Welcome</title>
</head>
<body>
    <h1>Hello, <?php echo $name; ?>!
</h1>
</body>
</html>
```

Loading Views in Controller

```
<?php

namespace App\Controllers;

use CodeIgniter\Controller;

class Home extends Controller
{
    public function index()
    {
        $data = ['name' =>
            'CodeIgniter'];
        return view('welcome_message',
        $data);
    }
}
```

Templating with View Layouts

Create a layout file (e.g.,

`app/Views/layouts/default.php`):

```
<!DOCTYPE html>
<html>
<head>
    <title><?php echo $title; ?></title>
</head>
<body>
    <?= $this->renderSection('content') ?>
</body>
</html>
```

Create a view that extends the layout (e.g.,

`app/Views/home.php`):

```
<?= $this->extend('layouts/default') ?>

<?= $this->section('content') ?>
    <h1>Welcome Home!</h1>
<?= $this->endSection() ?>
```

In Controller:

```
public function index()
{
    $data['title'] = 'Home Page';
    return view('home', $data);
}
```