

CodeIgniter 4 Web Application Foundations

MVC, data, sessions and a small application project

FA-0722 · 4 days

Software Development

Introduction

Build a small web application with CodeIgniter 4, combining MVC concepts with database operations, sessions, files and error handling. The course balances explanations with a guided project and review.

The source mixes older terminology and omits a Day3 heading. This course makes the current framework version explicit and reorganises the four days without implying CodeIgniter3 applications are directly compatible with version4.

Learning outcomes

- Explain dynamic web requests and the roles of models, views and controllers.
- Install and configure a compatible CodeIgniter 4 project and define routes.
- Implement and validate a small CRUD workflow using a database and model.
- Use sessions, cookies, helpers, libraries and appropriate error handling.
- Handle a selected file-upload and email/localisation example.
- Build and review a modest login/dashboard project with basic security controls.

Prerequisites

- Basic PHP programming, HTML and relational SQL; familiarity with functions and classes.
- A compatible PHP runtime and required extensions, Composer or the supported manual installation package, an editor and supplied database.

- Approved local development environment and sample data; real mail delivery or live deployment is not required.

Training outline

1. Day 1 — Framework, MVC and CRUD

- Install CodeIgniter 4, inspect its namespaced application structure, configuration and public document root.
- Models, controllers, views and explicitly defined routes; distinguish framework4 from older CodeIgniter3 examples.
- Create a sample database/model and implement create, read, update and delete operations.
- Validate input, inspect output and trace request routing.

2. Day 2 — Sessions, libraries and security

- Cookies and sessions: lifecycle, storage and appropriate configuration.
- Use selected framework libraries and helpers; review redirects and error handling.
- Introduce authentication versus authorisation, password handling, CSRF protection and output escaping.
- Use current events or filters for relevant extension points; older hooks are historical framework3 terminology, not a direct copy-and-paste migration.
- Assess the small CRUD example and introduce caching with appropriate privacy/invalidation considerations.

3. Day 3 — Files, email and localisation

- Validate a sample file upload, restrict accepted inputs and store files appropriately.
- Inspect application errors and logs without exposing sensitive details to end users.
- Configure a supplied email example with local capture or approved test delivery.
- Introduce internationalisation/localisation and selected language output.
- Review database structure and scope the final project.

4. Day 4 — Small application project and review

- Implement a modest login flow using a suitable maintained authentication approach.
- Build a dashboard with shared header/footer views, a sample user listing and logout.
- Apply permissions to protected routes and review session, validation and error behaviour.

- Test selected success and failure paths, document unresolved issues and identify next steps; the exercise is not a production security certification.