

COURSE ABSTRACT

Merative Cúram Citizen Engagement Client-Side for Developers

CUR106

Course Description

This course prepares developers to build and customize Citizen Engagement solutions by using the Merative Cúram Universal Access (UA) Responsive Web Application and the Cúram Design System.

Learners explore how the UA Responsive Web Application supports Universal Access functions across devices and how it is built with the Cúram Design System, React, and Redux. The course covers the structure of the UA Responsive Web Application, page development with Cúram Design System components, custom state management with Redux, and outlines the server configuration for Intelligent Evidence Gathering (IEG) scripts, REST APIs, and Universal Access configuration that support the web application.

Learners build these skills through instructor-led or self-paced lessons and hands-on exercises in a lab environment. They review working examples, extend and customize Universal Access features, and complete practical activities that reinforce the concepts needed to design and implement a simple end-to-end citizen application experience. More than 60% of the course time is spent completing exercises.

General Information

Delivery Method: Classroom/Instructor-Led Training (ILT) and self-paced with lab.

Audience: This intermediate-level course is aimed at technical staff who will develop implementations based on the UA Responsive Web Application.

Topics: The course covers the following topics:

- Functions and features of the UA Responsive Web Application.
- Developing pages by using the Cúram Design System.
- Building Features in the Web App.

- Integrating with the Cúram Server.

Learning Objectives: After completing the course, learners should be able to:

- List features provided by the Universal Access (UA) starter Web App.
- Describe the purpose of the development technologies and tools used to build UA Web Apps.
- Use Cúram Design System components to build pages.
- Configure the theme, branding, and style of pages.
- Write basic unit tests for components and logic.
- Customize and extend the UA Web App features compliantly.
- Fetch mock and server data using REST APIs.
- Manage application state using Redux.
- Explain how the web application uses IEG scripts to gather data.
- Identify the UA artifacts that must be configured on the server to enable UA Web App features.
- Use the accessibility and localization features provided by the app.
- Configure key security features implemented in UA Web App solutions.
- Summarize the release, installation, deployment, support, and upgrade processes.

Prerequisites: Learners should have some experience using the following technologies:

- HTML, CSS, and JavaScript (ES6 or later)
- React and Redux.

Learners must have completed *Merative Cúram Technical Overview*.

The following course is recommended but is not required:

- *Merative Cúram GHHS Web Design System for Designers*

Duration: Approx. 40 hours self-paced or 4 days instructor-led.

Skill Level: Intermediate

Badge: Learners can earn a badge by successfully completing a quiz and customizing a feature in the lab environment.

Version: This course was initially developed for Cúram 8.2.1. It covers core concepts that do not change much from version to version. Relevant new features introduced after the course was first published are included in the course Addendum.

Note

- The course duration gives learners an estimate of how much time they need to allocate to the course. The course duration does not specify the actual time required to complete the course, which varies by learner. The course agenda shows the schedule for a classroom (ILT) delivery. Additional time is allowed for daily reviews and exercise reviews. Learners taking this course in a self-paced environment should allow more time to complete exercises.

Course Agenda

Unit 1 – Getting Started with UA Web Application Development

Lesson 1 – Course Introduction

Duration: 15 minutes

Learning objectives: After completing this lesson, learners should be able to:

- List the course objectives.
- Outline the course format and resources.

Lesson 2 – Introduction to Developing Solutions with the UA Web App

Duration: 35 minutes

Learning objectives: After completing this lesson, learners should be able to:

- List the main features that the Universal Access Module provides to citizens.
- Describe the high-level technical architecture of the UA Web App.
- Outline typical development tasks for creating citizen-facing solutions.

Exercise 1 – View End-User Features of the UA Web App

Duration: 30 minutes

Lesson 3 – Review Basic Frontend Technologies and Tools

Duration: 30 minutes

Learning objectives: After completing this lesson, learners should be able to:

- List the types of tools and technologies used for frontend development.
- Explain the purpose and typical usage of the following tools and technologies:
 - CSS.
 - Modern JavaScript.
 - npm.
 - Visual Studio (VS) Code and extensions.
 - ESLint.
 - Browser development tools.
 - GitHub.
 - Storybook.

Exercise 2 – Use VS Code to View and Run a Simple Application

Duration: 40 minutes

Lesson 4 – Review React and Associated Tools

Duration: 35 minutes

Learning objectives: After completing this lesson, learners should be able to:

- Outline the purpose and key features of React.
- State the purpose of Vite for building apps.
- List tips for developing applications using React.

- Describe how state is managed in React applications.
- List and describe the browser tools used for troubleshooting and debugging React applications.

Exercise 3 – Create and Troubleshoot a Simple React Component

Duration: 45 minutes

Unit 2 – Developing Pages Using the Cúram Design System

Lesson 1 – Introduction to the Cúram Design System

Duration: 20 minutes

Learning objectives: After completing this lesson, learners should be able to:

- Outline the features of the Cúram Design System.
- Describe where it fits into the development architecture.
- Locate the Cúram Design System Packages.

Exercise 4 – Review Cúram Design System packages

Duration: 20 minutes

Lesson 2 – Using Design System Components

Duration: 35 minutes

Learning objectives: After completing this lesson, learners should be able to:

- List the types of components provided by the Cúram Design System.
- Describe the documentation that explains how to use each component.
- Identify Cúram Design System components when viewing application pages.
- Use component documentation to build pages using the Design System.

Exercise 5 – Create a Simple Page

Duration: 35 minutes

Exercise 6 – Create a Page with a Header and Footer

Duration: 50 minutes

Lesson 3 – Using Patterns

Duration: 15 minutes

Learning objectives: After completing this lesson, learners should be able to:

- List the patterns provided by the Cúram Design System.

Exercise 7 – Add a Pattern to a Page

Duration: 40 minutes

Lesson 4 – Theming and Styling

Duration: 25 minutes

Learning objectives: After completing this lesson, learners should be able to:

- Describe how theming and styling are used.
- Describe the Block, Element, Modifier (BEM) syntax for Cúram Design System CSS classes.
- Use utilities to modify how components appear.
- Describe how SCSS is used by the Cúram Design.

Exercise 8 – Change the Theme and Style

Duration: 45 minutes

Lesson 5 – Testing

Duration: 25 minutes

Learning objectives: After completing this lesson, learners should be able to:

- List the types of testing for web apps.
- Describe common test tools.
- Outline the features Cúram provides for testing.
- List good practices for testing.

Exercise 9 – Write Simple Unit Tests

Duration: 50 minutes

Unit 3 – Building Features in the UA Web App

Lesson 1 – UA Web App Development Environment

Duration: 30 minutes

Learning objectives: After completing this lesson, learners should be able to:

- Differentiate between the lightweight and full development environments.
- Describe how to install and start the UA Web App.
- Explain the purpose of the UA Web App packages.
- Identify the key folders and files in the starter app project structure.
- List the customizable elements of the UA Web App and outline the approach for customizing them.

Exercise 10 – Explore the UA Web App Development Environment

Duration: 35 minutes

Lesson 2 – Customizing Routes, Headers, and Footers

Duration: 20 minutes

Learning objectives: After completing this lesson, learners should be able to:

- Describe how routing is implemented in the UA Web App.
- Provide an overview of the ApplicationHeader component and its role in the application layout.

Exercise 11 – Customize the Application Header

Duration: 60 minutes

Exercise 12 – Route to a New Page

Duration: 45 minutes

Lesson 3 – Simulating REST APIs with the Mock Server

Duration: 20 minutes

Learning objectives: After completing this lesson, learners should be able to:

- Explain how REST APIs are accessed from the UA Web App.
- State the purpose of the Mock Server.
- Describe how to call the RESTService from your code.

Exercise 13 – Mock a REST API

Duration: 50 minutes

Lesson 4 – Managing State Using Redux

Duration: 50 minutes

Learning objectives: After completing this lesson, learners should be able to:

- Explain the role of Redux in managing application state.
- Examine how Universal Access modules use Redux to maintain and share state across components.
- List the benefits of using the Web Development Accelerator (WDA).

Exercise 14 – Review the use of Redux by the UA Web App

Duration: 50 minutes

Exercise 15 – Generate a Redux Module to Handle State

Duration: 60 minutes

Lesson 5 – Customizing Features

Duration: 20 minutes

Learning objectives: After completing this lesson, learners should be able to:

- Explain how features are structured in Universal Access.
- Outline the process for customizing a feature.
- Explore the standard Universal Access feature implementation.
- Examine the Sample Component to understand feature composition.

Exercise 16 – Customize a UA Web App Feature

Duration: 60 minutes

Unit 4 - Integrating With the Cúram Server

Lesson 1 – Working with REST APIs on the Server

Duration: 45 minutes

Learning objectives: After completing this lesson, learners should be able to:

- List the steps for implementing REST APIs on the server side.
- View out-of-the-box REST APIs using Swagger.
- Fetch data from the Cúram Server.

Exercise 17 – Explore REST APIs on the Cúram Server

Duration: 35 minutes

Lesson 2 – Developing and Running IEG Scripts

Duration: 35 minutes

Learning objectives: After completing this lesson, learners should be able to:

- Explain the purpose of Intelligent Evidence Gathering (IEG).
- Identify key IEG features and components.
- Explain the purpose of the Cúram Datastore.
- Outline the main steps involved in developing IEG scripts.
- Describe how the UA Web App integrates with the IEG Engine at runtime.

Exercise 18 – Explore IEG Scripts and Datastore Schemas

Duration: 40 minutes

Lesson 3 – Universal Access Server-Side Configuration

Duration: 25 minutes

Learning objectives: After completing this lesson, learners should be able to:

- Explain how Universal Access (UA) server artifacts support screening and program application.
- Identify the UA artifacts that must be configured on the server to enable UA Web App features.

Exercise 19 – Explore Server-Side Configuration

Duration: 30 minutes

Unit 5 - Additional Topics and Considerations

Lesson 1 – Localizing the UA Web App

Duration: 20 minutes

Learning objectives: After completing this lesson, learners should be able to:

- Explain how the UA Web App supports localization.
- Describe how to add languages.

Exercise 20 – Configure Languages and Localize Text

Duration: 40 minutes

Lesson 2 – Miscellaneous Features

Duration: 20 minutes

Learning objectives: After completing this lesson, learners should be able to:

- List the accessibility standards supported by the UA Web App.
- Explain how to check accessibility when adding custom pages.
- List considerations for adding reusable components.
- Describe how to integrate page view analytics in a UA Web App.
- Explain the purpose of the Connectivity Handler.

Lesson 3 – Security Considerations

Duration: 30 minutes

Learning objectives: After completing this lesson, learners should be able to:

- State the importance of securing the UA Web App.
- List recommended best practices for securing your app.
- Explain the configurable security features provided by Cúram that address common threats.

Exercise 21 – Review Account Security

Duration: 30 minutes

Lesson 4 – Deploy, Release, Upgrade, and Support

Duration: 30 minutes

Learning objectives: After completing this lesson, learners should be able to:

- Describe the deployment options for Citizen Engagement.
- Outline the release strategy for Citizen Engagement solutions.
- Explain how the UA Web App is upgraded.
- List the information to gather when troubleshooting and reporting support cases.

Exercise 22 – Review Release Information

Duration: 30 minutes