

COURSE ABSTRACT

Merative SPM Universal Access for Developers (Responsive Web Application)

9D81G

Course Description

This course describes how to customize and extend the out-of-the-box Cúram Social Program Management (SPM) Universal Access (UA) Responsive Web Application.

The UA Responsive Web Application allows citizens to access the functions of Universal Access on any device. The UA Responsive Web Application is built using the SPM Design System, the React JavaScript library, and Redux. Developers must understand the structure of the UA Responsive Web Application so that they can customize and extend it to produce high-quality citizen services. During the course, learners will install the web application, add custom pages, fetch data from the server, and manage custom state using Redux. In addition, developers will investigate the server configuration and REST APIs that are necessary to support the web application.

During the course learners will customize and extend the out-of-the-box starter web application using Design System components and REST APIs. Approximately 60% of the time is spent completing exercises.

General Information

Delivery Method: Classroom (ILT) and self-paced with lab.

Audience: This course is intended primarily for developers and technical architects who will work on SPM implementation projects that customize and extend the UA Responsive Web Application. This course is also useful for testers and support staff who will work with the UA Responsive Web Application.

- Topics:** The course covers the following topics:
- Overview of SPM Universal Access
 - Customizing the starter application
 - Integrating with the SPM server
 - Localization, security, and deployment

- Learning Objectives:** After completing the course, learners should be able to:
- Describe the purpose of SPM Universal Access
 - Outline the features of the SPM Universal Access Responsive Web Application
 - Install the SPM Universal Access Responsive Web Application
 - Customize and extend the starter web application
 - Mock REST APIs using the Mock Server
 - Implement state management using Redux
 - Describe how the web app fetches configuration and server data from the SPM server
 - Describe the support for creating localized applications
 - Outline the security features of the web app

- Prerequisites:** Learners must have completed the following course before taking this course:
- *Merative SPM Design System for Designers* (9D79G)
 - *Merative SPM Design System for Developers* (9D80G)

In addition, learners must have some experience of using the following technologies:

- HTML, CSS, JavaScript (ES6)
- JSX and React
- Redux

Duration: 16 Hours (2 days ILT)

Skill Level: Intermediate

Version: This course was last fully updated for an earlier version of the UA Responsive Web App SPM. However, the course covers core topics that do not change much. An Addendum lists the recent changes.

Notes

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. Learners taking this course in a self-paced environment should allow more time for exercises.

Course Agenda

Unit 1 – Getting Started

Lesson 1 – Course Introduction

Duration: 10 minutes

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

- List the course objectives.
- Outline the course format and resources.
- List sources of help.

Lesson 2 – Introduction to Universal Access

Duration: 20 minutes

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

- State the purpose of SPM Universal Access
- List the features that the Universal Access Module provides to citizens and agency workers
- Outline the technologies that are used on the server-side
- List the benefits that the new Universal Access client provides
- Provide a technical overview of the Universal Access responsive web application
- Use the starter app

Exercise 1 – Run the Starter Application

Duration: 25 minutes

Lesson 3 – Setting up the Development Environment

Duration: 20 minutes

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

- Describe the packages required for the web app
- List the prerequisites
- Install the Universal Access Responsive Web App
- Set up the development tools

Exercise 2 – Install the Universal Access Responsive Web Application

Duration: 35 minutes

Exercise 3 – Set up the Developer Tools

Duration: 20 minutes

Lesson 4 – Customization Overview

Duration: 20 minutes

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

- List typical developer tasks
- List the types of artifacts that can be customized
- Outline the compliant customization approach
- List developer documentation resources
- Explore the Universal Access packages

Exercise 4 – Explore the Universal Access Packages

Duration: 30 minutes

Unit 2 – Customizing the Starter Application

Lesson 1 – Customizing Routes, Headers, and Footers

Duration: 30 minutes

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

- Describe how routing is implemented in the web app
- Provide an overview of the ApplicationHeader component
- Customize the application header
- Add a route for a new page

Exercise 5 – Customize the Application Header

Duration: 35 minutes

Exercise 6 – Route to a New Page

Duration: 20 minutes

Lesson 2 – Using REST APIs

Duration: 15 minutes

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

- Explain how REST APIs can be accessed from your web app
- Describe the approach for calling REST APIs from the Universal Access starter app
- Retrieve data from a new mocked API

Exercise 7 – Mock a REST API

Duration: 35 minutes

Lesson 3 – Managing State Using Redux

Duration: 55 minutes

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

- State the purpose of Redux
- Outline the Flux pattern and how it is implemented by Redux
- Describe how Redux is used by Universal Access modules
- Refactor your component to use Redux

- List Redux resources

Exercise 8 – Using Redux to Handle State I

Duration: 40 minutes

Exercise 9 – Using Redux to Handle State II

Duration: 40 minutes

Exercise 10 – Using Redux to Handle State III

Duration: 10 minutes

Lesson 4 – Customizing Pages and Features

Duration: 10 minutes

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

- Describe how features are structured in Universal Access
- Outline how to customize a feature
- Explore Universal Access features
- Customize a feature

Exercise 11 – Explore a Feature

Duration: 20 minutes

Exercise 12 – Customize a Feature

Duration: 45 minutes

Unit 3 - Integrating with the SPM Server

Lesson 1 – Universal Access Configuration

Duration: 30 minutes

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

- List the type of data that is sent between the web app and the server
- Briefly describe the configuration required on the server
- Use Swagger to access information about the REST APIs
- View Universal Access server configuration
- Trace REST APIs in the browser

Exercise 13 – Explore SPM Server Configuration

Duration: 30 minutes

Lesson 2 – Intelligent Evidence Gathering (IEG)

Duration: 30 minutes

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

- Provide an overview of IEG
- Briefly describe how the IEG scripts are executed when a user applies for a benefit
- Outline how IEG configuration is used by the new responsive web app
- View an IEG script and Datastore schema
- Execute an IEG script and see the APIs that are called

Exercise 14 – Explore IEG Scripts

Duration: 20 minutes

Unit 4 - Additional Topics

Lesson 1 – Localizing the Web App

Duration: 15 minutes

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

- Describe how text can be customized using locale specific files
- Outline how the web app can support different languages
- Modify text for a language
- Add a language

Exercise 15 – Change Application Text

Duration: 15 minutes

Exercise 16 – Add a Language

Duration: 30 minutes

Lesson 2 – Miscellaneous Topics

Duration: 20 minutes

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

- Outline how authentication and authorization are provided in Universal Access
- Describe how the Authentication API can be used to develop custom pages for login
- Outline how the web app and server application can be deployed

Lesson 3 – Course Conclusion

Duration: 10 minutes

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

- Restate the course objectives
- List further training

Addendum

Learning objectives: The addendum provides an overview of the significant updates to the Universal Access Responsive Web App since the course was initially released. This includes the following topics:

- Support for additional business processes
- Web Development Accelerator (WDA)
- Test Framework
- Intelligent Evidence Gathering (IEG) changes
- Additional changes