

KOENIG SOLUTIONS · COURSE OUTLINE

MCP Apps Development

1 Day

DURATION

4

MODULES

24

TOPICS

RXM405

COURSE CODE

COURSE OVERVIEW

AI agents are increasingly expected to do more than return text and structured data. MCP Apps extend the Model Context Protocol with interactive interfaces, letting hosts present dashboards, forms, and review flows directly to users. This extension is becoming central to how developers build rich human-agent collaboration. Prepare to take on specialized roles such as AI Platform Engineer, MCP Developer, and AI Solutions Architect. Architect and deploy interactive MCP Apps within enterprise AI systems. The Linux Foundation has partnered with the AI/ML experts at rx-m to offer this course to the community.

WHO THIS COURSE IS FOR

- For developers, AI and platform engineers, architects, and technical leads who want to build and secure interactive MCP Apps for production agentic workflows.

PREREQUISITES

- Programming experience, preferably with JavaScript or TypeScript. Basic familiarity with MCP concepts such as clients, servers, tools, resources, and prompts. Experience with web UI development is helpful but not required.

Lab Info

- An Ubuntu cloud instance is provided. Students need the ability to SSH or browse to the cloud instance.

LEARNING OBJECTIVES

What You Will Learn

- Design MCP tools that return app views and build resources that render safely inside hosts. Connect apps through the app bridge and secure them against prompt injection and unsafe actions.

4 Modules, 24 Topics

01

MCP Apps Overview and Architecture

TOPICS

- MCP Apps as an official extension for interactive UI in MCP-capable hosts
- Relationship between MCP servers, tools, resources, hosts, app views, and users
- How app views differ from text, Markdown, structured data, RAG output, and traditional web apps
- Common use cases for dashboards, forms, review flows, media, maps, reports, and operational tools
- Host compatibility, lifecycle, trust boundaries, and production adoption considerations
- LAB: Map an MCP App use case to tools, resources, views, and host responsibilities

02

Building MCP App Tools and Resources

TOPICS

- Designing tools that return structured results and app-capable responses
- Serving app resources with the required metadata and content types
- Connecting app views to tool outputs, resources, prompts, and server capabilities
- Handling result refresh, state, errors, loading states, and partial data
- Packaging app code, assets, schemas, and server implementation for repeatable use
- LAB: Build an MCP server tool that returns an interactive app view

03

App Bridge, Interaction, and UX Patterns

TOPICS

- App-to-host communication, bridge APIs, and message flow
- Calling MCP tools from an app view and receiving fresh server results
- Designing forms, filters, drilldowns, visualizations, and action review screens
- Keeping users oriented with context, status, permissions, confidence, and provenance
- Human-in-the-loop confirmation for writes, external actions, and side effects
- LAB: Add interaction and server-backed updates to an MCP App view

04

Security, Testing, and Production Readiness

TOPICS

- Sandboxing, content security, untrusted content, and host rendering constraints
- Permission boundaries for tools, resources, user data, and external service access
- Protecting against prompt injection, data leakage, confused deputy risks, and unsafe actions
- Debugging app rendering, bridge communication, tool calls, schemas, and host compatibility
- Operational practices for versioning, observability, accessibility, and rollout
- LAB: Test, debug, and harden an MCP App before production use

WHAT IS INCLUDED

Everything You Need to Succeed

- Koenig course material for every module
- Hands-on exercises throughout the course
- Delivery by certified instructors and subject matter experts
- Course completion certificate from Koenig

ABOUT KOENIG

Who We Are

Established in 1993, Koenig Solutions is a globally recognised training provider with 35+ technology partnerships, 5,000+ training programmes and a network of certified instructors and subject matter experts, supporting individuals and enterprise teams worldwide.

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