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Call: 434-509-5680 or Email: sales@cloudcontraptions.com

AI for Legacy Code Modernization

Class Duration

14 hours of live training delivered over 2-3 days to accommodate your scheduling needs.

Student Prerequisites

- Professional software development experience, ideally with exposure to large or aging codebases
- Familiarity with at least one AI coding assistant

Target Audience

Senior software engineers, architects, and engineering managers responsible for modernizing legacy applications. Particularly relevant for teams facing large-scale migrations (language upgrades, framework replacements, cloud migrations) who want to use AI agents to accelerate the process without sacrificing reliability.

Description

For multi-week team training on this material, see the [AI for Legacy Modernization Academy](#).

Legacy codebases are where AI assistance can add disproportionate value — and where the risks of blind trust in AI output are highest. This course covers the AI-assisted modernization lifecycle: using agents to read, map, and document legacy code; building a test safety net before making changes; applying incremental migration patterns (strangler fig, anti-corruption layer) with AI assistance; agent-driven refactoring and language/framework upgrades; and validating the results. Participants work with realistic legacy code scenarios throughout the labs.

Learning Outcomes

- Use AI agents to generate documentation, dependency maps, and architectural summaries for unfamiliar legacy code.
- Build a test safety net for untested legacy modules using AI-assisted test generation.



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- Apply the strangler fig pattern with AI assistance for incremental component-by-component migration.
- Drive AI-assisted refactoring within defined boundaries to reduce technical debt progressively.
- Perform language and framework upgrade tasks (e.g., Python 2→3, Java 11→21, jQuery→React) with agent support.
- Validate AI-assisted changes against generated test suites and behavioral contracts.
- Design a phased modernization roadmap that incorporates AI tooling at appropriate stages.

Training Materials

Comprehensive courseware is distributed online at the start of class. All students receive a downloadable MP4 recording of the training.

Software Requirements

A modern IDE with AI coding assistant, language runtime matching the lab (Python or Java), and Git.

Training Topics

Reading Legacy Code with AI

- Generating module and function summaries
- Dependency graph extraction
- Identifying coupling and hidden assumptions
- Documenting behavior before changing it

Building a Test Safety Net

- AI-assisted test generation for untested modules
- Characterization tests: capturing existing behavior
- Mutation testing to validate test adequacy
- Coverage targets for legacy migration work

Incremental Migration Patterns

- Strangler fig pattern with AI assistance
- Anti-corruption layer design
- Branch-by-abstraction and feature flags
- Prioritizing components for early migration



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Agent-Driven Refactoring

- Safe refactoring scope definition for AI agents
- Automated rename, extract, and inline refactors
- Reducing cyclomatic complexity with agent assistance
- Review workflow for AI-driven refactoring diffs

Language and Framework Upgrades

- AI-assisted syntax and API migration
- Dependency upgrade and compatibility resolution
- Framework-specific migration labs (Python, Java, JavaScript)
- Validating behavior equivalence after migration

Architecture Documentation Generation

- Generating C4 model components from code
- API and data model documentation
- Architecture decision record (ADR) drafting with AI
- Keeping documentation synchronized with code changes

Modernization Roadmap Design

- Assessing modernization ROI with AI tooling
- Sequencing: documentation → tests → strangler → full migration
- Risk management in AI-assisted migration projects
- Communicating progress to stakeholders

Workshop

- Characterization test generation lab on sample legacy code
- Strangler fig migration exercise
- Q&A session