

Advanced Power Apps with SharePoint and Power Automate

Canvas app patterns for standard-connector and governance-constrained environments

FA-0550 · 2 days

Automation, RPA & Power Platform

Design maintainable SharePoint-backed canvas apps and approval workflows while understanding delegation, permissions and lifecycle-management limits.

Introduction

This two-day advanced workshop is for makers who already build Power Apps with SharePoint lists. It examines structured list design, reusable canvas-app patterns, delegation-aware formulas and Power Automate approval workflows in environments where premium capabilities may be unavailable.

The hands-on work uses selected standard-connector patterns and a small illustrative business application. SharePoint remains a list-based platform with relationship, security and scale constraints; it is not presented as a replacement for every relational database or enterprise application backend.

Standard connector classification does not guarantee licence entitlement or tenant access. Exercises require suitable Power Apps, SharePoint and Power Automate permissions and an approved training environment. The course does not assume access to Dataverse, SQL connectors, AI Builder or Copilot.

Learning outcomes

The course teaches participants to:

- Model related business data across SharePoint lists while recognising list-platform constraints.
- Create maintainable canvas-app screens, components, state and validation logic.
- Use delegation-aware filtering and evaluate performance/concurrency risks.

- Connect a canvas app to selected Power Automate workflows with error handling and ownership planning.
- Design an illustrative approval process with status changes, notifications and duplicate-submission checks.
- Distinguish app visibility from backend permissions and review sensitive-data exposure.
- Plan basic export/import, documentation and support while recognising limits without Dataverse-based ALM.

Prerequisites

- Prior Power Apps hands-on experience
- Experience building apps connected to SharePoint lists
- Basic understanding of Power Fx
- Familiarity with Power Automate fundamentals

Approved access to Power Apps, SharePoint and Power Automate with suitable permissions and licences for the chosen exercises; use synthetic business data in a training environment.

Training outline

1. Day 1 – SharePoint Architecture and Canvas App Design

Platform and Governance Constraints

- Understanding governance-driven limitations in modern enterprises
- Check connector classification, actual licence entitlement and tenant/governance restrictions for the selected workflow.
- Evaluate when SharePoint lists are an appropriate accessible data platform and when another backend is needed.
- Aligning solution architecture with organizational IT policies
- Avoiding overengineering in constrained environments

SharePoint List Data Patterns

- SharePoint as a structured data source, not just a document repository
- Related-list patterns: useful associations without assuming full relational-database behaviour.
- Parent-child list relationships
- Lookup columns and reference data patterns

- Choice fields vs managed metadata considerations
- Normalization strategies within SharePoint constraints
- Column indexing for performance
- Handling large lists and threshold considerations
- Security trimming using SharePoint permissions
- Data ownership and lifecycle planning

Canvas App Structure and Components

- Structuring multi-screen enterprise applications
- Component-based architecture and reuse
- Centralized configuration patterns
- Managing variables and application state cleanly
- Screen-to-screen data passing strategies
- Designing forms beyond the default generated form
- Custom validation logic patterns
- UX consistency and business usability standards
- Designing for long-term maintainability

Delegation and Performance

- Understanding SharePoint delegation limits
- Writing delegation-aware Power Fx formulas
- Filtering and sorting patterns: test delegation and expected data volumes before assuming scale.
- Reducing round trips to SharePoint
- Efficient use of collections
- Minimizing app load times
- Handling concurrency and version conflicts
- Monitoring and troubleshooting performance issues

2. Day 2 — Workflows, Security and Application Review

Power Automate Process Design

- When to move logic from Power Apps to Power Automate
- Architectural separation of UI and business process
- Triggering flows from Power Apps

- Passing structured parameters between app and flow
- Returning data back to Power Apps
- Designing reusable flows
- Background processing strategies
- Error handling and retry patterns
- Logging and monitoring flows
- Flow ownership and connection permissions; discuss approved account patterns and applicable licensing, not an assumed shared service-account workaround.

Approval and Status Patterns

- Multi-stage approval architectures
- Conditional approval branching
- Parallel vs sequential approval design
- Escalation strategies
- Notification best practices
- Preventing duplicate submissions
- Status-driven application design
- Building audit trails using SharePoint

Governance and Lifecycle Limits

- Environment and access planning within the tenant's actual entitlements.
- Basic canvas-app export/import or package movement when Dataverse is unavailable; distinguish this from full solutions-based ALM.
- Managing connections and permissions
- Naming conventions and documentation standards
- Version control discipline
- Change management planning
- Supporting applications post-deployment
- Assess expected growth and when backend or licensing changes may be necessary.

Security and Compliance Review

- SharePoint permission models
- Item-level security patterns
- Data exposure risks in Canvas apps

- Minimise sensitive data and enforce access at the data source; hiding a column or control in a canvas app is not backend security.
- Limiting administrative dependency
- Record reviewable change and activity information without promising legal or audit certification.
- Aligning with IT and compliance teams

Common Anti-Patterns

- Overusing collections
- Embedding complex logic directly in UI controls
- Ignoring delegation warnings
- Creating overly complex flows
- Mixing business rules across multiple locations
- Poor naming and structural discipline
- Designing apps without long-term ownership planning

Guided Application Capstone

- Design a manageable illustrative business application using SharePoint lists.
- Structuring relational-style data across multiple lists
- Integrating structured approval workflows via Power Automate
- Applying delegation-aware filtering strategies
- Implementing status-driven UI behavior
- Review basic export/import and handoff prerequisites without presenting packages as full ALM.
- Instructor-led architecture, performance, permissions and ownership review of the prototype.