Study Plan — Building Micro-Frontends (Mezzalira, 2nd Edition)

User Story Template Pack with Examples

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How to Write Effective User Stories

User story formula: "*As a **persona**, I want to **goal** so that **business value**.*" Keep stories small (1–3 days), independent, and verifiable via acceptance criteria.

- **Persona:** Who benefits? e.g., Frontend Architect, Platform Engineer, Product Manager.

- **Goal:** What *capability* is delivered? Avoid solutions in the story; keep implementation in tasks.

- **Business Value:** Why does it matter? Tie to speed, reliability, cost, compliance, or user experience.

- **Acceptance Criteria (BDD):** Describe observable behavior using Given/When/Then.

- **Non-Functional:** Add performance, security, accessibility, privacy, and reliability expectations.

- **Sizing/Priority:** Estimate in story points; label Must/Should/Could to aid sequencing.

Story Card Definition (Required Data)

Each card contains:

- **ID** (stable), **Title** (action + outcome), **Epic/Feature** (traceability), **Business Value**.

- **Priority** and **Estimate**, **Persona**, **Dependencies**, **Assumptions/Risks**.

- **Story** sentence, **Non-Functional** tags, **Acceptance Criteria**, and a **Tasks** checklist.

User Story Template (Copy & Fill)

ID-XXX — <Concise action/outcome>

Epic / Feature	<Epic/Feature>
Business Value	<Value outcome>
Priority / Estimate	`Priority: Must` `SP: 3`
Persona	<Primary persona>
Dependencies	<Key deps>
Assumptions / Risks	<Assumptions/Risks>

Story *As a <Primary persona>, I want to <Concise action/outcome> so that <Value outcome>.*

Non-Functional `Performance` `Security` `Reliability` `Accessibility` `Privacy` `i18n`

Acceptance Criteria (BDD)

Scenario	Happy path
Given	the target repositories, environments, and study plan context are available
When	the *Hands-on Objectives* below are executed
Then	the stated *Outcomes/Deliverables* for this chapter are produced, reviewed, and published

Definition of Ready: Persona clear; AC drafted; Dependencies known; Estimate set. • **Definition of Done:** All ACs pass; tests green; security/a11y checks; docs updated; deployed/flagged.

Hands-on Objectives

☐ Define the outcome in one sentence (what success looks like).

☐ Draft 3–6 acceptance criteria in Given/When/Then form.

☐ List constraints and dependencies (environments, repos, approvals).

☐ Create deliverables (ADR, diagrams, code spike, dashboard, or README).

☐ Capture metrics (perf, error rate, cycle time) and attach evidence links.

MFE-1 — Establish micro-frontend principles

Epic / Feature	Program Foundations
Business Value	Shared language, decision framework, and measurable quality attributes
Priority / Estimate	Priority: Must SP: 3
Persona	Frontend Architect
Dependencies	Architecture review; example repo
Assumptions / Risks	Scope creep; unclear success metrics

Story *As a Frontend Architect, I want to Establish micro-frontend principles so that Shared language, decision framework, and measurable quality attributes.*

Non-Functional Performance   Security   Reliability   Accessibility   Privacy   i18n

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Hands-on Objectives

☐ Write a one-page position paper: when micro-frontends are justified here; list non-goals.

☐ Identify 3–5 bounded contexts (domains) and ownership candidates.

☐ Define 7 quality attributes (e.g., independent deploys, isolated failures) and metrics.

☐ Create repo scaffolding and a hello-world shell (placeholder nav + slot).

☐ Deliverable: ADR-000 (vision) and a metrics sheet.

MFE-2 — Select composition style

Epic / Feature	Architecture Choices
Business Value	Trade-off clarity; predictable runtime/composition behavior
Priority / Estimate	Priority: Must SP: 5
Persona	Frontend Architect
Dependencies	Design system draft; routing plan
Assumptions / Risks	Over-coupling; runtime version drift

Story   *As a Frontend Architect, I want to Select composition style so that Trade-off clarity; predictable runtime/composition behavior.*

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Hands-on Objectives

☐ Compare client-, server-, and edge-side composition against your domains (table of trade-offs).

☐ Define inter-MF comms (request/response, pub/sub, events) and routing boundaries.

☐ Spike both CSR (Module Federation) and SSR (Next.js) rendering the same layout.

☐ Deliverable: ADR-001 (composition + comms) with decision record and diagrams.

MFE-3 — Choose split strategy + shell

Epic / Feature	Domain Split & Shell
Business Value	Stable shell and domain-aligned slices improve autonomy and UX
Priority / Estimate	Priority: Must SP: 5
Persona	Tech Lead
Dependencies	Design system strategy
Assumptions / Risks	Inconsistent UX; shared pkg churn

Story   *As a Tech Lead, I want to Choose split strategy + shell so that Stable shell and domain-aligned slices improve autonomy and UX.*

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Hands-on Objectives

☐ Evaluate vertical vs horizontal splits with 5 criteria (team, deploy, perf, UX, SEO).

☐ Define shell responsibilities: routing, auth contour, design tokens, feature flags.

☐ Decide design system delivery (pkg vs runtime import) and version policy.

☐ Implement one vertical MF and one horizontal MF for contrast.

MFE-4 — Build CSR micro-frontends

Epic / Feature	Client-Side Composition
Business Value	Fast local dev; independent deploys with MF runtime sharing
Priority / Estimate	Priority: Should SP: 8
Persona	Frontend Engineer
Dependencies	Module Federation config
Assumptions / Risks	Shared deps bloat; cache issues

Story   *As a Frontend Engineer, I want to Build CSR micro-frontends so that Fast local dev; independent deploys with MF runtime sharing.*

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Hands-on Objectives

- ☐ Create Home, Catalog, and Account as separate builds; expose/consume modules.
- ☐ Define shared dependencies and versioning; add error boundaries per MF.
- ☐ Integrate design system; measure TTFB/LCP as baseline.
- ☐ Deliverable: running CSR env + perf snapshot.

MFE-5 — Deliver SSR multi-zones

Epic / Feature	Server-Side Composition
Business Value	Improved SEO/perf with independent deploy zones
Priority / Estimate	Priority: Should SP: 8
Persona	Platform Engineer
Dependencies	Next.js zones; caching
Assumptions / Risks	Cache invalidation; data consistency

Story   *As a Platform Engineer, I want to Deliver SSR multi-zones so that Improved SEO/perf with independent deploy zones.*

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Hands-on Objectives

☐ Stand up 2+ Next.js zones with shared nav and independent deploys.

☐ Choose data fetching (RSC/API routes) and caching (CDN, ISR/SSR, memory).

☐ Compare Lighthouse metrics vs CSR; document deltas.

MFE-6 — Harden CI/CD with fitness functions

Epic / Feature	Automation Pipeline
Business Value	Safe, fast change with guardrails
Priority / Estimate	Priority: Must SP: 5
Persona	DevEx Engineer
Dependencies	CI runners; test envs
Assumptions / Risks	Flaky tests; slow builds

Story   *As a DevEx Engineer, I want to Harden CI/CD with fitness functions so that Safe, fast change with guardrails.*

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Hands-on Objectives

☐ Create pipeline templates per MF (lint, unit, build, e2e smoke, deploy).

☐ Add fitness functions: bundle budget, route perf budget, contract tests.

☐ Wire logs/traces/metrics with MF tags (OpenTelemetry); publish dashboards.

MFE-7 — Implement discovery registry + canary

Epic / Feature	Discovery & Delivery
Business Value	Safer releases and dynamic assembly of UI
Priority / Estimate	Priority: Must SP: 5
Persona	Platform Engineer
Dependencies	Registry service; CDN
Assumptions / Risks	Rollback complexity

Story   *As a Platform Engineer, I want to Implement discovery registry + canary so that Safer releases and dynamic assembly of UI.*

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Hands-on Objectives

☐ Implement a registry describing each MF (name, route, version, endpoint, deps).

☐ Wire runtime lookup to assemble UI on client/server/edge.

☐ Run a 10% canary for the Catalog MF; define rollback and success criteria.

MFE-8 — Adapt reference pipeline

Epic / Feature	Case Study
Business Value	Operational consistency and provenance
Priority / Estimate	Priority: Could SP: 3
Persona	DevEx Engineer
Dependencies	Artifacts store; SBOM tool
Assumptions / Risks	Supply chain gaps

Story   *As a DevEx Engineer, I want to Adapt reference pipeline so that Operational consistency and provenance.*

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Hands-on Objectives

☐ Replicate reference pipeline stages and adapt to org needs.

☐ Add SBOM + checksums; enable preview env per PR.

MFE-9 — Stabilize backends for frontends

Epic / Feature	BFF / API / GraphQL
Business Value	Resilient contracts and optimized data access
Priority / Estimate	Priority: Should SP: 8
Persona	Backend Engineer
Dependencies	Gateway; BFF service
Assumptions / Risks	Breaking schema changes

Story   *As a Backend Engineer, I want to Stabilize backends for frontends so that Resilient contracts and optimized data access.*

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Hands-on Objectives

☐ Choose API Gateway vs BFF per domain; publish a service dictionary.

☐ Implement one BFF aggregating 2 services for Catalog with caching/pagination.

☐ Try GraphQL federation or stitching; swap UI without code changes.

MFE-10 — Eliminate common anti-patterns

Epic / Feature	Quality & Governance
Business Value	Reduced coupling and clearer ownership
Priority / Estimate	Priority: Must SP: 3
Persona	Tech Lead
Dependencies	Refactor capacity
Assumptions / Risks	Hidden shared state

Story   *As a Tech Lead, I want to Eliminate common anti-patterns so that Reduced coupling and clearer ownership.*

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Hands-on Objectives

☐ Identify 5 anti-patterns (state sharing, anarchy repos, premature abstraction).

☐ Introduce an anti-corruption layer when crossing bounded contexts.

☐ Refactor one global store into events + local state per MF.

MFE-11 — Plan incremental migration

Epic / Feature	Strangler & Rollout
Business Value	Lower risk adoption with measured value
Priority / Estimate	Priority: Must SP: 5
Persona	Program Manager
Dependencies	Legacy system SMEs
Assumptions / Risks	Scope drift; dual-running cost

Story *As a Program Manager, I want to Plan incremental migration so that Lower risk adoption with measured value.*

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Hands-on Objectives

☐ Write a 3-phase plan (pilot → expand → decommission) with KPIs and exit criteria.

☐ Define shared concerns: auth, routing, feature flags, localization.

☐ Migrate one feature end-to-end with a strangler pattern.

MFE-12 — Execute a mini case study

Epic / Feature	Applied Learning
Business Value	Demonstrate before/after impact
Priority / Estimate	Priority: Should SP: 5
Persona	Team
Dependencies	Test accounts; staging env
Assumptions / Risks	Uncaptured metrics

Story *As a Team, I want to Execute a mini case study so that Demonstrate before/after impact.*

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Hands-on Objectives

☐ Apply split, shell, comms, auth, and canary to the capstone app.

☐ Document architecture before/after and team velocity metrics.

☐ Record a 5-minute demo; link evidence.

MFE-13 — Create an org adoption pack

Epic / Feature	Governance & Ways of Working
Business Value	Sustainable scaling across teams
Priority / Estimate	Priority: Should SP: 3
Persona	Eng Manager
Dependencies	Guilds/CoPs; RFC/ADR process
Assumptions / Risks	Over-governance; tooling mismatch

Story   *As a Eng Manager, I want to Create an org adoption pack so that Sustainable scaling across teams.*

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Hands-on Objectives

☐ Draft trade-offs and a "when not to use MFs" section for leadership.

☐ Define governance (RFC/ADR templates, guild cadence, dependency policy).

☐ Map domains to teams with decision rights and ownership boundaries.

MFE-14 — Pilot AI-assisted delivery

Epic / Feature	AI Enablement
Business Value	Faster scaffolding and tests with human-in-the-loop
Priority / Estimate	Priority: Could SP: 3
Persona	Engineers
Dependencies	Guardrails; model access
Assumptions / Risks	Low-quality suggestions

Story   *As a Engineers, I want to Pilot AI-assisted delivery so that Faster scaffolding and tests with human-in-the-loop.*

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Hands-on Objectives

☐ Use AI to scaffold a new MF (repo, CI, basic tests) and generate E2E tests from Gherkin.

☐ Establish a review checklist; document failure modes and redlines.

☐ Compare AI vs manual effort; capture learning.