

Web Stack Role Classification Matrix v1

Astro, Next.js, React, Vite, Node.js, and .NET: Different Roles

Outcome. Given a stack diagram, place each named technology into its primary responsibility role, explain overlaps without flattening categories, and reject comparisons that do not answer the same architectural question.

Evidence gate. Accept a comparison only when candidates fill the same bounded responsibility and every role claim names evidence, phase, location, and uncertainty.

Classify the Stack by Responsibility

01 UI LIBRARY Authority: Reusable abstractions for interface construction Boundary: React is one library; rendering mode still depends on architecture	02 WEB FRAMEWORK Authority: Application structure, conventions, routing, and rendering integration Boundary: Next.js and Astro organize broader application responsibilities	03 BUILD TOOL / DEV SERVER Authority: Transform source, serve development, and create deployable assets Boundary: Vite presence does not identify the production request runtime
04 RUNTIME Authority: Execute programs in a particular environment Boundary: Node.js can run tooling or server code; the observed phase matters	05 DEVELOPER PLATFORM Authority: Provide runtime, libraries, compilers, SDKs, and application stacks Boundary: .NET can coexist with a separate Browser UI library	

Identity, decision, and claim boundary

Learner		Reviewer	
Case / attempt		Capture date	
Scenario / concern		Decision	ACCEPT / REVISE / DEFER

Claim boundary. This is a conceptual decision lesson, not a coding lab. Use only scenario facts and declared sources; preserve uncertainty and learner-authored reasoning. A product name cannot establish role, lifecycle phase, execution location, or deployment behavior without observed evidence.

Required record fields and evidence tests

A field is complete only when its value is bounded, traceable, and classified. Use UNKNOWN when the required observation is unavailable or contradictory.

Field	Question to close	Minimum evidence	Invalid promotion
technology	What does technology mean in this case?	Bounded scenario fact, source, or observable	Inference can be relabeled as observation
primary_role	What does primary role mean in this case?	Bounded scenario fact, source, or observable	Inference can be relabeled as observation
responsibility	How is responsibility bounded and justified?	Allowed classification, reason, boundary, and reviewer	A page-wide label replaces row-level analysis
execution_location	What does execution location mean in this case?	Bounded scenario fact, source, or observable	Inference can be relabeled as observation
lifecycle_phase	What does lifecycle phase mean in this case?	Bounded scenario fact, source, or observable	Inference can be relabeled as observation
observed_evidence	What was actually observed for observed evidence?	Scenario fact or direct observation with a locator	An inference is promoted to a fact
overlap_or_dependency	What does overlap or dependency mean in this case?	Bounded scenario fact, source, or observable	Inference can be relabeled as observation
comparison_peer	What does comparison peer mean in this case?	Bounded scenario fact, source, or observable	Inference can be relabeled as observation
uncertainty	What remains outside uncertainty?	Explicit unknown, constraint, or non-claim	Missing evidence is hidden or converted to confidence
next_evidence	What evidence closes or revises next evidence?	Smallest relevant observation or counterexample	A named tool or source is assumed to have been checked
bounded_decision	How is bounded decision bounded and justified?	Allowed classification, reason, boundary, and reviewer	A page-wide label replaces row-level analysis

Evidence and failure states

Evidence: OBSERVED / INFERRED / UNKNOWN. Decisions: ACCEPT / REVISE / DEFER. Failure layers: UI_LIBRARY / WEB_FRAMEWORK / BUILD_TOOL / RUNTIME / PLATFORM / UNKNOWN.

Web Stack Role Classification Matrix

English support projection from derived_text/tables/WEBF-007-TAB1.example.en-US.json. This example demonstrates field relationships; it does not supply the learner's transfer or final decision evidence.

Field	Governed row 1	Governed row 2	Comparison question
technology	React	Vite	Which boundary changed, and which evidence remains stable?
primary_role	UI_LIBRARY	BUILD_TOOL_DEV_SERVER	Which boundary changed, and which evidence remains stable?
responsibility	Component-oriented UI implementation	Development server and production build pipeline	Which boundary changed, and which evidence remains stable?
execution_location	Browser and/or framework-controlled rendering contexts	Development/build environment	Which boundary changed, and which evidence remains stable?
lifecycle_phase	UI authoring/rendering	development/build	Which boundary changed, and which evidence remains stable?
observed_evidence	React component source and dependency evidence	vite dev/build scripts	Which boundary changed, and which evidence remains stable?
overlap_or_dependency	May be used inside a framework	Runs using a JavaScript runtime; can build React sources	Which boundary changed, and which evidence remains stable?
comparison_peer	Other UI-library choices for the same bounded need	Other build/dev tooling	Which boundary changed, and which evidence remains stable?
uncertainty	Rendering mode depends on architecture	Does not reveal deployed request runtime	Which boundary changed, and which evidence remains stable?
next_evidence	Inspect app entry and framework config	Inspect deployment/start command	Which boundary changed, and which evidence remains stable?
bounded_decision	Classify React primarily as the UI library in this observed project	Do not infer production runtime from Vite presence	Which boundary changed, and which evidence remains stable?
Source-package validation	ACCEPTED_IMPORTABLE; 0 blockers; 0 warnings · QA_ACCEPTED_ELIGIBLE		

Complete Web Stack Role Classification Matrix v1

Enter one bounded value per required field. Every material entry needs an evidence locator and a state. Use additional workbook rows when the artifact needs multiple concerns, responsibilities, resources, or path steps.

Required field	Learner value	Evidence locator	State / review note
technology			OBSERVED / INFERRED / UNKNOWN
primary_role			OBSERVED / INFERRED / UNKNOWN
responsibility			OBSERVED / INFERRED / UNKNOWN
execution_location			OBSERVED / INFERRED / UNKNOWN
lifecycle_phase			OBSERVED / INFERRED / UNKNOWN
observed_evidence			OBSERVED / INFERRED / UNKNOWN
overlap_or_dependency			OBSERVED / INFERRED / UNKNOWN
comparison_peer			OBSERVED / INFERRED / UNKNOWN
uncertainty			OBSERVED / INFERRED / UNKNOWN
next_evidence			OBSERVED / INFERRED / UNKNOWN
bounded_decision			OBSERVED / INFERRED / UNKNOWN

Human closure

Decision	ACCEPT / REVISE / DEFER	Reviewer	
Residual uncertainty		Consequence	
Smallest next evidence		Evidence owner / date	

Bound concern → observe → classify → stress → decide

Analyze one responsibility at a time. A changed condition is a counterexample probe, not permission to invent implementation facts.

Case	Bounded concern or change	Provisional decision	Deciding evidence	Learner observation	Stable / unresolved boundary
ASTRO	A documentation site uses Astro for page structure and rendering	Classify Astro primarily as the web framework	Project configuration, routes, rendering mode, and Astro source structure	_____	_____
REACT	One search widget is implemented as a React component	Classify React as the widget's UI library	Component source, dependency, and rendered integration boundary	_____	_____
NODE.JS	Node.js runs local development and build tooling	Record a development/build runtime role only	Tool commands and process evidence; production role remains unknown	_____	_____
VITE + .NET	Vite builds Browser assets while a separate .NET backend serves application requests	The tools coexist because they own different lifecycle responsibilities	Build scripts, deployment/start commands, and backend project evidence	_____	_____

Reasoning sequence

Phase	Action	Required capture	Truth rule
Boundary	Name the responsibility before the product.	Scenario fact, evidence locator, or explicit UNKNOWN	A product name cannot establish role, lifecycle phase, execution location, or deployment behavior without observed evidence.
Boundary	Record execution location and lifecycle phase separately.	Scenario fact, evidence locator, or explicit UNKNOWN	A product name cannot establish role, lifecycle phase, execution location, or deployment behavior without observed evidence.
Boundary	Choose a comparison peer that answers the same question.	Scenario fact, evidence locator, or explicit UNKNOWN	A product name cannot establish role, lifecycle phase, execution location, or deployment behavior without observed evidence.
Stress test	Classify React, Vite, and .NET in one observed project.	Prediction, changed assumption, stable boundary, next evidence	A plausible counterexample does not become an observed implementation fact
Stress test	Preserve production runtime as UNKNOWN when only build evidence exists.	Prediction, changed assumption, stable boundary, next evidence	A plausible counterexample does not become an observed implementation fact
Stress test	Describe partial overlap without declaring role identity.	Prediction, changed assumption, stable boundary, next evidence	A plausible counterexample does not become an observed implementation fact

Guardrail. Primary-role labels prevent category errors; they do not claim perfectly disjoint technologies.

Changed-context transfer

Given React components, Vite during development/build, and a .NET backend, explain why all three can coexist and rewrite invalid direct comparisons.

Transfer item	Changed-context requirement	Learner evidence	Review check
Scenario	State the changed concern, resource, or responsibility boundary.	_____	Worked scenario not copied
Observed facts	Record only facts supplied or directly observed.	_____	Inference stays separate
Concern split	Create separate rows for independent responsibilities or paths.	_____	No page-wide shortcut
Classification	Choose only ACCEPT / REVISE / DEFER or preserve UNKNOWN.	_____	Placement is justified
Failure probe	Apply one counterexample that tests an over-broad claim.	_____	No invented mechanism
Non-claims	State at least two limits plus the smallest next evidence.	_____	Residual and next evidence stated

Non-compensatory review

Critical dimension	PASS / REPAIR	Evidence locator	Repair or rationale
Scenario and responsibility boundary correctness	_____ _____	_____	_____
Observation, inference, and source traceability	_____ _____	_____	_____
Decision rationale and next-evidence quality	_____ _____	_____	_____
Failure diagnosis and overclaim resistance	_____ _____	_____	_____
Transfer, residual uncertainty, and non-goals	_____ _____	_____	_____

Canonical QA gate

Validation	ACCEPTED_IMPORTABLE; 0 blockers; 0 warnings	Disposition	QA_ACCEPTED_ELIGIBLE
Blocker / note	No canonical-source blocker recorded.	Clearance receipt	_____

Media decision. Deck and video are NOT_APPLICABLE_WITH_RATIONALE; the embedded visuals, editable record, worksheet, and learner-authored reasoning are the assessed support.