

Judicor

Secure digital examinations with integrity you can prove

A full-lifecycle digital examination platform for education, training, and certification.

Judicor brings exam creation, scheduled assessment sessions, browser-based integrity monitoring, grading, and results reporting into one platform. Designed for educators, schools, training organizations, and certification bodies, it replaces fragmented assessment workflows with a unified digital experience for both administrators and candidates.

The challenge

Running digital examinations involves more than presenting questions on a screen. Educators need to create and reuse assessments, coordinate candidates, manage timed sessions, evaluate responses, and maintain records when results need to be reviewed or disputed.

When these activities are spread across disconnected tools, administrative overhead increases and important context can be lost. Traditional proctoring approaches can also introduce friction by requiring additional software or intrusive monitoring.

Judicor was designed to bring these workflows together while giving educators clearer visibility into exam activity and candidates a straightforward browser-based testing experience.

The solution

SilicaSites' product development work is represented by Judicor's integrated assessment workflow, connecting exam preparation through final reporting within one application.

The platform supports the full assessment lifecycle:

- **Exam creation:** Build assessments through a guided authoring wizard, organize reusable questions, and apply configurable security and grading settings.
- **Session management:** Schedule examinations, manage recurring sessions, enroll classes, and invite candidates through room codes or shareable links.
- **Candidate experience:** Deliver focused, timed examinations directly in the browser, with fullscreen controls, question review, and automatic submission when configured.
- **Integrity monitoring:** Record browser-observable activity, including focus loss, fullscreen exits, and copy/paste events, then present those signals in candidate timelines and a centralized review inbox.
- **Grading and reporting:** Combine automatic grading for supported question types with manual evaluation, results analytics, and exportable records.

- **Institutional collaboration:** Support organizations with multiple educators, invitations, role-based access, and shared workspaces.
- **Commercial infrastructure:** Integrate subscription plans, session activation credits, and Stripe-powered checkout and customer billing management.

Designed for accountability without unnecessary friction

A key part of Judicor's approach is its browser-based integrity model.

Rather than requiring a dedicated desktop proctoring installation, the platform records observable browser activity and gives educators tools to review flagged events. Each attempt receives a weighted integrity score, with timestamped event logs, severity filters, resolution workflows, and CSV exports to support further review.

These signals are intended to help educators investigate unusual activity—not to establish misconduct automatically. Browser monitoring has inherent limitations, and an integrity score should be interpreted alongside the available evidence and assessment context.

This approach connects monitoring to an actionable review process while keeping the candidate experience accessible through a web browser.

Engineering a connected application

Judicor combines a modern web interface with a structured backend designed to support multiple user types, sensitive assessment records, and operational workflows.

Technology stack

- **Application:** Next.js App Router, React, TypeScript
- **Interface:** Tailwind CSS, shadcn/ui, Motion, Recharts
- **Backend and data:** Supabase, PostgreSQL, authentication, Row Level Security, and database triggers
- **Client state:** Zustand
- **Payments:** Stripe
- **Email:** Resend / Nodemailer and Supabase Auth
- **Reporting:** PDF and CSV exports, analytics dashboards, and downloadable certificate graphics

The architecture separates the marketing site, authentication flows, educator dashboard, candidate portal, and live exam experience. A shared service layer coordinates core product operations, while role-aware routing and database access policies help separate educator and candidate permissions.

Persisted integrity events, automated session tasks, and soft-delete cleanup workflows support the operational requirements beyond the visible interface.

The result

Judicor demonstrates how a complex, multi-stage process can be organized into one cohesive business application.

The product brings together:

- Exam authoring, delivery, grading, and reporting in one workflow
- Distinct interfaces for educators, administrators, and candidates
- Configurable session controls and browser-based integrity review
- Organization management and role-aware access
- Analytics, audit-oriented exports, and payment infrastructure

Together, these capabilities establish a foundation for digital assessment operations across educational institutions, training providers, and certification organizations.

This case study describes the product's implemented capabilities. Adoption, commercial performance, time savings, and assessment outcomes should be added only when supported by measured results.

What this demonstrates

Judicor illustrates SilicaSites' approach to custom application development: translating a complex operational requirement into a connected product with distinct user journeys, structured data, permissions, automation, reporting, and commercial functionality.

For organizations whose workflows extend beyond the capabilities of off-the-shelf software, this type of development can provide a more tailored way to coordinate processes, manage information, and support users across an entire operation.

SilicaSites builds applications that turn complicated business processes into powerful digital systems.

For partnership enquiries, visit silicasites.com.