ProJor business use-case

Company Background

ProtoSoft Ltd. is a small but dynamically growing team of developers. They provide **end-to-end software engineering services** to design, build, and deploy custom software and hardware systems for their customers. Their main customer base consists of industrial companies and small offices, who often face very specific challenges in optimizing their internal processes. ProtoSoft develops web-based intranet applications and embedded devices integrated into their customers' everyday operations.

Their Vision

Having already established preferred technology stacks, ProtoSoft wants to adopt a rapid prototyping process that enables them to deliver working prototypes within a single day. They see significant business potential in this service, as it allows them to be faster and cheaper than their competitors.

They have identified that most of their systems follow similar architectural patterns, typically including CRUD APIs for resource management systems, RPC APIs for specialized business logic operations, and UIs built around standardized UX patterns. They envisioned creating a "mega-skeleton" project that allows them to define the domain through a logical model and automatically generate reference implementations of the project across multiple interchangeable languages and frameworks.

This approach would not only enable rapid prototyping but also produce components adaptable to various IT environments and significantly reduce production system development time by building on strong foundations.

Current Environment

When a customer reaches out, ProtoSoft's architect and sales teams collaborate to draft an initial system design document, which outlines the requirements, components, and processes of the proposed system. If the customer agrees to proceed, an agile, iterative software development cycle begins, with an initial backlog derived from the design documents.

After several sprints of development and testing, ProtoSoft involves the customer in user acceptance testing to gather feedback and further refine the product.

Once the product quality meets expectations, it is deployed, and the project enters long-term maintenance. In this phase, any bugs or new feature requests are handled by the maintenance team, which typically works across multiple projects in parallel.

Business Requirements

- Deliver a working prototype within 1 day
- Enable deployment of prototypes in any IT environment:
  - On-premises intranet systems
  - Cloud-based intranet systems
  - Embedded solutions
- Build prototypes on strong, long-term maintainable foundations
- Instantly deployable and documented prototypes

Technical Requirements

- Generate CRUD endpoints for resource management
- Generate RPC APIs for specialized business logic operations
- Support full flexibility in backend and frontend technology selection:
  - Backend options: Java + Spring Boot, Go, Node.js, C# + .NET Core
  - Frontend options: React (web), Native Android application, Qt 6
- Include basic authentication and authorization mechanisms
- Incorporate validation for Data Transfer Objects (DTOs)
- Provide deployment descriptors for containerized delivery
- Generate structured documentation for APIs, resources, and administration tasks

Application of ProJor

ProtoSoft uses ProJor to define a comprehensive domain model that incorporates:

- **Resources** (attributes and associations): Persistent data structures with standardized CRUD API endpoints and UI screens.
- **Data Transfer Objects and RPC operations**: For specialized business logic (and their corresponding UI forms) with integrated validation

Their templates take the model as input and generate backend and frontend reference implementations across multiple languages and frameworks. Each artifact is containerized, allowing for immediate deployment and experimentation with the technology stack.

Additionally, ProtoSoft's templates generate detailed documentation for each artifact, including:

- Reference documentation of data structures and APIs
- Step-by-step administrator guides for the deployment and management of the containerized software components.

Summary

The adoption of ProJor allows ProtoSoft to offer a unique value proposition to their customers: delivering full prototype systems for any environment, regardless of operating system or hardware, in just a single day. This enables much faster iteration on project ideas and significantly lowers costs compared to traditional custom software development firms.

Thus, ProJor becomes a core enabler of ProtoSoft's competitive advantage in rapid, flexible, and high-quality custom system delivery.