

# Internship – Soudal

Self Reflection

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# 1. Introduction

This document provides a two-part reflection on my 13-week internship at Soudal NV in Turnhout, Belgium, during which I designed, developed, and deployed an internal web application called the Visit Request Portal. Section 1 reviews the project itself — what was delivered, its current state, and the steps that remain. Section 2 offers a personal reflection on the skills, growth, and lessons I gained throughout the process. Together, these sections aim to give a complete picture of both the business value delivered and the professional development achieved.

## 2. Reflection on the Project

### 2.1. What Was Accomplished and Why It Matters

The central goal of the internship was to replace Soudal's informal, email-based visitor planning process with a structured, centralized web application. Over 13 weeks, I delivered the Visit Request Portal — a full-stack ASP.NET Core 8 Razor Pages application integrated with Microsoft Azure that allows employees to submit visit requests, administrators to approve or reject them, managers to consult approved visits, and operations users to prepare rooms based on completed checklists.

The application exceeded the original project scope in several ways. Beyond the planned roles of Requestor, Admin, and Manager, I introduced an Operations role with a dedicated calendar view tied to room checklist completion. I also integrated real-time in-application notifications using SignalR and email notifications through Microsoft Graph — features that significantly improve transparency across teams. Infrastructure was defined entirely through Azure Bicep and deployed across Development, QA, and Production environments via Azure DevOps CI/CD pipelines, ensuring consistency and reproducibility.

Following completion of the main assignment ahead of schedule, I designed and developed an additional MVP application for the R&D department: the R&D Formulation Database. This system centralizes formulation records, ingredient compositions, production instructions, dynamic test definitions, and bulk test result entry — a domain entirely separate from visitor management but built with the same architectural patterns.

Both deliverables contribute directly to Soudal's broader digitalization strategy, replacing fragmented manual processes with structured, maintainable internal tools.

### 2.2. Present State of the Project

The Visit Request Portal is deployed and operational across all three Azure environments. The production environment is live and will be accessible to internal users through the company's SharePoint portal. All core workflows — request creation, approval and rejection, calendar management, notifications, reporting, and logbook — are functioning as specified.

The R&D Formulation Database has reached MVP status. Core workflows including formulation creation, ingredient composition with automatic calculations, production instruction management, test definition management, and bulk result entry are implemented and working. The application is prepared for Azure deployment and is ready for internal evaluation by the R&D department.

## 2.3. Work That Remains

For the R&D Formulation Database, the most important pending items are:

- Export functionality to CSV or Excel to allow offline analysis and sharing.
- Pagination and sortable columns to support larger datasets in production use.
- Automated testing, caching strategies, and a formal backup and recovery plan.

# 3. Personal Reflection

## 3.1. Skills and Competencies

Technically, this internship pushed me well beyond my academic baseline. I had studied Azure fundamentals at school, but the real-world experience of provisioning infrastructure with Azure Bicep, configuring CI/CD pipelines in Azure DevOps across multiple environments, managing secrets through Azure Key Vault, and monitoring application health through Application Insights was on a different level entirely. The same applies to authentication: integrating Microsoft Entra ID through OpenID Connect, implementing role-based authorization across Razor Pages, and sending email through Microsoft Graph all required me to develop a practical depth of understanding that classroom exercises cannot replicate.

Beyond Azure, I strengthened my skills in ASP.NET Core 8, Entity Framework Core, database modelling, SignalR for real-time communication, and UI design with Figma. Professionally, I improved my ability to translate stakeholder requirements into working software, manage a full development backlog in Azure DevOps, and produce technical documentation that is useful to others.

A particularly valuable part of the internship was working alongside my mentor, Erwin. He was genuinely supportive, approachable, and friendly throughout the entire period. The one-on-one meetings we had every two weeks were something I looked forward to — they gave me a structured opportunity to discuss progress, raise questions, think through technical decisions, and reflect on how things were going more broadly. Erwin's guidance played a big role in keeping the project on track and in making me feel welcome in the team.

## 3.2. Key Challenge and Solution

The most significant challenge I faced was the technical complexity of building a cloud-native enterprise application from scratch. Setting up Azure Active Directory authentication, configuring managed identities for Key Vault access, establishing secure CI/CD pipelines, and

ensuring environment-specific configuration all worked correctly was far more demanding than I initially anticipated.

My approach when I got stuck was a combination of consulting Microsoft's official documentation and leaning on my workplace mentor. The documentation was comprehensive but sometimes required careful reading to understand how pieces connected. My mentor helped me resolve specific integration issues faster and pointed me toward patterns that fit Soudal's existing infrastructure. This combination of self-directed research and asking for help when truly needed proved to be the most effective strategy — and it is a habit I intend to carry forward.

### 3.3. Growth and Outlook

This internship confirmed that I am genuinely interested in full-stack enterprise application development, and particularly in the architecture layer where technical decisions directly shape business outcomes. Designing an approval workflow, modelling a database that supports auditability, or choosing between notification strategies — these are the kinds of problems I find engaging, and I want to keep working on them.

The experience of delivering two working applications to a real company, communicating with stakeholders, adjusting scope based on feedback, and documenting my decisions for future developers has given me a level of professional confidence I did not have at the start. I feel ready to enter the industry as a junior developer with a realistic understanding of what professional software development involves.

### 3.4. Advice to My Past Self

If I were to start this internship again, the one thing I would do differently is seek stakeholder feedback more frequently and earlier. During the first few weeks, I focused heavily on getting the technical foundation right — which was necessary — but I could have validated certain design and workflow decisions with users sooner. There were moments later in the project where feedback led to adjustments that, had I gathered that input earlier, would have saved meaningful rework.

A structured habit of sharing progress with stakeholders at the end of every sprint, rather than waiting for formally scheduled review moments, would have kept expectations better aligned and given me earlier signals about where the application needed to evolve. Communication is not a step that happens after development — it runs alongside it.

### 3.5. Working with the Team and the Language Barrier

One aspect of the internship I reflect on with some regret is not spending more time with the wider IT team. From a technical perspective, my colleagues were knowledgeable and there was a lot I could have learned simply by being more present in everyday conversations and team moments. Looking back, I wish I had made more of an effort to engage with them outside of strictly work-related interactions.

The honest reason this was difficult was the language barrier. Most of my IT colleagues communicated primarily in Dutch, and while I could follow some conversations, I often found it hard to participate naturally or to join in informal moments. This made it feel easier to keep to

myself rather than risk awkward exchanges, which in hindsight was the wrong approach. I think making even a small effort to speak some Dutch — even just greetings, small talk, or a few phrases — would have gone a long way toward breaking the ice and building better connections with the team.

It is something I would do differently if I were starting again: invest a little time in learning some basic Dutch before the internship begins and push myself to use it even imperfectly. Language barriers are real, but they are also smaller than they feel in the moment, and the effort to try is usually appreciated by colleagues far more than the result.

## 4. Conclusion

This internship at Soudal produced results that exceeded the original project scope: a fully deployed Visit Request Portal that is live in Production, and an additional R&D Formulation Database MVP ready for internal evaluation. Both applications contribute directly to the company's digitalization goals by replacing informal, manual processes with structured, maintainable internal tools.

On a personal level, the internship gave me hands-on experience across the full software development lifecycle — from requirement analysis and stakeholder communication to implementation, cloud deployment, documentation, and handover. The technical depth I gained in Azure, ASP.NET Core, and enterprise application architecture, combined with the professional skills developed through agile planning, sprint execution, and cross-functional collaboration, form a foundation I am confident I can build on throughout my career.

The experience has made clear what kind of developer I want to become: one who understands both the code and the business problem it is solving, and who communicates effectively across both worlds.