PROJECT PLANNING

Internship ImasNV 2025

ICT MANAGER

This project modernizes the ICT Manager ERP module by migrating from a legacy Java application to a dynamic React solution that streamlines page creation and enhances system efficiency.

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1. INTRODUCTION TO THE COMPANY AND THE ROLE

The internship takes place at **Imas NV**, the dedicated IT department of **Van Genechten Packaging**, a leading European company known for its innovative and high-quality packaging solutions. Van Genechten Packaging operates across several countries and provides folding carton packaging for sectors such as food, beverages, health, and beauty. With a strong focus on sustainability and design, the company has earned a solid reputation in the European market.

To support such a wide-reaching business, a strong and modern IT infrastructure is essential. Imas NV plays a key role in this, handling all technological needs across the company. The department has around 30 employees with different areas of expertise, including Business Intelligence, DevOps, Cybersecurity, IoT, and both web and desktop development. The IT department is managed by Luc Pluys.

My role during the internship is focused on **frontend development**, working closely with both frontend and backend developers. My current team consists of five members: three frontend developers and two backend engineers.

The main project is the development of **Fenics**, a custom-built ERP system used by various departments of Van Genechten Packaging. This system has been developed and expanded over the past 20 years. However, due to the need for modernization, the company decided to rebuild the ERP as a modern web application using technologies such as React for the frontend and Java Quarkus for the backend.

The project also involves working within a complex IT infrastructure. The company operates two on-premise data centers and follows a structured deployment approach with four environments: RAD, SIT, UAT**,** and PRD. These environments ensure stable development, testing, and production workflows, supported by a team of around six experts in DevOps and cybersecurity.

This project shows that the company is serious about staying up to date with modern technology. By rebuilding the ERP system, they aim to make daily work easier, faster, and more reliable for all departments. It’s a big step that helps the company stay strong, grow further, and stay competitive in today’s fast-changing business world.

2. PROJECT OVERVIEW

The main task during the internship is to work on the ICT Manager module, which is one of the core parts of the Fenics ERP system.

The ICT Manager module focuses on everything related to the company's IT department. It stores and manages data such as devices, users, software, responsibilities, and internal IT processes. The existing system was built as a Java-based desktop application, and now it is being fully moved to the web using React for the frontend and Java Quarkus for the backend.

One of the biggest challenges is the number of pages - over 200 – and about 2000 for Fenics which makes manual rebuilding slow and inefficient. Instead of recreating each page one by one, the goal is to design a dynamic and scalable system that can generate pages based on configuration. This solution will not only work for ICT Manager but should also become a reusable tool for migrating and building other modules in the Fenics ERP system in the future.

This task is being carried out in close cooperation with frontend and backend developers, allowing continuous learning, teamwork, and code improvement. Side tasks or smaller feature updates may also be assigned during the internship, depending on the project's progress.

Overall, the project provides valuable experience in full-stack development, working with enterprise-level systems, and solving real business challenges. At the same time, it contributes directly to the company's long-term goal of building a flexible, modern, and efficient ERP system that can support growth for many years to come.

3. ADDED VALUE

This project helps the company in many ways. It makes development faster, the system easier to use, and prepares everything for future scale. These things are important for a big company that works with a lot of data and teams every day.

Faster Development:

- Pages are created automatically or by configuration instead of writing each one by hand.
- The same method can be used for other parts of the ERP system
- It's easier to make changes or add new features later

Better User Experience:

The updated version is easier and nicer to use for everyone.

- The React app is faster and easier to navigate
- It looks more modern and works better on different screens
- People can finish their tasks quicker, which saves time and effort

Scalability and Growth:

- Parts of the system can be reused for other projects.
- It's easier to add new tools or updates later

4. PROJECT PHASES

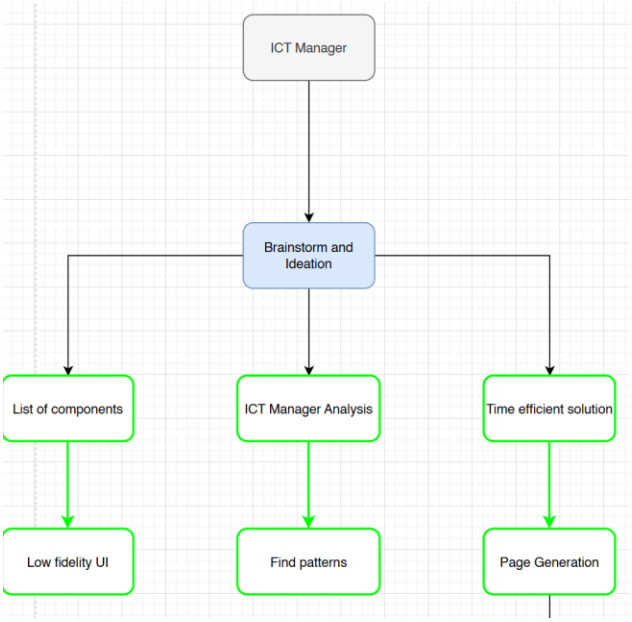
The project is organized into six distinct phases, each designed to build progressively toward a complete and robust solution. Every phase outlines specific objectives and key activities, ensuring that each step contributes to the overall migration of the ICT Manager module. This structured approach not only minimizes risks but also aligns with stakeholder expectations and project timelines.

4.1 BRAINSTORMING AND IDEATION

This phase lays groundwork by exploring requirements, identifying challenges, and planning a dynamic solution.

Key Activities:

- Analyze ICT Manager requirements and data structure.
- Design custom components for the new system.
- Develop a time-effective plan for generating pages dynamically.

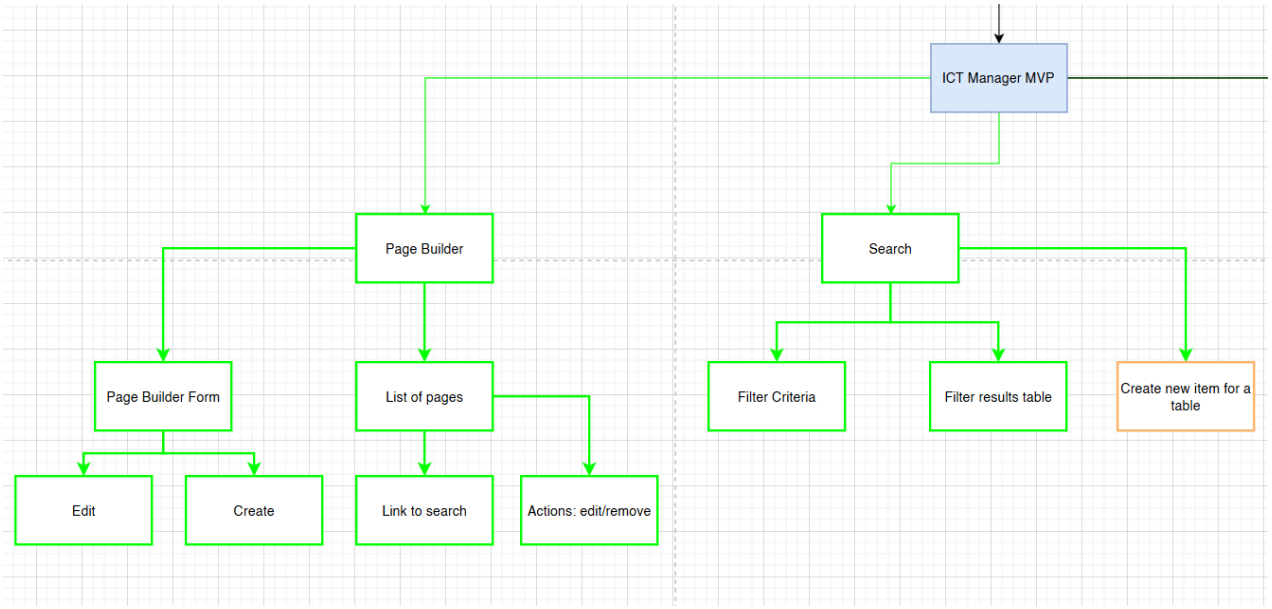


4.2 MVP PROTOTYPING AND DEVELOPMENT

This phase focuses on building a functional prototype that incorporates the core features necessary for the ICT Manager migration.

Key Activities:

- Construct low-fidelity mockups for core functionalities.
- Develop an MVP that includes:
    - **Page Builder:** A form (create/edit) and a table (display/remove items).
    - **Search Engine:** Capabilities to filter and query items per page.
    - **Relation Filter:** A “select” page for relation-based filtering.
    - **Item Details Page:** A dedicated page to view and edit item information, including related data.
    - **Multi-Schema Support:** Handling of different database schemas.
    - **CRUD Operations:** Create, read, update, and delete items.
    - **Error Handling:** Manage validations for required fields and other potential errors.
- **Objective:** Achieve at least 80% of the core features, secure stakeholder approval, and complete the phase within 2 weeks.



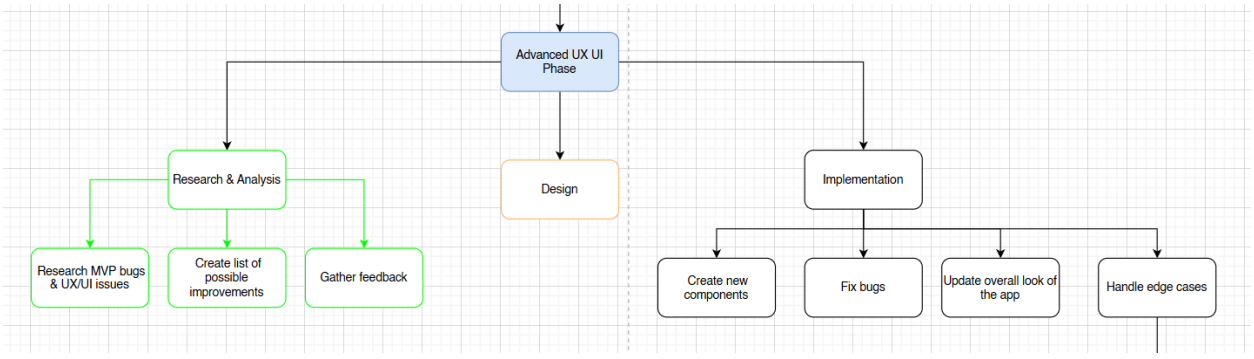
4.3 ADVANCED UX/UI

This phase aims to enhance the user interface and experience by refining design elements and addressing early-stage issues.

Key Activities:

- Identify MVP bugs and user experience issues; gather feedback from stakeholders.
- Create medium-fidelity mockups to address edge cases and propose new components.
- Implement improvements by developing new components, fixing bugs, enhancing the overall interface, and addressing edge cases thoroughly.

Outcome: Approximately 90% completion of the application

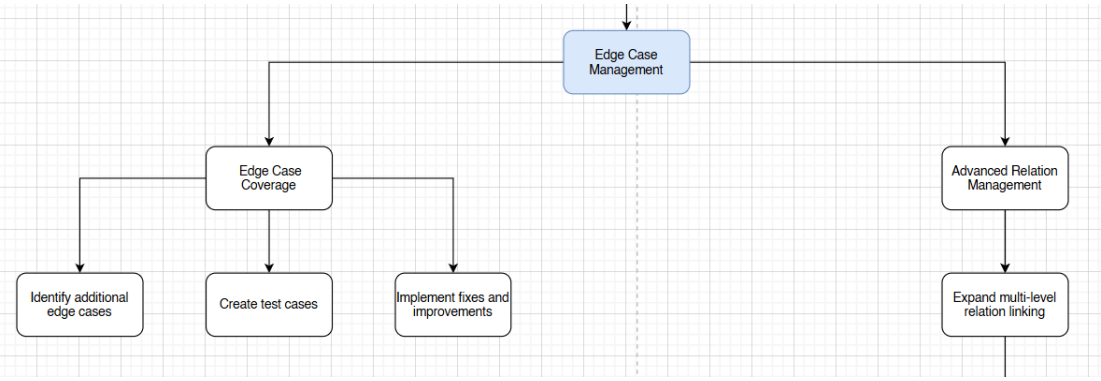


4.4 EDGE CASE MANAGEMENT

This phase focuses on refining the system's core functionalities to ensure robustness in handling complex scenarios.

Key Activities:

- Refine and extend the application's core functionalities.
- Strengthen dynamic page creation and implement more advanced relation management.
- Address additional edge cases identified during testing or from stakeholder feedback.

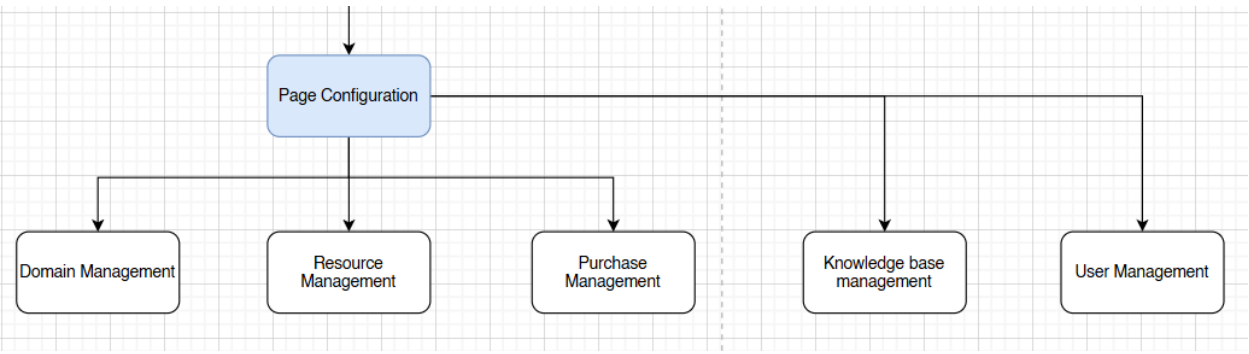


4.5 PAGE MANAGEMENT

This phase leverages the developed page builder system to integrate and configure all necessary pages, ensuring full system functionality.

Key Activities:

- Configure all required pages for the ICT Manager through the page builder.
- Detect and fix bugs to ensure the complete system operates effectively.



4.6 TESTING, BUG FIXING, AND OPTIMIZATION

The final phase is dedicated to comprehensive testing and fine tuning to deliver a reliable, high-performance system.

Key Activities:

- Conduct thorough testing, including functional, regression, and performance tests.
- Resolve any remaining bugs and optimize the code for better performance and maintainability.

5. PBS

A Full **Project Breakdown Structure** diagram is available at:
app.diagrams.net

6. TIMELINE

1. **Brainstorming and Ideation**: Weeks 1–2
2. **MVP Prototyping and Development**: Weeks 2–4
3. **Advanced UX/UI**: Weeks 4-5
4. **Edge Case Management**: Weeks 6-7
5. **Page Management**: Week 7
6. **Testing, Bug Fixing, Optimization**: Weeks 8

7. TOOLS AND TECHNOLOGIES

Frontend:

- **React with TypeScript:** Serves as the primary framework for building the user interface.
- **Syncfusion:** Provides a robust component library to enhance UI components.
- **imas-core:** A custom library that defines reusable components and shared functions across modules.
- **React Hook Forms & Zod:** Manage form state and validation efficiently.
- **React Query:** Handles API requests and caching to optimize performance.

Authentication:

- **Keycloak:** Manages secure authentication and access control.

Backend:

- **Java with Quarkus:** The backend is built using Java and the Quarkus framework, emphasizing performance and scalability.