UNIVERSITAS ISLAM NEGERI
SUNAN GUNUNG DJATI
BANDUNG

EleXclusive

- Sistem Terdistribusi -

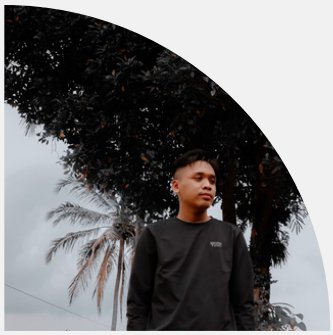
TEKNIK INFORMATIKA
UIN SUNAN GUNUNG DJATI BANDUNG

9 INDUSTRY, INNOVATION AND INFRASTRUCTURE

ELEVATE CLASSIC ELECTRONICS STORES INTO DIGITAL WITH ONLINE INTEGRATION

Artistic depiction of a clasic electronics store blending into a digital storefront

Team Project



Mochammad Rizky Ramadhani

https://www.linkedin.com/in/mochammad-rizky-ramadhani-646b4b221/

https://github.com/Mokyra18

https://mokyra.pandawadev.cloud/

Data Enggginer, Back-End Dev

Muhammad Dzikri

https://www.linkedin.com/in/muhammad-dzikri-457867261/

https://github.com/DikitoO8

dikitoO8.github.io

Front-End Dev

Muhammad Nuzul Rizqa

https://www.linkedin.com/in/muhammad-nuzul-rizqa-3a34b817a/

https://github.com/Teukuaris

Researcher

Muhammad Zidan Fauzi

https://www.linkedin.com/in/muhammad-zidan-fauzi-1b38042a5/

https://github.com/ziohtime

UI-UX Designer

Topic & Motivation

Topic:

Integration of Islamic Values in Digital Transformation Maintaining Balance Between the Worldly and the Hereafter

وَٱبْتَغِ فِيمَآ ءَاتَىٰكَ ٱللَّهُ ٱلدَّارَ ٱلْءَاخِرَةَ ۖ وَلَا تَنسَ نَصِيبَكَ مِنَ ٱلدُّنْيَا ۖ وَأَحْسِن كَمَآ أَحْسَنَ ٱللَّهُ إِلَيْكَ ۖ وَلَا تَبْغِ ٱلْفَسَادَ فِى ٱلْأَرْضِ ۖ إِنَّ ٱللَّهَ لَا يُحِبُّ ٱلْمُفْسِدِينَ

Rather, seek the ˹reward˺ of the Hereafter by means of what Allah has granted you, without forgetting your share of this world. And be good ˹to others˺ as Allah has been good to you. Do not seek to spread corruption in the land, for Allah certainly does not like the corruptors." (Al Quran surat Al Qashash ayat 77).

Motivation:

A verse from the Quran, Surah Al-Qasas, Ayah 77, reminds us to seek the rewards of the Hereafter while not forgetting our share of worldly pleasures. EleXclusive, a platform designed to digitalize electric shops, reflects the modern challenge of leveraging technology to achieve worldly success while maintaining spiritual values. By understanding the Islamic principles mentioned in this verse - seeking goodness in both this world and the Hereafter, doing good to others, and avoiding corruption - we can use digital transformation as a tool to achieve a healthy and meaningful balance in life. In this context, we will explore how platforms like EleXclusive can be used to expand businesses online while preserving spiritual values in the rapidly changing digital era.

Target User

For our microservice project focusing on the digitalization of an electric utility company, our target user group encompasses a diverse range of stakeholders within and outside the organization.

1. Utility Company Staff:
    - Operations Managers
      Responsible for monitoring and managing the electric grid, they require real-time data visualization and analytics to ensure efficient operations and maintenance.
    - Customer Service Representatives
      Need access to customer data and service history to address inquiries and resolve issues promptly.
    - Field Technicians
      Require mobile-friendly interfaces for accessing work orders, equipment status, and navigating service locations efficiently.

2. Customers:
    - Residential Consumers
      Seek user-friendly interfaces for managing account information, viewing consumption patterns, and accessing billing details.
    - Commercial & Industrial Clients
      Require advanced analytics tools for energy usage optimization, demand forecasting, and cost analysis.

Proposed Solution

Description:

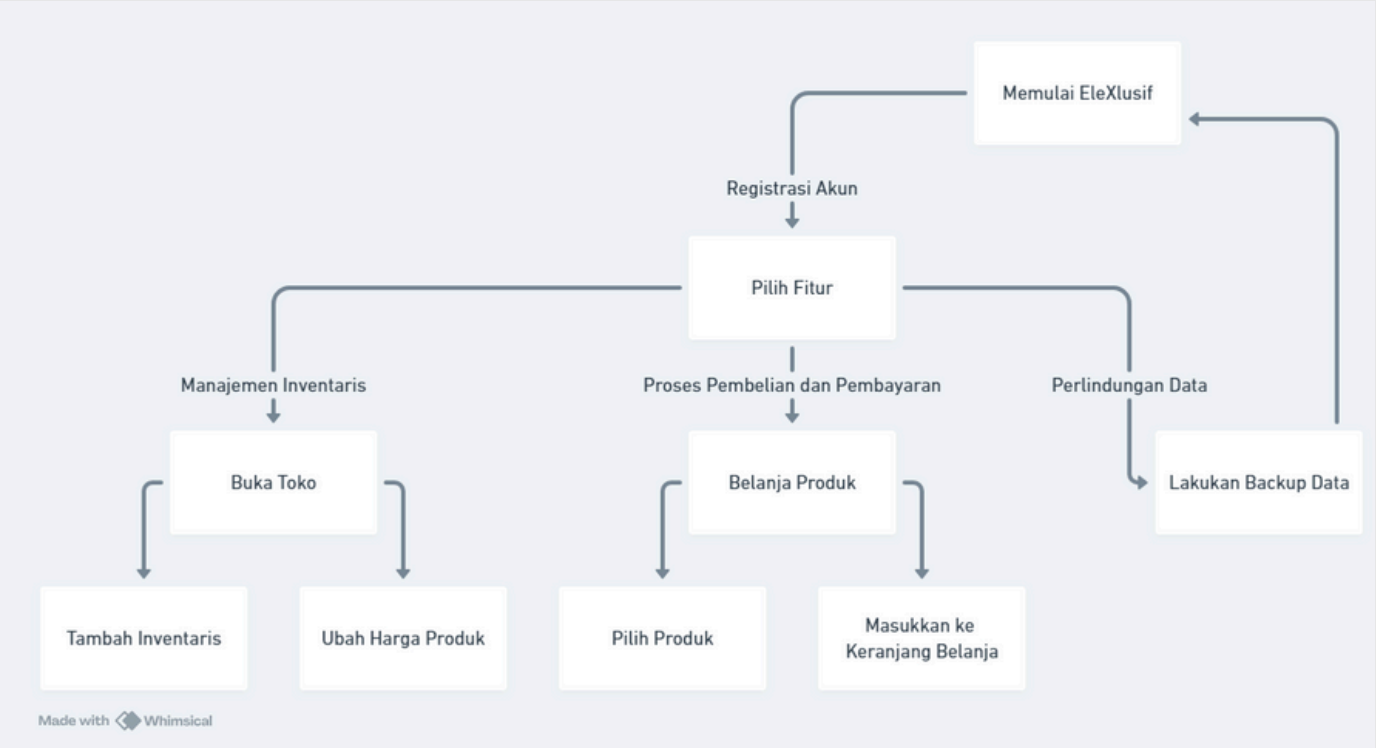
EleXclusive is a specialized platform designed to modernize and digitize electrical shops, enabling them to thrive in the online market. By leveraging the latest technology, this system empowers shop owners to expand their market reach and enhance the visibility of their products. Its features include inventory management, easy purchasing and payment processes, and robust data protection. With ElecXlusif, electrical shops can optimize their operations and achieve success in the digital era.

Related SDGs:

SDG 9: Industry, Innovation, and Infrastructure: By introducing digital technology into the operations of traditional electrical shops, EleXclusive not only fosters innovation in the retail industry but also helps enhance digital infrastructure. This enables broader access and growth in a technology-based economy.

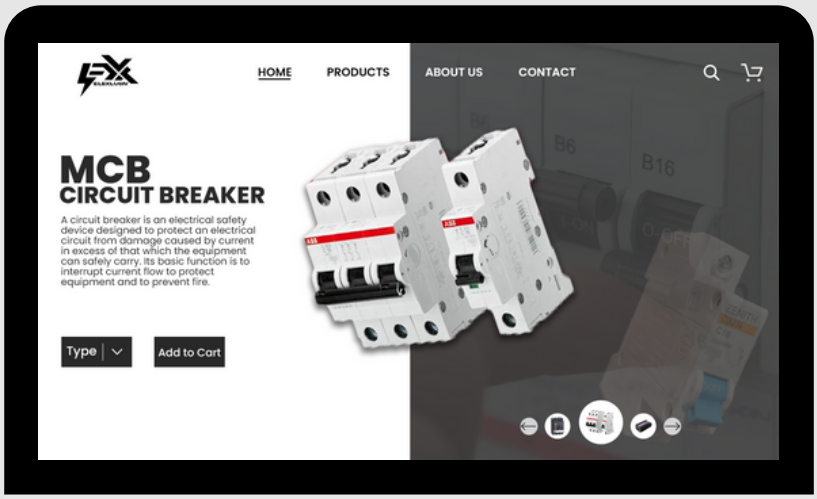
Application Flow Chart:

EleXclusif initial flowchart

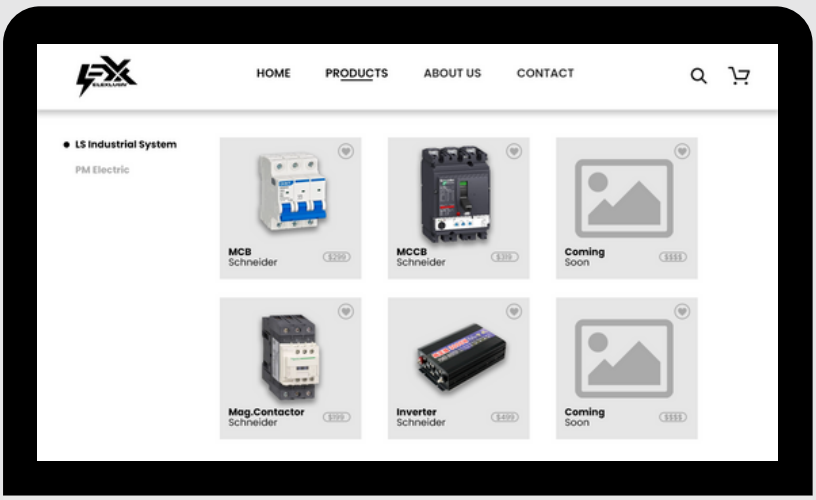


Application Design and Ilustration:

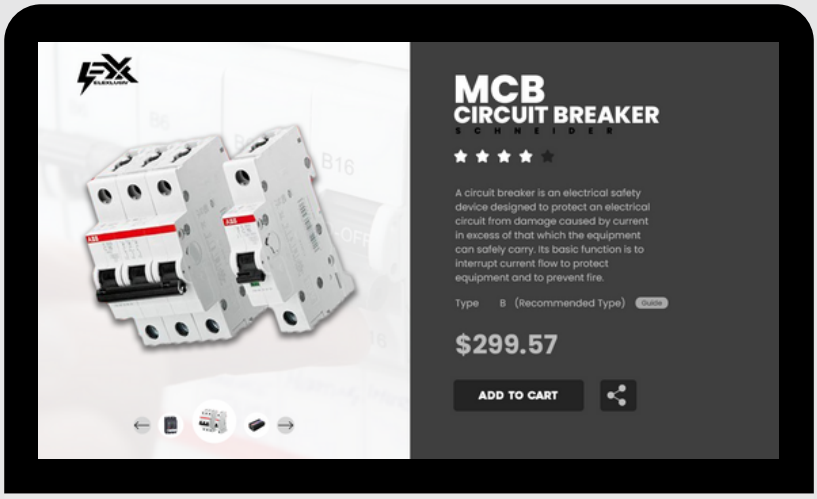
EleXclusive initial Design and Ilustration



Home Page



Product Page



Single Page

Project Method & Technologies

Method and Technologies

Method:

- Authentication Service
- Product Service
- Inventory Service
- Order Service
- Frontend Service
- Gateway Service

Technologies:

- Express.js
- React.js
- Next.js
- MongoDB/Redis
- Kubernetes/Docker

Time Tables

No	Activities	Description
Mei Week 1	Project Kickoff and Research	Project Kickoff Meeting: Define project scope and objectives. Role Assignment: Assign roles and responsibilities to team members. Research: Conduct research on technologies and tools to be used.
Mei Week 2		Requirement Gathering: Identify and document user requirements. Architecture Design: Design the microservices architecture. Set Up Version Control: Initialize Git repository and establish branching strategy
Mei Week 3	Design and Environment Setup	Environment Setup: Set up development environments (Docker, Kubernetes). API Gateway Configuration: Configure initial API gateway (Tyk/Kong/KrakenD). Database Design: Design database schema and choose appropriate database technologies.
Mei Week 4		Prototype Front-end: Develop a basic prototype of the front-end interface. Create Initial Microservices: Start developing core microservices (e.g., user management, data ingesti Initial Testing: Conduct initial tests to ensure environment and services are set up correctly.
Juni Week 1	Initial Development	Front-end Development: Continue developing user interface with interactive components. Microservices Development: Develop additional microservices (e.g., analytics, reporting). Database Integration: Integrate microservices with databases.
Juni Week 2	Continued Development and Integration	API Development: Develop and document RESTful APIs for communication between services. Implement CI/CD Pipeline: Set up continuous integration and deployment pipelines. Midpoint Review: Conduct a project review to assess progress and address any issues.
Juni Week 3	Testing and Optimization	User Acceptance Testing: Conduct UAT with target user groups to gather feedback. Documentation: Prepare user manuals and technical documentation. Final Adjustments: Make final adjustments based on UAT feedback.
Juni Week 4	Deployment and Wrap-up	Wrap-Up: Finalize all documentation, ensure all project artifacts are in place. Team Reflection: Reflect on the project experience, discuss what went well and areas for improvemen Submission: Submit final project deliverables and documentation.

References

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