DEVELOPMENT OF A GAMIFIED WEB APPLICATION FOR OPERATOR TRAINING

Author : Mr. Peerapat Chananan; 650510672
Advisor : Associate Professor Dr.Wattana Jindaluang

Murata Electronics (Thailand), Ltd.

ABSTRACT

The MT600 Gamification system was developed to reduce employee learning time for diverse production models. The system features a User module for interactive learning through video and quizzes, and an Admin module for managing work processes and generating individualized reports.
Developed using Next.js, Node.js, and Oracle Database,the application ensures high efficiency scalability, and structured data management in a factory environment.

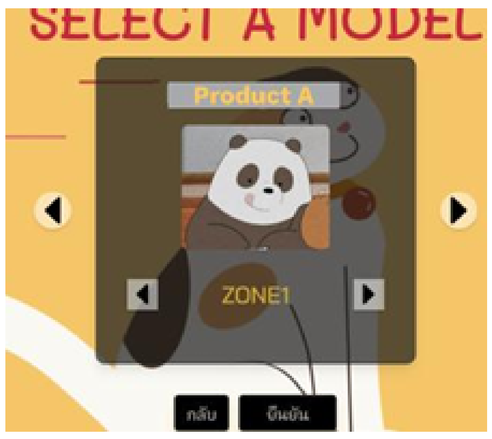
INTRODUCTION

Currently, Murata Electronics (Thailand), Ltd. manages a large influx of new employees who must quickly acquire skills across diverse production models. Traditional training methods rely on static slide-based lectures, which are time-consuming and lack real-time performance tracking. To bridge this gap, the MT600 Gamification system was developed to modernize the training experience. By transforming lessons into an engaging, interactive journey

TECHNOLOGY

Frontend: Next.js, tailwindcss
Backend: Node.js
Tool: Microsoft Teams
Database: Oracle SQL Developer

GAMIFICATION FEATURES



Selection Pad: "Choose your production model like selecting a game character."

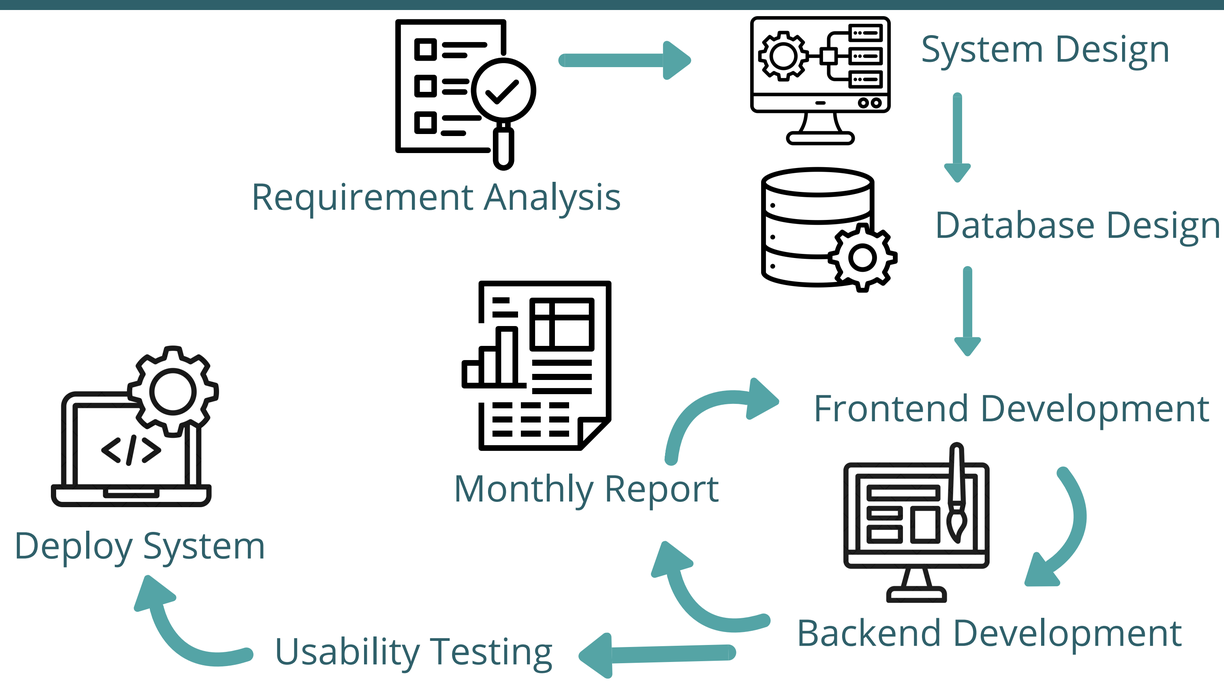


Quiz Information: "Life system to increase engagement."



Map System: "Visualizes learning progress as a game journey."

METHODOLOGY



CONCLUSION

The MT600 Gamification system successfully modernizes operator training at Murata Electronics (Thailand), Ltd. By transitioning from traditional slide-based lectures to an interactive, video-driven journey, the application achieves the following key outcomes:

- **Reduced Learning Time**: Streamlines the training process for diverse production models, allowing new employees to acquire essential skills more efficiently.
- **Scalable Infrastructure**: Built with a robust Full-Stack architecture (Next.js, Node.js, and Oracle Database), ensuring high performance and secure data management within a factory environment.