

Case Study

# Stock Trading Simulator for KidZania Cairo & EFG Hermes



Backend

Node.js  
Express.js

Frontend

React.js  
Tailwind CSS

Database

MongoDB

Authentication

JWT tokens for  
secure sessions

Deploymant

Replit



Client

KidZania Cairo & EFG Hermes (collaboration project)



Developer

Ali Mohamed  
(Solution Architect & Full Stack Developer)



Industry

Finance / Education / Gamified Learning

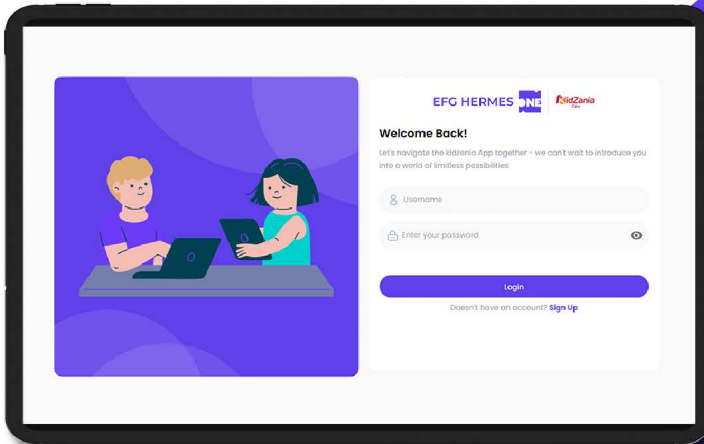
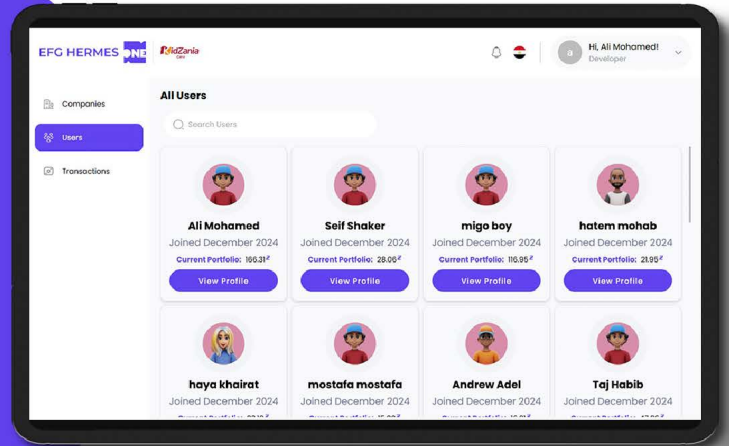


Project  
Duration

Nov. 2024 - Mar. 2025

## Project Overview

KidZania Cairo partnered with EFG Hermes to develop an interactive stock trading simulation platform aimed at educating young users about financial markets. The goal was to create an engaging digital experience that mimics stock trading in a safe, gamified environment.



## Goals & Objectives

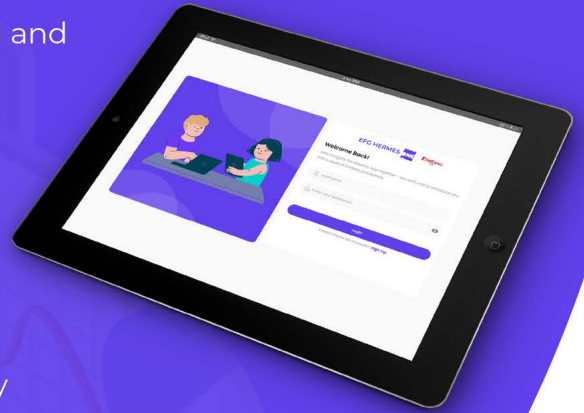
- Develop a full-stack web application capable of simulating stock trading
- Provide an intuitive and interactive user interface that appeals to children and young adults
- Implement secure user registration and authentication
- Ensure scalability to support multiple concurrent users

## My Role & Responsibilities

- Led the full-stack development of the platform, including backend API and frontend UI
- Designed and implemented the MongoDB database schema to store user profiles, transactions, and stock data
- Developed reusable React components with Tailwind CSS for a clean, responsive design
- Ensured secure authentication flow using JWT tokens and password hashing
- Collaborated with KidZania and EFG Hermes teams for requirements gathering, testing, and iterative feedback
- Deployed and maintained the application on Replit

## Challenges & Solutions

- Complex Trading Logic: Created modular backend services to handle simulated market orders, portfolio updates, and trade validations
- Security Concerns: Used JWT for stateless authentication and encrypted sensitive user data to maintain privacy
- Responsive UI Design: Leveraged Tailwind CSS to ensure smooth experience across devices, including
- tablets and smartphones



## Outcome & Impact

- Successfully launched a robust trading simulator used by over 2,000 young users during the pilot phase
- Positive feedback from KidZania educators praising the platform's educational value and usability
- High user retention due to interactive and gamified elements
- Platform code and architecture designed for easy feature expansion and future scalability

