

Final Project Proposal - Advanced Java with Spring Boot

Project Title

Typing Practice System

Student Name

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Objective

The objective of this project is to develop a web-based Typing Practice System that allows users to improve and test their typing speed and accuracy. The system will record typing results and allow users to track their progress over time.

Tools & Technologies

- Frontend: React.js with Tailwind CSS
- Backend: Spring Boot (Java)
- Database: PostgreSQL
- Authentication: JWT-based login system

Key Features

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- User registration and login
- Typing practice using paragraphs or random words
- Real-time WPM and accuracy calculation
- Typing test with countdown timer (30s, 1min, 2min)
- View typing history and progress
- Admin panel to manage content and view analytics

ERD Overview

Entities:

1. User (id, username, email, password, role)
2. TypingTest (id, title, content, duration)
3. TypingResult (id, user_id, test_id, wpm, accuracy, errors, date_taken)

Folder Structure

Frontend (React):

- src/components/
- src/pages/
- src/services/
- src/utils/

Backend (Spring Boot):

- controller/

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- service/
- model/
- repository/
- TypingSystemApplication.java

Project Timeline

Week 1: Project setup, ERD, and database schema design

Week 2: Backend API development (User, Test, Result)

Week 3: Frontend layout and typing logic

Week 4: Integration, testing, and polishing UI

Week 5: Final testing and presentation prep