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Course: Web Design and Programming (CEN301)

Github Repository Link: https://github.com/tunahanekelik/MoodMart.git

MoodMart
Mood-Based E-Commerce Platform

Abstract

MoodMart is a mood-based e-commerce platform designed to enhance user experience by recommending products according to the user's emotional state. Unlike traditional e-commerce systems that rely mainly on categories and filters, MoodMart introduces a personalized shopping approach by allowing users to browse products based on moods such as happy, calm, or energetic. The system is developed using a modern web architecture with a Spring Boot backend and a React frontend. RESTful APIs are used for communication between the frontend and backend layers. This project aims to demonstrate how personalization and emotional context can be integrated into e-commerce systems to improve usability and user satisfaction.

1. Introduction

E-commerce platforms have become an essential part of daily life; however, most systems still offer similar user experiences based on static categories and keyword-based searches. These approaches often fail to address the emotional state of users during shopping. MoodMart proposes a different perspective by focusing on mood-based product discovery. The main motivation of this project is to create an original and personalized e-commerce experience that differentiates itself from traditional platforms. By combining modern web technologies and a user-centered design approach, MoodMart aims to make online shopping more intuitive and engaging.

2. Problem Defination

Traditional e-commerce platforms usually require users to know exactly what they are searching for. This creates a problem for users who want inspiration rather than specific products. Additionally,

existing systems do not consider the emotional state of users, which plays an important role in purchasing decisions. The lack of personalization based on mood results in a repetitive and less engaging shopping experience. MoodMart addresses this problem by allowing users to explore products according to their mood, reducing decision fatigue and improving overall satisfaction.

3. System Architecture

MoodMart follows a layered architecture consisting of frontend, backend, and database components. The backend is developed using **Spring Boot** and provides RESTful APIs for product management. The system follows the **Controller–Repository–Model** pattern to ensure clean code structure and maintainability.
The frontend is developed using **React**, which communicates with the backend through HTTP requests.
The database layer stores product information such as title, price, description, mood, and image URL.

4. Technologies Used

Java 17, Spring Boot, Spring Data JPA, Maven, RESTful API, React, MySQL / H2 Database

5. Implementation

The core entity of the system is the **Product** entity, which represents items sold on the platform. Products are categorized by mood and stored in the database. The backend exposes endpoints to retrieve all products and filter products by mood. The frontend consumes these APIs and dynamically displays products based on the selected mood. This structure allows easy scalability and future feature additions.

6. Conclusion and Future Work

MoodMart successfully demonstrates an alternative approach to e-commerce by integrating mood-based personalization. The project highlights the importance of user emotions in digital shopping experiences. As future work, the system can be extended with artificial intelligence-based recommendation algorithms, user accounts, and real-time mood analysis. Overall, MoodMart provides a solid foundation for innovative and user-centered e-commerce platforms.