

Backend:

Java: The core programming language used to implement the application.

Spring Framework: Specifically, Spring Boot for rapid development of RESTful and MVC-based applications.

MariaDB: The database is used to store orders, users etc.

Frontend:

Thymeleaf: A server-side Java templating engine for creating dynamic web pages.

HTML5 and CSS3: For structuring and styling the web pages, with modern features like responsive design.

Security:

BCrypt Password Encoding: To securely store user passwords.

Role-Based Access Control (RBAC): Defines roles like USER and ADMIN to restrict access to specific pages and features.

Features and Functionality:

Dynamic Data Management: Managed using Spring Boot and Spring Data JPA to handle entities like Product, User and Order.

Session Management: Ensures cart and wishlist data persist throughout the user session.

Validation: Includes server-side validation for registration (e.g., email format).

Development Tools:

Maven: Used as the build automation tool to manage dependencies and simplify project configuration.

IntelliJ IDEA: The primary IDE for coding and debugging.

Chatbot technologies:

Streamlit: For creating the interactive user interface.

LangChain: For document loading, text splitting and retrieval processes.

Transformers: For leveraging pre-trained NLP models like Flan-T5 and RoBERTa for summarization and QA tasks.

HuggingFace Sentence Transformers: For embedding the document chunks and enabling semantic search.

Chroma: For storing and retrieving document embeddings efficiently.