



E-commerce Management System

Spring 2022 (Professor M. H. Sadreddini)

Database Design

Overview

You should design and develop an e-commerce management system. The user interacts with the system through a user interface (UI). This interface can either be a graphical (GUI) or command-line (CLI) interface. In addition, an API should be implemented to facilitate the connection between the UI and the system database.

Specifications

Users, products, orders, and admins are the core elements of the system. There are N different products and a set of defined product categories. Each product may be associated with multiple categories. A product may be available in several stores. The stores update the system about the availability of the products on a daily basis. Users can watch out-of-stock products and when they become available the user is notified.

A user can search a product by title. The list of products can be filtered by various features such as price range and specific product types. Products can be sorted based on the highest and lowest price, rating, and the date they were added to the system. Similar products are shown to the user when he is viewing a product's page and details.

A user can order several products and request to send them to one of his addresses by various delivery methods such as air express. Also, tracking the order status and current location is possible. A user can apply a promotion code to his order. If the order is delayed or damaged upon arrival, the user can contact support and open a ticket for tracking the problem. Users can review and rate the products they have ordered. Other users can upvote or downvote these reviews.

Requirements

All the queries of your program must be written in raw SQL. You are free to implement your program in any programming language that has a SQL driver. ORM frameworks are prohibited to use.

To develop your program and avoid any system-specific dependencies, your project and SQL database must be containerized using [Docker](#). In addition, all the project progress and contributions must be recorded via commits in git repositories.

You are free to design and implement a graphical user interface or a comprehensive command-line interface for users to interact with the system. Note that having an interface is essential as the evaluation is based on examining the features via such interface.

Good luck.