Final Project Proposal

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Group 06

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Project Proposal

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Project title:

E-commerce application

Problem Statement:

Shopping in physical stores has many challenges, such as limited access due to distance, fixed opening hours, and difficulties in managing products. Customers often struggle to find what they need and keep track of their purchases, while businesses face problems with tracking sales, managing stock, and offering personalized services. That's why we created an e-commerce application to solve these problems. It will allow users to easily browse, manage, and buy products online. At the same time, it will give administrators simple tools to manage inventory, track sales, and create useful reports for better decision-making.

Expected outcomes:

The e-commerce application will provide:

- A user-friendly platform for customers to browse, add to cart, and purchase products easily.
- Tools for admin to manage products, track inventory, and generate sales and user activity reports.
- Efficient use of linked lists for managing product data and shopping cart information.

Proposed ADT(s):
- Purchase history of user
- Report for admin (user , sales)
- CRUD operations for admin : add product, check products information, update products information, delete products.
- CRUD operations for user : add product to cart; check products in cart; update amount of product in cart, delete items from cart

- Using Linked list : the Nodes of linked list is used to store products information:

  For admin:
    - To store products in stock
    - To check products information

  For users:
    - To store product in cart

Implementation Plan:

- Define the Data Structures:
    - Product: A class that holds attributes like product ID, name, price, and quantity.
    - Cart: A class that holds a list of Product objects and methods for adding/removing items.
    - Order: A class that manages order details, including the products purchased, total price, and order status.
    - Admin: A class to manage product inventory and view reports.
- Working with products in the store
    - Using a binary search tree to store products makes it easier for users to search for items in our store.
    - Using linked list to store the products information and uses linked list to perform CRUD operations such add products, read products, update and delete products
    - Writing the purchased product in CSV file to store customers records where it can be accessed and print out by admin as a report