Lasalle College

Project

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Information Systems: Implementation

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1. **Project Overview**

This is an Android Java application designed as an e-commerce platform with Firebase integration. The application provides functionality for searching, managing, and purchasing products. It offers features tailored for three types of users: Buyers, Admins, and Product Publishers. Additionally, users can access the app in two modes: Logged-in mode and Guest mode.

1. **Functional Specifications**

**Product Search**

* Search functionality allows users to find products using:
  + **Name**
  + **ID**
  + **Description**

**Buyer Functionalities**

* View product details.
* Add products to the **cart** for future purchases.
* Add products to the **Wishlist** for later reference.
* Complete purchases through the cart.

**Admin Functionalities**

* Monitor all products and user activities.
* Delete products that violate the platform’s **terms and policies**.

**Product Publisher Functionalities**

* Add new products, including details such as:
  + **Name**
  + **Description**
  + **Price**
  + **Image**
* Edit and delete products they have published.
* Cannot modify or delete products added by other publishers.

**Guest Access**

* Browse and view products.
* Cannot add products to the cart or Wishlist.
* Cannot purchase products.

1. **Features**

**General Features**

* Firebase integration for real-time database and authentication.
* Product search by **name**, **ID**, and **description**.
* Secure login system using Firebase Authentication.
* **Guest Mode** for users to view products without logging in.

**User Types and Permissions**

**1. Buyers**

* Search for products.
* Add products to **cart** for purchase.
* Add products to **Wishlist**.
* Purchase products.
* Cannot add, edit, or delete any products.

**2. Admins**

* Full access to the application.
* Delete products if deemed **malicious** or **infringing** on terms and policies.
* Manage all product data and user activities.

**3. Product Publishers**

* Add new products to the platform.
* Edit details of products they have published.
* Delete their own products.
* Cannot modify or delete products added by other publishers.

1. **Technologies Used**

* Programming Language: Java
* Database: Firebase Realtime Database
* Authentication: Firebase Authentication
* Frontend: Android XML for UI design
* Backend: Java with Firebase SDK

1. **Design Patterns**

* Singleton Database
* Observer Search Functionality
* MVC

1. **UML & Class Diagrams**
   1. A screenshot of a computer program

      Description automatically generatedClass Diagram
   2. UML Diagram