**SYSTEM DESIGN**

**Document For AN APLLICATION**

**Flipkart**

**INTRODUCTION:**

Flipkart is about your one-stop destination for all your online shopping needs! With the flipkart app, you can explore a wide range of products ranging from electronics, fashion, home essentials, to groceries, and much more, all at your fingertips. Enjoy seamless browsing, secure transactions, and speedy deliveries right to your doorstep. Discover incredible deals, exclusive offers, and a user-friendly experience designed to make your shopping journey delightful and convenient. This document explains the key features and how they work in simple terms.

**5 KEY FEATURES:**

* User Authentication
* Product Search and Display
* Shopping Cart Management
* Order Placement
* Reviews and Ratings

**1. HIGH-LEVEL SYSTEM DESIGN:**

High-level design refers to the initial phase of the design process where you create a broad overview of a system or project. It explains the architecture which is used to develop the system. In simple words, it's like drawing a blueprint or a map of your project before you start building it. High-level design helps you understand the overall structure, functionalities, and interactions of the system without delving into specific technical implementations. It focuses on concepts, architecture, and major modules or components of the system.

**FLIPKART WORKFLOW:**

Flipkart's workflow consists of two main modules:

* + - * User module
      * Admin module.

**USER MODULE:**

* This module encompasses the entire customer journey on the Flipkart platform.
* Users browse through products, View, and add items to their cart, and proceed to checkout.
* They provide shipping information, select payment methods, and review orders before confirming purchases.
* Users can track their orders, initiate returns, and leave feedback or reviews for products and sellers.
* Customer support services are also available to address any inquiries or concerns users may have.

**ADMIN MODULE:**

* The admin module is responsible for managing the backend operations of the Flipkart platform.
* Administrators oversee product listings, inventory management, and order processing.
* They monitor transactions, verify payments, and coordinate order fulfilment and shipping.
* The admin module also reviews customer feedbacks, inquiries, ensuring smooth operations and positive customer experiences.
* Additionally, administrators may have access to analytics tools and reports to analyse performance metrics and optimize business processes.

**A diagram of a flowchart

Description automatically generated**

**2. LOW-LEVEL SYSTEM DESIGN:**

Low-level system design refers to the process of designing the internal structure and components of a system at a detailed level, typically focusing on specific modules, algorithms, data structures, and interactions between them. This level of design is closer to implementation and involves making decisions that directly impact how the system will function and perform.

**REQUIRED FEATURES AND QUADRANT:**

**1. User Authentication:**

**Significance:** Trivial and Small

**Objective:** Allow users to register, login, and manage their accounts securely.

**Components:**

***User Registration:*** Collect user information (e.g., name, email, password).

***User Login****:* Authenticate users based on credentials.

***User Profile Management:*** Allow users to update their profile and manage settings.

**Explanation:**

User Authentication is a common feature in most of applications, especially in smaller systems or projects. Because a simple web application with basic user registration, login, and profile management functionality might not require for design considerations.

User Authentication system has unique or complex requirements that go beyond standard practices. For example, in systems that require multi-factor authentication, fine-grained access control with multiple user roles and permissions.

**2. Product Search and Display:**

**Significance:** Novel and Large

**Objective:** Enable users to search for products and view detailed information.

**Components:**

***Product CatLog:*** Store information about available products (e.g., name, description, price, images).

***Search Engine:*** Implement search functionality based on product attributes.

***Product Detail Pages:*** Display detailed information about each product.

**Explanation:**

In Flipkart Search and Display is a common feature Because, If the search feature is relatively simple and only involves searching through a small dataset with basic keyword matching, the design might be considered novel. If the system has a straightforward navigation structure with a small number of pages or screens and minimal hierarchy, the design might be considered novel.so it has to be mature platform and low uncertainty.

Search and Display might be more complex systems or when dealing with large datasets and sophisticated search requirements, implementing search and navigation functionalities can be quite challenging and Large.

**3. Shopping Cart Management:**

**Significance:** Trivial and Large

**Objective:** Allow users to add/remove items and manage their shopping cart.

**Components:**

***Cart Management System:*** Store user-selected items and quantities.

***Add/Remove Items:*** Enable users to add or remove items from their cart.

***Cart Persistence:*** Maintain cart state across user sessions.

**Explanation:**

Shopping cart and checkout might be trivial because we can add, remove, and modify items and we have multiple payment options so it might consider as Trivial system or project.

Shopping cart and checkout has more complex or customized e-commerce systems, designing and implementing a shopping cart and checkout process can be quite challenging and Large.

**4. Order Placement:**

**Significance:** Novel and Large

**Objective:** Facilitate users to place orders for selected items.

**Components:**

***Order Processing System:*** Manage the lifecycle of orders from creation to fulfilment.

***Order Confirmation:*** Provide users with confirmation of their order placement.

***Order Tracking:*** Allow users to track the status of their orders.

**Explanation:**

Order and delivery business has unique or complex requirements related to order and delivery management, such as custom pricing structures, subscription-based services, or intricate delivery scheduling, the design becomes more novel.

Order and delivery include basic functionalities such as adding items to a shopping cart, placing an order, entering shipping information, and selecting delivery options. It operates on a small scale with a manageable number of orders and delivery logistics, the design of order and delivery systems may not require extensive complexity.

**5 Reviews and Ratings:**

**Significance:** Trivial and Large

**Objective:** Allow users to provide feedback and ratings for products they have purchased or used.

**Components:**

***Review Submission:*** Enable users to submit reviews for products.

***Rating System:*** Allow users to rate products based on their experience.

***Moderation System:*** Implement a system to moderate and manage reviews for inappropriate content or spam.

**Explanation:**

Reviews and ratings might be trivial, If the reviews and ratings system is relatively straightforward, with simple features such as allowing users to submit text-based reviews and rate items on a numerical scale, the design might be considered trivial.

Review and ratings might be Large, If the reviews and ratings system need to support advanced features such as rich media reviews (e.g., photos or videos), tagging and categorization of reviews, sentiment analysis, or personalized recommendations based on user preferences, the design becomes Larger.

**Conclusion:**

Flipkart is dedicated to delivering an effortless and delightful shopping experience for customers of all preferences and needs. With distinctive features such as personalized user accounts, seamless product discovery, secure payment options, efficient order tracking, and responsive customer service, shoppers can engage in a fulfilling and convenient online shopping journey.

**\*\*\*\*\*\*\*\*\*\* THE END \*\*\*\*\*\*\*\*\*\***