Project Scope Document: Online Retail Store - E-Commerce Database Management System

1. Executive Summary:
The project aims to design and implement a rigid Database Management System (DBMS) for an online retail store like BlinkIt. The system will manage various aspects of the retail business, including product inventory, customer information, order processing, employee management and vendor interactions. The goal is to create a scalable and efficient database infrastructure to support BlinkIt-like e-commerce operations.

2. Business Objectives:

- Efficiently manage product inventory, customer data, and order processing.
- Provide a seamless shopping experience for customers on the BlinkIt-like platform.
- Facilitate vendor interactions, product listings, and pricing updates.
- Implement a secure and scalable database architecture.
- Implement an efficient inventory management system to reduce holding costs.

3. Database Requirements:

Product Information:

- Product ID, name, description, category, price and stock levels.
- Product images and specifications.
- Vendor details and product sourcing information.
- Product availability, discounts and promotion.

Customer Information:

- Customer ID, name, contact details, and address.
- Order history, including past purchases and returns.
- Payment information is securely stored.
- Feedback and Reviews.

Order Processing:

- Order ID, timestamp, customer details, and shipping information.
- Product details, quantities, and total order value.
- Order status and tracking information.

Vendor Management:

- Vendor ID, name, contact details, and product listings.
- Price updates and order fulfilment status.
- Communication logs with vendors.

User Authentication and Authorization:

- Secure storage of user credentials.
- Authorisation levels for customers, administrators, and vendors.

4. Key Features:

- Create Accounts: Users can create accounts and log into the website.
- Contact Details: users can store their name and contact details, such as email and phone number.
- Addresses: Users can add one or more addresses to their account and set a default shipping address.
- Payment methods: Users can add one or more payment methods to their account and set a default payment method.
- Products: The website can store a large number of products.
- Categories: Each product belongs to a category, and categories can belong to further sub-categories.
- Product Variations: Each product can have several variations based on its quantities.
- Number in stock: The website will keep track of the number of each product in stock.
- Shopping cart: The customers can add one or more products to their shopping cart, and the cart is not saved within a database unless the customer has not logged in.
- Payment Details: A user needs to provide their payment details and address as a part of their placing order.
- Shipping method: The user can select a shipping method from a list of methods—each payment method has a standard pricing.
- Order status: The order and shipping process follows several stages once the order is placed, such as processing, delivery in progress and delivered.
- Ratings and Reviews: Users can leave reviews for the products they have purchased, which are ratings from 1 to 5 and a short written review.
- Order history: Customers can view their past orders and reorder from their order history.
- Product Recommendations: Use to suggest products based on user preferences and purchase history.
- Discounts and promotions: The website will also allow certain promotions, allowing a specific product segment to have a discount.

- Optimisations: It conveys that the store is designed and optimized for seamless use on mobile devices. This ensures a user-friendly experience for customers accessing the store from their smartphones or tablets.
- Product catalogue with search and filtering capabilities.
- Secure customer authentication and authorisation processes.
- Shopping cart functionality with real-time stock updates.
- Order tracking and status updates for customers.
- Vendor portal for product listings, pricing updates, and order processing.

5. Technical Requirements:

Database Management System: MySQL or equivalent.
MySQL helps us to organize and manage information by making data connections well-organized and will keep the information accurate.

Frontend: HTML5, CSS3, JavaScript, React.js(if required).
HTML will define the basic structure and layout of the content, CSS will help us to define the visual appearance and layout of web content, shaping the look and feel and JavaScript is used to enhance web pages by providing interactivity, dynamic content updates, and user interface improvements.

Backend: Python, SQL and MySQL.
Python is employed for server-side logic and overall backend development, SQl is used for interacting with relational databases, and MySQL serves as a specific database solution, collectively contributing to the design and functionality of the backend for an online retail shop.

6. Constraints:

- Customers can cancel an order within a specified time frame after placing it.
- Customers with the same mobile number can have only one account.
- For home delivery, there should be a minimum order amount.
- Ensure essential details like address are provided when the customer places an order, which defines that specific fields must not have null values.
- Define the maximum length of feedback given by the customer.
- There can be a many-to-many relationship, like it provides flexibility to associate products with multiple categories and vice versa, making the system more adaptable to various product attributes and classifications.

TEAM MEMBERS (Tut Group 5):

- **Anish Bera (2022076):** Developed Key features, Database Requirements and Summary
- **Nutan Kumari (2022341):** Developed Constraints, Technical requirements and Business Requirements.