Online Retail Shop: Database Management

Sanket Totala - 100050011
Umang Mathur- 100050012
Sameer Kumar Agarwal - 100050021
Piyush Kumar - 100050023

Project Description:

The project is aimed at developing a Web-based Database Management System that simulates an online Retail Shopping system. **Online shopping** or **online retailing** is a form of electronic commerce whereby consumers directly buy goods or services from a seller over the Internet without an intermediary service. Examples of such applications are retail sites such as www.amazon.com or www.flipkart.com .
The simulation would comprise of handling retail order requests, tracking services, user accounts, tie-ups, etc. Currently planned to have front-end support of jsp, whereas back-end remains on mysql.

Implementation:

The **major entities** would be:

1. User : user IDs, their contact and account information
2. Product : details of products, cost, availability, category, etc. Might be split into multiple category tables (like books, computer accessories, etc
3. Transaction : deals with the details of delivery of item to the consumer, status of the delivery, etc
4. Tie-ups : link with other online electronic retailers, listing availability at their online stores
5. Employee : different employees and their data.
6. Servers : information about the web servers hosting the website
7. Warehouse : the locations where the goods are stored.
8. Advertisers : secondary source of income
9. Suppliers : details of the source of products, the type of products, quantities, etc

The **major relationships** would be:

1. Orders : Relates users, products and transaction entities for successful orders
2. Works-for: Relates employees with their higher officials

3. Employee type to salary : details of monetary facilitation based on their employee status
4. Accounts : employee salary, expenditure on servers, etc (might be split into multiple tables for different categories (employee, tie-up, supplier, server, advertisers, supply-chain budget, warehouses, bonuses, different locations (for MNC), etc)

Meaningful data that can be extracted:

1. Sales a) in the previous month/year/week/decade. b) product/category specific sales
2. Accounts queries; profits, expenditures on various areas, etc
3. Windowing on number of users.
4. Closeness of products : to be used for suggesting similar products that he might like when he purchases some product .
5. Hit rate : how much of the demand is being fulfilled. Statistics related to marketing.
6. Resource utilization : which resource (servers, employees, etc) are overburdened, and which are redundant cost-adders.

Other operations:

1. Authorization to different parts of the database to different project groups
2. Views provided by partner retailers. Also, views for temporary employees, interns, etc;
3. Roles and privileges to different employees.
4. Cross tabulation (ex: sales v/s type of products v/s number of users etc.,) using OLAP.
5. Triggers (eg : updations in the transaction table has ripples to Order and User tables (changes in Order status, User's pending payments, etc)).

Functional dependencies include that any entry in any relation table must have an entry in the corresponding entity table too (like transaction table must not have a buyer that is not in the user table; any employee entry in accounts table must have an entry in the employee table, etc)