GROUP 11

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- **TOPIC NAME : ** *E-Commerce Web Application*
- **STRUCTURED DESCRIPTION**

A project on E-Commerce Web Application is being proposed which would enhance the business to consumer shopping experience and thus reduce human effort, making the entire process effective and efficient. This project will be developed considering the needs for electronic commerce and database management system in the present day. This new system of online retail will require an efficient and optimized database system for storing the huge bulk of data pertaining to customers and products, and will also aid in the generation and analysis of statistical information.

Our proposed online application software will perform functions like the following:-

A user can login into the system and can:

- Search products of his choice
- Filter out product options according to needs
- Have a shopping cart assigned to each user to which products can be added and removed from
- Buy products
- Rate products

The administrator can login into the system and can:

- View the inventory status
- Estimate inventory requirements according to product popularity and place orders to vendors
- Introduce promotional offers based on seasonal and user trends

This online shopping system is economically feasible because:

1. This system is more efficient and effective than a slow and taxing manual system as it provides an automated environment which works faster and reduces manpower.
2. Interaction with the system can be made with the help of a user-friendly GUI.
3. The system will also be more secure which in turn will save money much more than what is required to build the system.

The system is technically feasible because:

1. The software and hardware required to build the system are easily available and are easy to install.
2. The GUI is easy to understand, learn and use even for a naïve user

- **MOTIVATION of TOPIC :**

The ordinary physical process of buying and selling goods consume up significant amount of energy and time, which is scarce, considering our fast-paced modern life. Customers also have to sometimes face issues related to poor quality of goods and thereby their return. The online shopping system, on the other hand, works far more efficiently in these matters and provides customers with a wide range of features which are generally unavailable at the physical stores.

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Some of the advantages for having e-web-store are:

- Convenience-People can access the system from anywhere in the world, having an internet connectivity and thus human effort is reduced.
- Security and Privacy- Each user has his individual credentials with which he can login into the system and thus have a secured shopping experience.
- Efficient-The entire process being automated, customers are able to find and buy selected products with much ease and can also choose goods by filtering out the unrequired ones.
- Reviews-Customers can rate products and share their reviews which are useful for others buying the same kind of products.
- Recommendations-The online application has a feature for providing recommended products to customers based on their individual selections.
This e-web-store project will use the Oracle database for storing the large volume of user and product data. The database will also be required to formulate a wide variety of queries in order to provide with recommendations and statistical data.

➔ Advantage of DBMS in proposed application

➢ This project will require a large collection of customer and product records to be stored without redundancy and which can be accessed using simple queries from different tables. Also, the system requires new details to be added as well as current records to be updated in an efficient manner. The system being accessed by more than one person simultaneously, some restrictions are employed in order to maintain security. A user has to work down a hierarchy in order to access needed data.

▪ Public domain and/or proprietary software requirement
   ➢ **Oracle 11g** will be used for the database purposes.
   ➢ **Scripting Language : PHP, JavaScript**

▪ DATA MANAGEMENT REQUIREMENTS :

Online sales are part of everyday business life for everyone from toy stores to groceries to engineering firms. Any business can gain considerable advantage by maintaining an online sales presence. The data management requirements in our proposed online retail system can be briefly stated as follows:

- Easy access to customer data
➔The need to combine customer data with targeted marketing activities such as email, text messaging and direct mail.
   - Creating a growing list of customers who have said 'Yes, I WANT to hear from YOUR business'

   ➔Strategic Business planning based on customer segmentation and corresponding requirement
   - Measuring the response rate, identifying what works and what doesn't.

The above mentioned functionalities derived from efficient data management leads to better response to marketing strategies, more repeat sales, more satisfied and loyal customers, more new customers, less money wasted on inefficient marketing.

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- **APPLICATION FUNCTIONALITIES:**

User Functionalities:

This section describes the features of the application which focus on the end-user perspective. The brief introduction on the functionalities which the end-user can experience are mentioned below:

- ➢ Sign up and Sign in:
  - • All new users shall be allowed to "sign-up" for an account required for shopping online.
  - • These user credentials shall be stored in the database and every time the user logs afterwards the system will verify the user credentials against the entries in the DB as part of the "sign-in".

- ➢ Search:
  - • The user will be given an option to search a product of his choice among the various kinds of products available.
  - • The user will be able to search based on brands, cost and few other attributes associated with each product.

- ➢ Display the products:
  - • The results of the search options shall be displayed to the user as "Thumbnails".
  - • User will be able to see the pic of the product, other details of the products which include price, brand, current inventory status and other suitable attributes pertaining to the product.
  - • There will be an option to add a displayed product to the "cart".

- ➢ Cart-functionalities:
  - • A virtual cart shall be provided to each of the end-user where the end-user can store the products which are to be bought. The cart shall be listing the products selected by the user.
  - • The end user can add or delete the products in the cart.

- ➢ Rating the product:
  - • The end-user shall be allowed to "rate" a product based on his/her views after the use of the product.
  - • The "rating" of the product shall be shown as an attribute whenever the product is shown to the end-user after a search result.

- ➢ Feedback/Review of a Product:
  User may choose to provide his/her feedback on a particular product

- ➢ Complaint Box:
  User can register complaints regarding the product he brought describing the problem, also he will be asked to enter product details like purchase date, receipt number etc.

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Administrator Functionalities:

This section describes the features of the application which focus on the administrator perspective. The brief introduction on the functionalities allowed to the administrator of the application are mentioned below:

- ➢ Review of Quarterly sales data
  - Based on location – can check sales details in each location
  - Based on department – keep tracks of sales in every department
- ➢ Product Management
  - Can add new items into the available product's list, also decide on their prices
  - Promotional Offers on the items available are decided by admin.
- ➢ Inventory Management
  - Will be able to decide whether order for new stock from warehouse is to be placed, based on current status of stock.
- ➢ Customer Care
  - Will look into the complaints registered by customers and try to solve their issues on a priority basis.
  - Follow up with customers regarding promotional offers, deals etc.

- ▪ **POTENTIAL FOR DERIVATION OF NEW DATA FROM STORED DATA**
  - How many of the particular product selected/being viewed by a user has been sold in the last week/month?
    - ➔ to help user make an appropriate choice by providing an insight of its popularity
  - The most popular product in the filtered category by user in terms of
    - ➔ Sales figure
    - ➔ Customer satisfaction
  - Consumption pattern of users based on geographic location (Analysis of preference pattern of regional population)
  - Consumption pattern of any particular product based on climatic conditions/seasons (eg. woollen garments, winter cosmetics)
  - What other customers are viewing presently (Displaying search history from the last 5-10 minutes)
  - Recommendation of newer products in similar category once a user logs in based on his previous purchase history
  - When a user is viewing a particular product, suggestions of accessory/combo products of similar category. Combo Product as a deal for potential savings. Accessory Products as potential complimentary peripherals. (eg. Couple watch pack when viewing either a men's or women's watch separately ; Headphone suggestions from the same brand when viewing a cellular phone)