Database Management Systems

COP5725

Online Customer Sales Management

Project Phase- II

Introduction

The online customer sales management database provides a platform to analyze the details of customers, sales & products. This database holds a broad view of customer shopping trends, specification of a certain products, delivery details of any order & the respective profits earned by the owner. This database is of great use to the customers to know the discount on any product and to the business retailer analyst to comment on the online sales market. In nutshell, it aims at improving the customer relations.

Overview

 In this second phase of Database Management Project, we aim at throwing some light on the basic Conceptual & User Interface design of the website. Conceptual Database Design constitute of Entity Relationship Diagram which describes the relationships among various entities & tells about its attributes. On the other hand, User interface Design includes the flow chart of expected webpages in the website to navigate through the desired results. We are imagining of a user, who is either a head or regional manager of the online store & hence all the webpages have been designed to access him in navigating the website to analyze the customer & sales statistics.

Conceptual database design:

- ## **Entity Relationship Diagram Design:**

    ER diagram is on separate page.

- ## **Important concepts of ER Diagram:**

Following are some important aspects of the ER Diagram:

- ➢ **Cardinalities**
    - **(Head, Regional Manager): (1, m)**
      One head is assigned multiple Regional Mangers which means many Regional Mangers work under one head.

    - **(Regional Manager, Customer): (1, m)**
      Again one Regional Manager is in the capacity to deal with many customers simultaneously but customers can contact only its one Regional Manager.

    - **(Customer, Order): (n, m)**

One customer can order any number of products.

- **(Product, Order): (m, n)**
  Here an order can include multiple number of products and a product name can fall in multiple order category.

- **(Product, Shipping): (1,1)**
  One product can be associated with only one shipping entity and one item in shipping can be related to only one product.

- **(Order, Return): (m,1)**
  For one order multiple return requests can be filed but only one will be considered and only one entity in return is associated with order.

- **(Head, Credentials): (1,1)**
  One head can have only one credential and one credential can belong to only one head.

- **(Regional Manager, Credentials): (1,1)**
  One head can have only one credential and one credential can belong to only one head.

➢ **Total Participation**

Here we can observe that 'order' has total participation with 'customer'. It is so because the entity 'order' is fully dependent on entity 'customer'. Similarly, we can see that 'Product' and 'return' have total participation with entity 'customer'. Credentials has total participation with head and Regional managers.
Lastly, 'Shipping' has total participation with entity 'product'.

➢ **Weak Entities**
In this ER Diagram, we have 'Return' as the weak entity. This is because return is dependent on the order entity. In this case, r_no. is the partial key.
Besides, Credentials is also a weak entity. It is connected with head and Regional Managers.
Order is a weak entity because it depends upon customer.
Product is a weak entity because it depends on what the order is.

Shipping is also a weak entity. It is because shipping can only be made when there is a product to ship.

➢ **Multivalued Attributes**
In the person entity, phone number falls in the category of multivalued attributes. It means this attribute can contain more than one values.
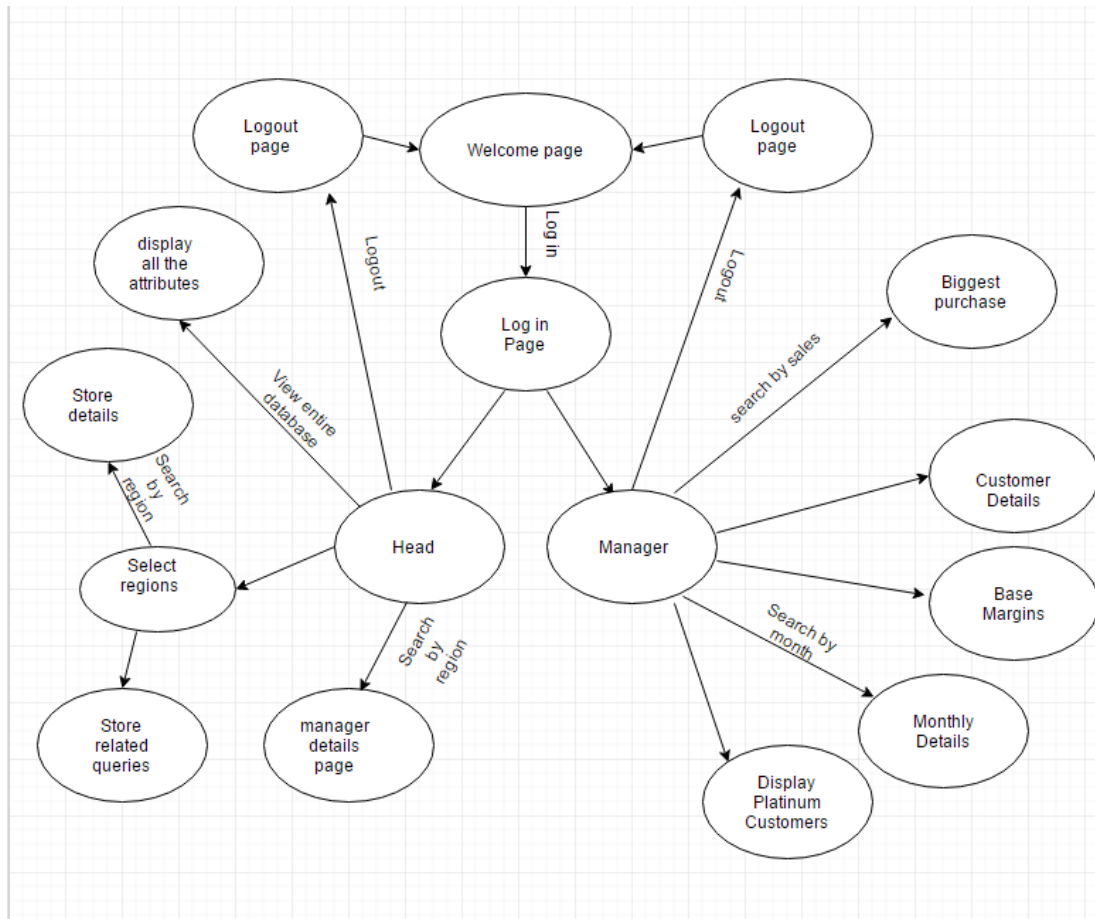
User Interface design

Fig2.1 User interface Diagram

This Database Management Project aims at managing the sales statistics of an online retail store. The website serves as a platform to analyze the details of yearly sales & check the customer associated data. We are motivated to design the flow of the web pages in the following manner.

Navigation details of the Web site

- **Home Webpage:**

  Home Webpage of 'Online Customer Sales Management System' opens a window which offers the login site for head & the Regional manager. These two are the persons who can navigate through the website to analyze the data. The user has to make a choice between head and the regional manager for moving to the next webpage.
  Role of Head: Head is the supreme user & works in the capacity to access all the details of database without any constraint.
  Role of Manager: Every manger is assigned only to a specific region & thus his/her access rights are limited to his region sales only.
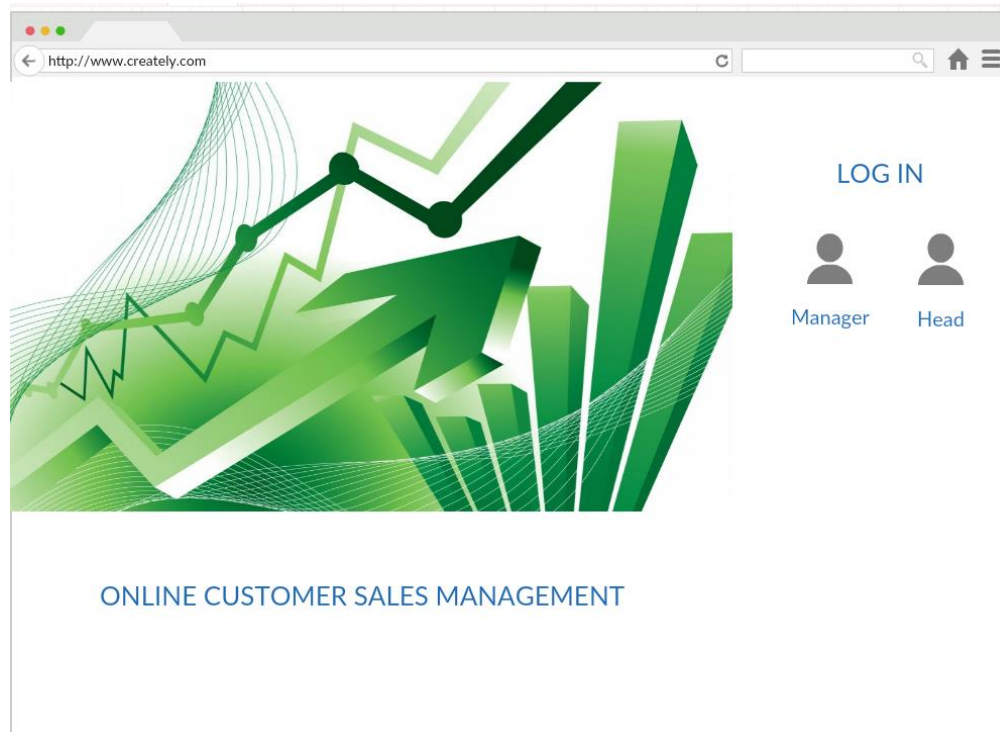

Fig 2.2(a) Screenshot of home page

- **Sign in authorization:**
   On navigating the second home page, the user jumps onto the login credential webpage of either head or regional manager as chosen on previous page.
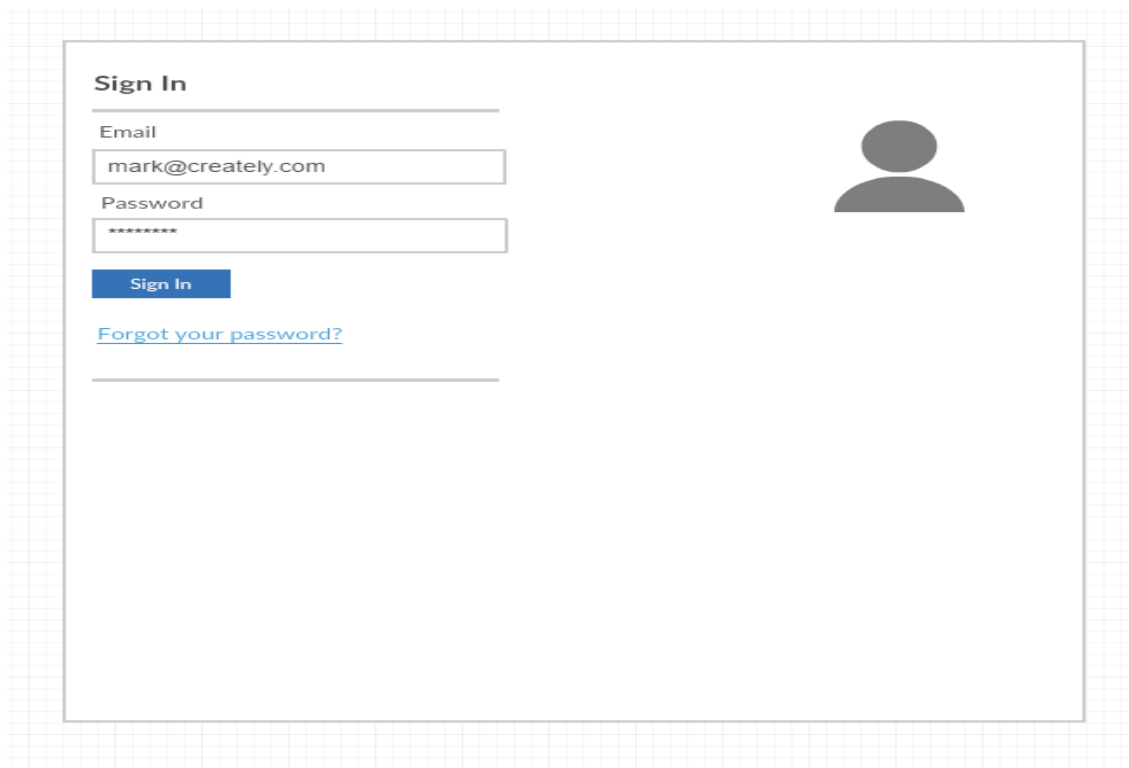
Fig 2.2(b) Screenshot of sign up page

- **View observed by Manger webpage:**
  This webpage will contain the sign in information of Regional Manger & will authorize the Regional manager to access the customer sales detail of the specified region only.
  It contains information like Monthly sales, Customer details, platinum customer and overall profit. Also he/she has the privilege to put filters and access the data through its shipping method, product name, customer type, product category. Also it shows the base margin.
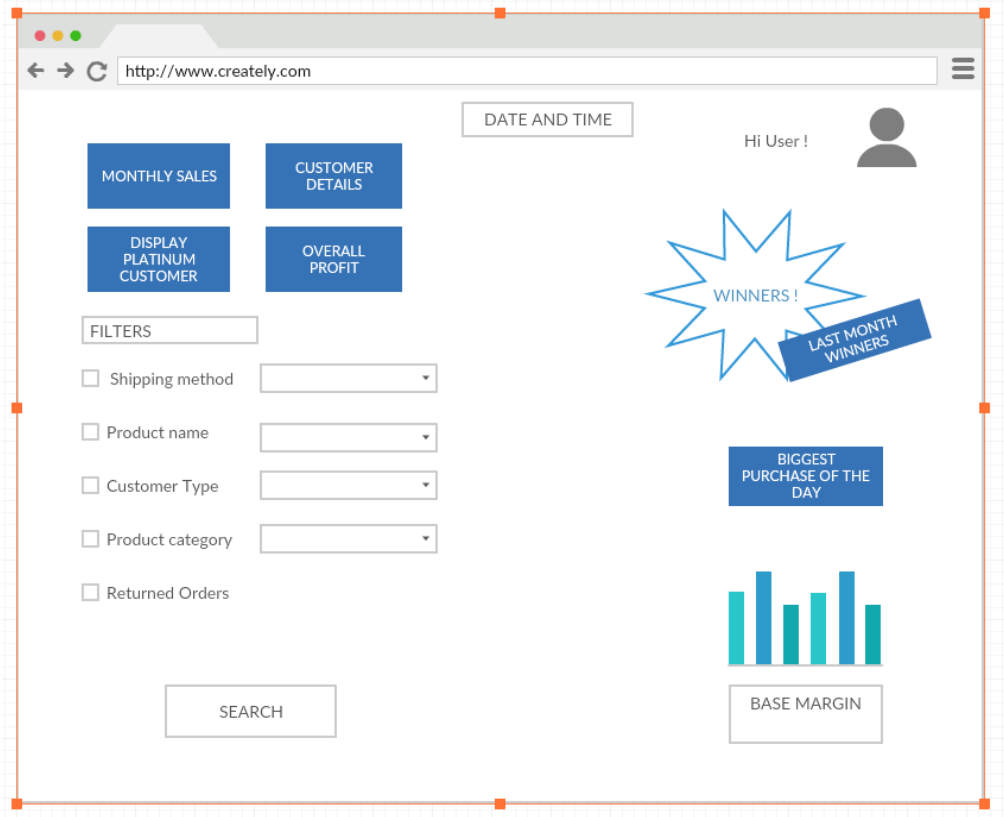
Fig 2.2(c) Screenshot of view of regional Manager

- **View by Regional Manager Webpage**:
  Once the user is authorized with his credentials, the next webpage lets him to access queries. This means he can choose his region & Can execute queries after choosing the respective tables. He has the privilege to calculate store wise profit. Besides, he can also view entire database, manger details & store specific details. Regional Manager can also observe sales graph & predict the future profits.
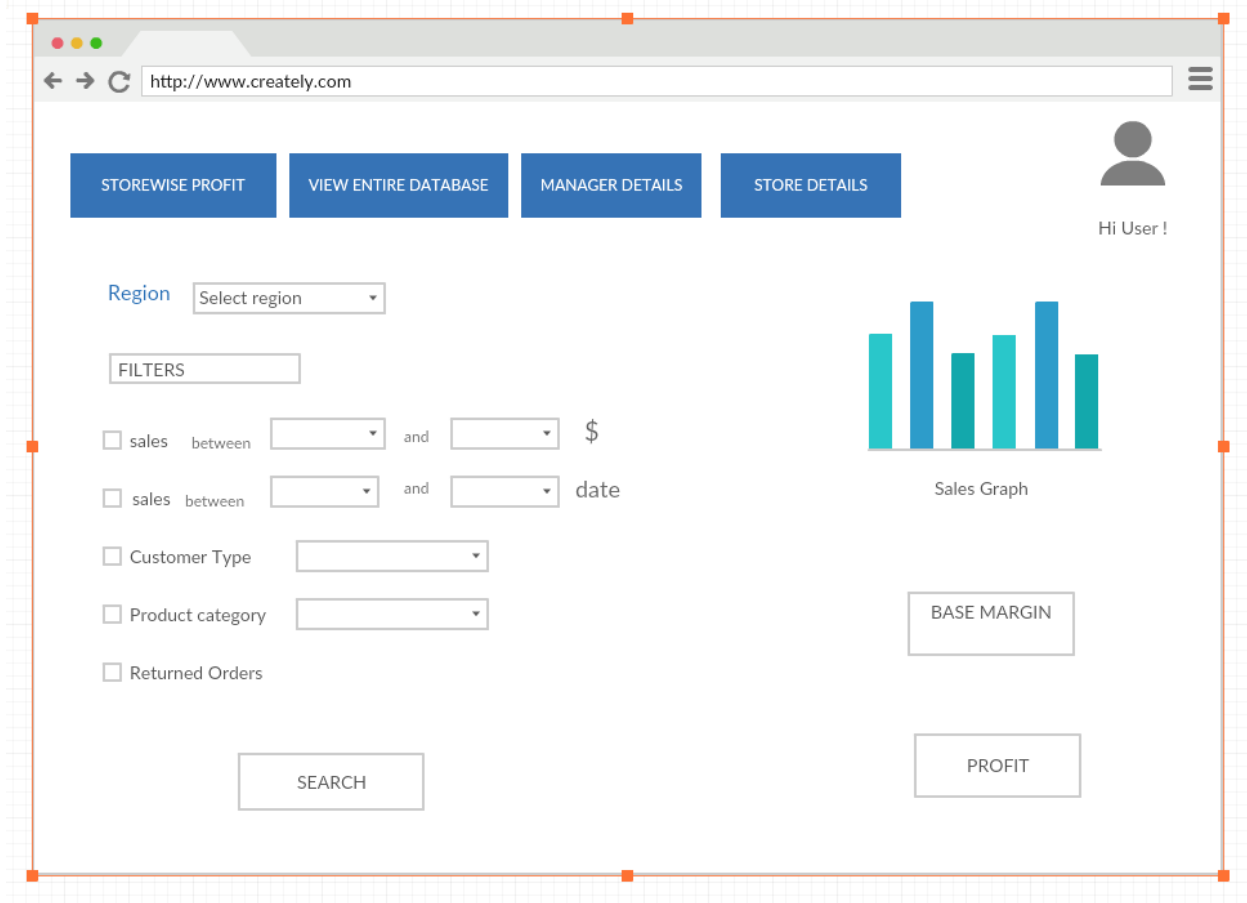
Fig 2.2(d) Screenshot of view observed by Head

References

[1] - www.creately.com for drawing User interface

[2] - www.draw.io for picturizing ER Diagrams

[3] – Lectures slides of Database Management System

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