***CASE STUDY***

***IN RELATIONAL DATABASE DESIGN***

***TITLE: ECOMMERCE***

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**Abstract**

The objective of this thesis is, E-commerce brings convenience for customers as they do not have to leave home and only need to browse websites online, especially for buying the products which are not sold in nearby shops. It could help customers buy a wider range of products and save customers' time. Consumers also gain power through online shopping. One case study “ECOMMERCE” is presented. Input for this case study is taken from its informal specification to a relational schema using entity-relationship modelling and its translation to relational

model, to database schema, to implementation of the database, to interactive SQL querying of the installed database (SQL/ Oracle).

***Functional requirement:***

1. **A**dmin can view details of customers who have not purchased anything.

2. **A**dmin can view the products purchased on a particular date.

3. **A** new user can register on the website.

4. **C**ustomers can filter the product based on the product details.

5. **A** customer can view the total price of the product present in the cart.

6. **A**dmin can start a sale with a certain discount on every product.

***Acknowledgments***

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***Chapter 1: Introduction***

**· *Database Management Systems*:**

A database management system (or DBMS) is

essentially nothing more than a computerized data keeping system. Users of the system are given facilities to perform several kinds of operations on such a system for either manipulation of the data in the database or the management of the database structure itself.

**· *Relational Database Management System*:** A

relational database is a type of database that stores and provides access to data points that are related to one another. The columns of the table hold attributes of the data, and each record usually has a value for each attribute, making it easy to establish the relationships among data points.

**· *ER Diagram*:**

An Entity–relationship model (ER model) describes the structure of a database with the help of a diagram, which is known as Entity Relationship Diagram (ER Diagram). An ER model is a design or blueprint of a database that can later be implemented as a database. The main components of the E-R model are: entity set and relationship set.

· ***Brief introduction of case study:***

The main purpose to a database is to store information. Have a question about a customer order? Check the database. Want to know a product price? Check the database.

By using a database, a web application can ignore the actual data and focus more on the presentation and behaviour of that data. The end result is that the amount of code and logic in the web application is much smaller and easier to understand.

***Objective of the case study*:**

1. Track Transactions.

2. Organize Product.

3. Provide Structure to your stored data.

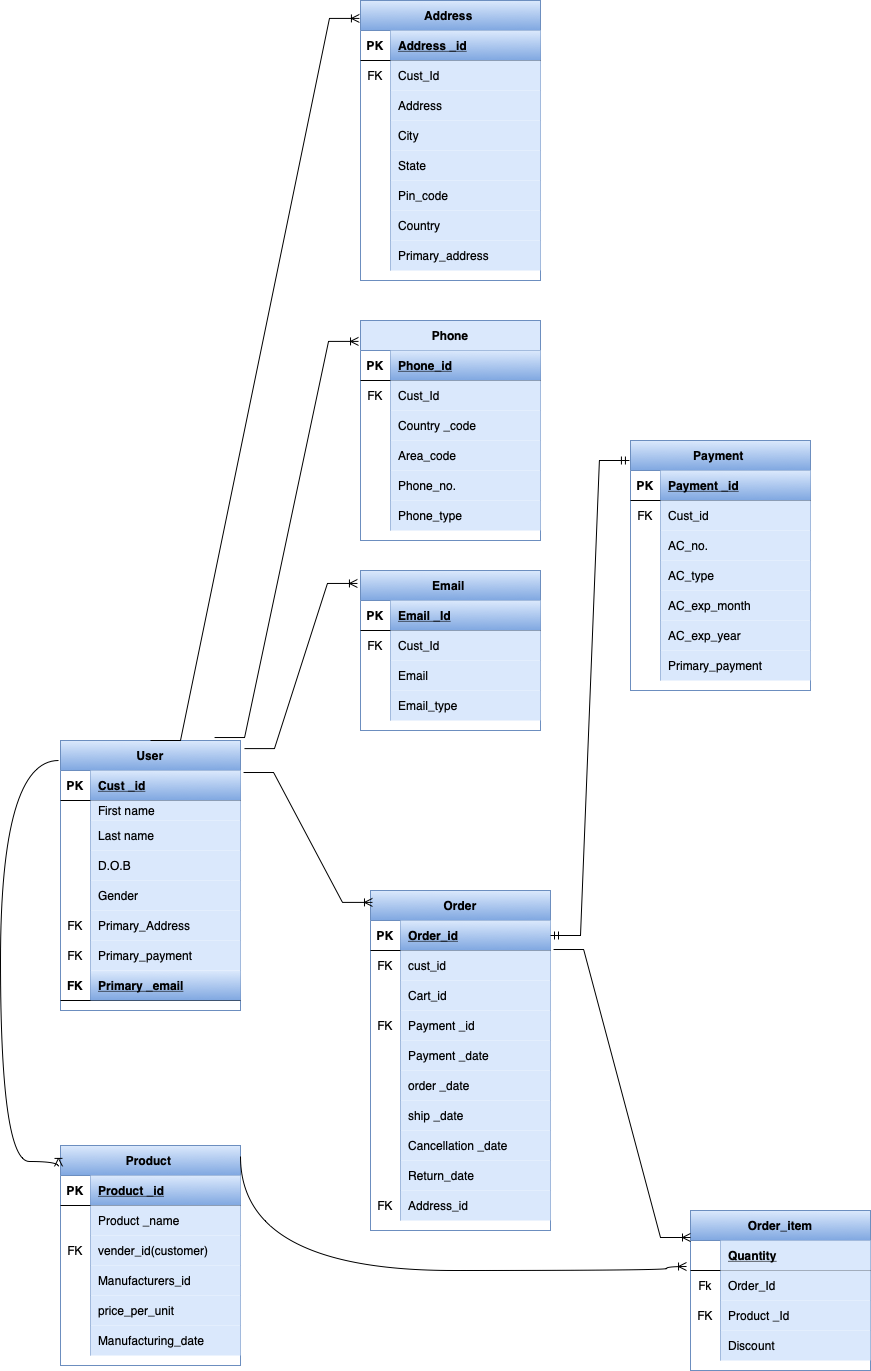
***Chapter 2: Name of Case study***

**3.1 *Case study Informal Description*:** The objective of this thesis is, E

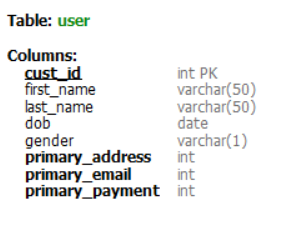
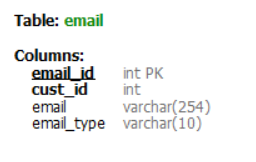
commerce brings convenience for customers as they do not have to leave home and only need to browse websites online, especially for buying the products which are not sold in nearby shops. It could help customers buy a wider range of products and save customers' time. Consumers also gain power through online shopping. One case study “ECOMMERCE” is presented. Input for this case study is taken from its informal specification to a relational schema using entity-relationship modelling and its translation to relational model, to database schema, to implementation of the database, to interactive SQL querying of the installed database (SQL/Oracle).

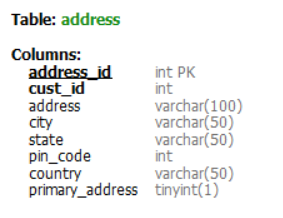
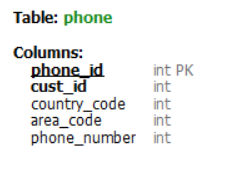
**3.2 *Case study Logical Model*:**

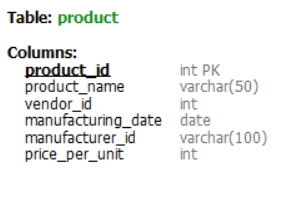
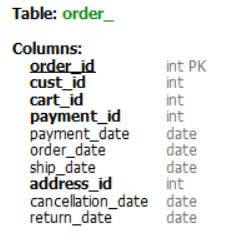
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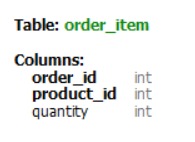
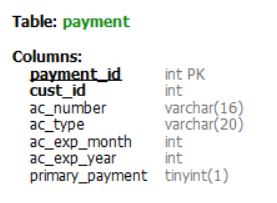


**3.3 *Case Study Physical Model*:**

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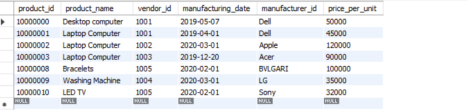
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**3.4 *Case Study Interactive Queries:***

**#query1** - *“Product price greater than 10000”*

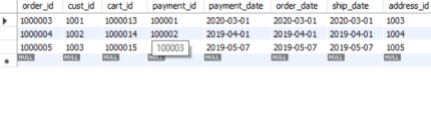
select \* from product where price\_per\_unit > 10000;



**#query 2** - *“Selecting order where delivery state is Punjab”*

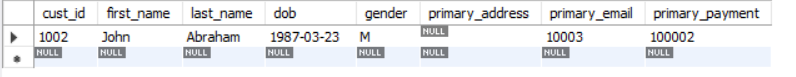
select \* from order\_ where address\_id in (

select address\_id from address where state = 'Punjab’);



**#query3** – *“Select user’s D.O.B =1987-3-23”*

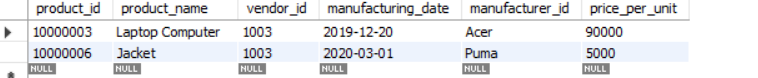
select \* from user where dob = "1987-3-23";



**#query4** - *“Select Product which is sold by Deepak”*

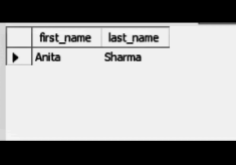
select \* from product where vendor\_id in (

select cust\_id from user where first\_name = 'Deepak' );



**#query5** – *“Select user who have cancelled an Order”*

select first\_name, last\_name from user where cust\_id in (select cust\_id from order\_ where cancellation\_date is not null );

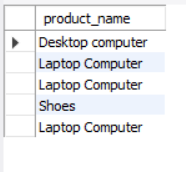


**#query6** - *“Select product name where quantity is >=3 in order item.”*

select product\_name from product where product\_id in (

select product\_id from order\_item where quantity >= 3

);



**#query7** – *“Select user who is Male.”*

select first\_name, last\_name from user where gender='M';

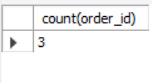


**#query8** - *“How many payments done via visa card.”*

select count(order\_id) from order\_ where payment\_id in (

select payment\_id from payment where ac\_type = 'Visa'

);



**#query 9** - “*Total payment done via visa card.”*

select sum(price\_per\_unit) from product where product\_id in (

select product\_id from order\_item where order\_id in (

select order\_id from order\_ where payment\_id in (

select payment\_id from payment where ac\_type = 'Visa'

)

)

);

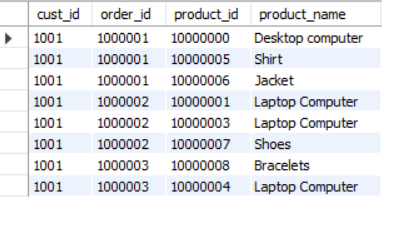


**#query10** - *“Checking which product user 1001 has bought.”*

select o.cust\_id, oI.order\_id, p.product\_id, p.product\_name from

order\_item as oI inner join (select \* from order\_ where cust\_id = 1001) as o on oI.order\_id = o.order\_id

inner join product as p on oI.product\_id = p.product\_id;

 **#query11** – *“Total money spended by user 1001”*

select sum(oI.quantity\*p.price\_per\_unit) from order\_item as oI inner join (select \* from order\_ where cust\_id = 1001) as o on oI.order\_id = o.order\_id inner join product as p on oI.product\_id = p.product\_id;



***Conclusion and Future Work*: In future if our project proceeds into web development or becomes an app, we will be adding some new features in it which will make it easy for our users to access it.**

**In future when any customer will login into our app/ site, the user will be able to see whether any old /latest products are available or not in the store. If yes, the user can book the product.**

**In future the customer will be able to track the order. brand promise is to deliver the broadest selection of products and services at the lowest prices with minimal hassle.**

**In future customers will be able to know beforehand on which date the product will come back in stock.**

***Bibliography*:**

**1. https://app.diagrams.net/**

**2. https://www.mysql.com/**