ONLINE SHOPPING MANAGEMENT SYSTEM

ADVANCE DATABASE DESIGN

603-B
Tech07

Sacred Heart University
School of Computer Science And Engineering
The Jack Welch College Of Business & Technology

Submitted To
Dr. Reza sadeghi

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Project Report of Online Shopping Management System

TEAM NAME: **TECH07**

Team Members

1. Arun Vennapureddy   vennapureddya@mail.sacredheart.edu

2. Sreekanth Ankala   Ankalas@mail.sacredheart.edu

3. Madireddy Sai Charan Reddy   madireddys@mail.sacredheart.edu

4. Sowmya Pippri   pippris@mail.sacredheart.edu

5. Prem chand Vemula   vemulap@mail.sacredheart.edu

6. Mounika Daggubati: daggubatim@mail.sacredheart.edu

Description of Team Members

1. Arun Vennapureddy:

I completed my bachelors in the major of Computer Science & Engineering, I'm aware of the basics of computer programming skills such as C, Java. I Chose this team as my team mates are very dedicated. I love reading E-books. I'm also interested in international relations and in advanced technology. I manage my time accordingly to team members schedule.

2. Sreekanth Ankala:

I completed my bachelors in the major of Computer Science & Engineering, I'm aware of basic computer programming skills such as C, C++, java. I'm also a fitness trainer. All the members in our team are coordinative and dedicated to the roles and responsibility given.

3. Madireddy Sai Charan Reddy:

I have completed my bachelors degree in the major of Electronics & Communication Engineering and I am familiar with the basic computer programming skills such as C and Java. I have chosen this team because the people in this team are much enthusiastic in doingthe work and also having good sense of humour as this is important to keep the group in lively atmosphere at tough phases. I am highly interested in playing games and listening to news get to know what is happening around the globe. I will contribute my maximum knowledge to my group.

4. Sowmya Pippri:

I have completed my Bachelors Of Computer Applications in 2018 and later on I have started working in TATA CONSULANCY SERVICES and having experience of 4 years.

I'm an optimistic, Straightforward, Flexible and responsible. I would like to mention my teammates who are so dedicated to the project work and there are with good communication skills, Technical Skills and Friendly Nature.

5. Prem Chand Vemula:

I am an optimistic, responsible and social person, I have done my bachelors in Electronics and Communication Engineering and also having an experience of 2.5 years in the field of IT sector as an Front-End Developer. I am having skills in the respective programming languages i.e. C, C++, Java & Python. I would like to mention my teammates are dedicated towards the work and having oral communication skills, excellent project management skills and strong ability to resolve the conflicts.

6. Mounika Daggubati:

I have done my bachelors in Electronics and communication engineering. I worked as a web developer in Leading it company for 5 years. My role is to cross check the client requirements in the back end. I'm very glad to work with this team, as every one in our team are very dedicated towards the work.

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PROJECT TITLE: Online Shop Management System

1.INTRODUCTION:

The purpose of an online shopping system is to keep track of the specifics of shopping, internet payments, bills, and customers. It keeps track of all information pertaining to shopping, products, and customer shopping. Because the project is entirely constructed on the administrative side, only the administrator has access. The goal of this project is to create an application software that will reduce the amount of manual work involved in handling shopping, the internet, products, and payments. It keeps track of all payment, bill, and customer information.The customer is able to do the online shopping very easily from any place by reading the details of the product and by seeing the product image. The manager or the admin is the only person who is able to add and remove the products from the site. The user can add a product or remove a product from the bag or cart, and he is the only person who is able to shop. The database stores all the information about the user and his shopping details and transactions in the site.

2.PROJECT OBJECTIVE:

The objective of the project is to make an application in android platform to purchase items in an existing   shop. In order to build such an application complete web support, need to be provided. A complete and efficient web application which can provide the online shopping experience is the basic objective of the project. The web application can be implemented in the form of an android application with web view.

3. PROJECT DESCRIPTION:

The central concept of the application is to allow the customer to shop virtually using the Internet and allow customers to buy the items and articles of their desire from the store. The information pertaining to the products are stores on an RDBMS at the server side (store).

The Server process the customers and the items are shipped to the address submitted by them. The application was designed into two modules first is for the customers who wish to buy the articles. Second is for the storekeepers who maintains and updates the information pertaining to the articles and those of the customers. The end user of this product is a departmental store where the application is hosted on the web and the administrator maintains the database. The application, which is deployed at the customer database, the details of the items are brought forward from the database for the customer view based on the selection through the menu and the database of all the products are updated at the end of each transaction. Data entry into the application can be done through various screens designed for various levels of users. Once the authorized personnel feed the relevant data into the system, several reports could be generated as per the security.

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4.Entity Relationship Modal
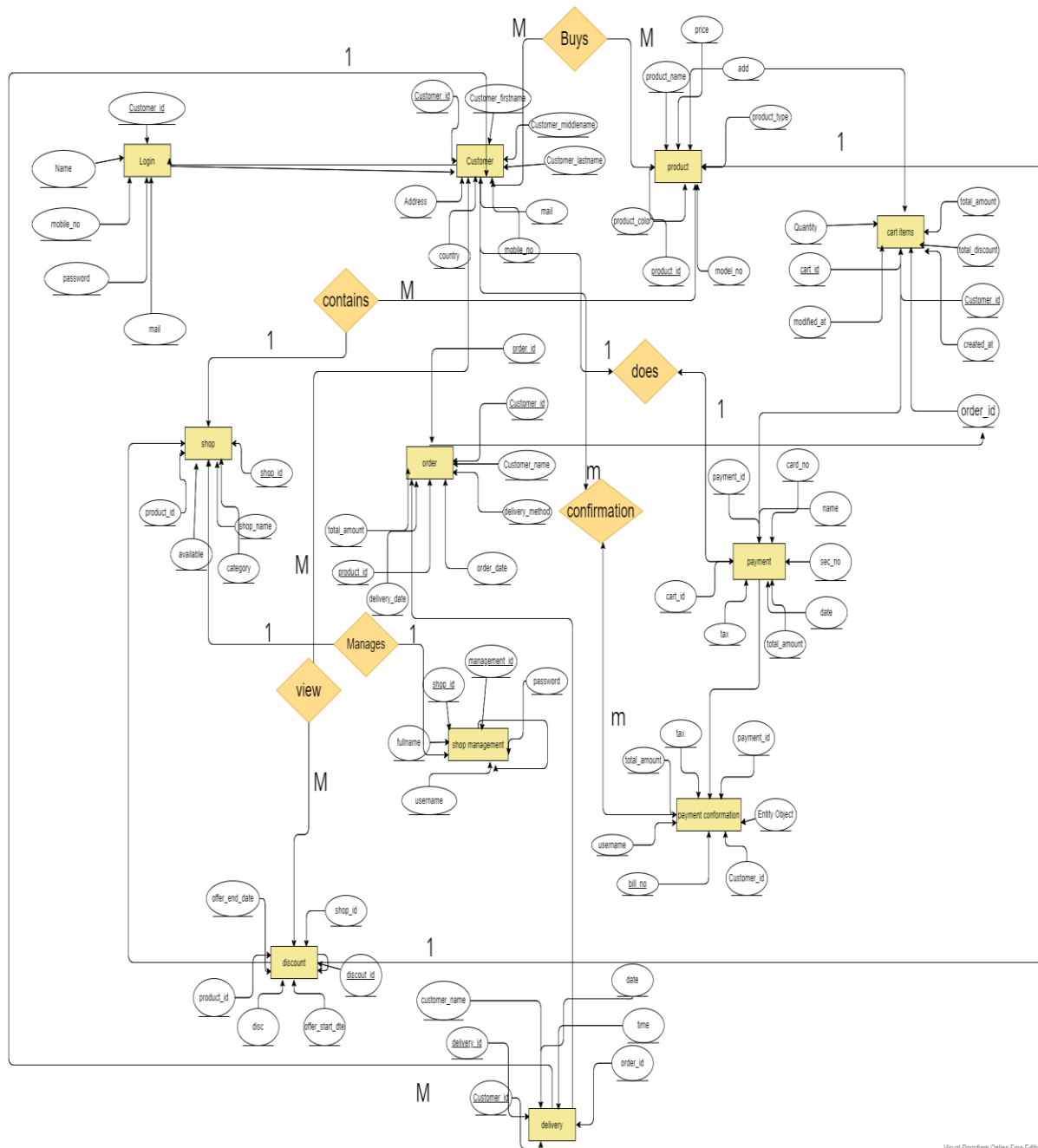
Fig1 : Entity Relationship Diagram

4.1 Description of Entity Relationship Model:

The Entity Relationship Diagram shows all the entities, which we referred as objects in real life. Each entity has its attributes which describes features of entities. In above figure3, we can see many entities and its attributes. Entities are connected through relationships.

4.2 Entities of Entity Relationship Diagram : We choose these entities because these are best to understand online shopping management model and easy to understand.

1)Login: Login describes about login features which is used to login.

   Attributes:

   a) username

   b) password

   c)mail

   d)mobile number

2) Customer: Customer entity describes abouts Customer details.

   Attributes:

   a)customer_id

   b)customer_fname

   c)customer_mname

   d)customer_lname

   e)mail

   f)mobile_no

   g)country

   h)address

3) Product : It describes about product features like name,id,color and given below.

   Attributes:

   a)product_id

   b)product_name

   c)model_no

   d)product_color

   e)price

   f)add

4) Order: Order entity describes about products added to order and which customer ordered that product.

   Attributes:

   a)order_id

   b) product_id

   c) customer_id

d) order_date

e) delivery_date

f) customer_name

g) total_amount

h) cart_id

5) Cart items: This entity has features like cart id , product id , customer id, etc.

Attributes:

a) Cart_id

b) Product_id

c) Customer_id

d) Total_amount

e) total_discount

f) Created_at

g) Modified_at

6) shop: Shop is a entity describes shop attributes such as

Attributes:

a) Shop_id

b) Shop_name

c) Product_name

d) Product_id

e) Category

f) Available

7)shop management : it has attributes as id,name,password.

Attributes:

a) management_id

b) name

c) password

d) shop_id

e) fullname

8)payment : it has attributes as id,type,date,etc.

Attributes:

a) payment_id

b) payment_type

c) card_no

d) date

e) time

f) secno

g) cart_id

h) customer_id

i) status

9) discount: it has id ,shop name, shop id

Attributes:

a) discount_id

b) shop_id

c) offer_startdate

d) offer_enddate

e) product_id

f) shop_id

10) payment confirmation: it has attributes such as id,customerid,name,tax,total amount

Attributes:

a) customer_id

b) payment_id

c) total_amount

d) tax

e) date

11) delivery: delivery entitys has attributes as customername,id,date

Attributes:

a) delivery_id

b) customer_id

c) product_id

d) customer_name

e) date
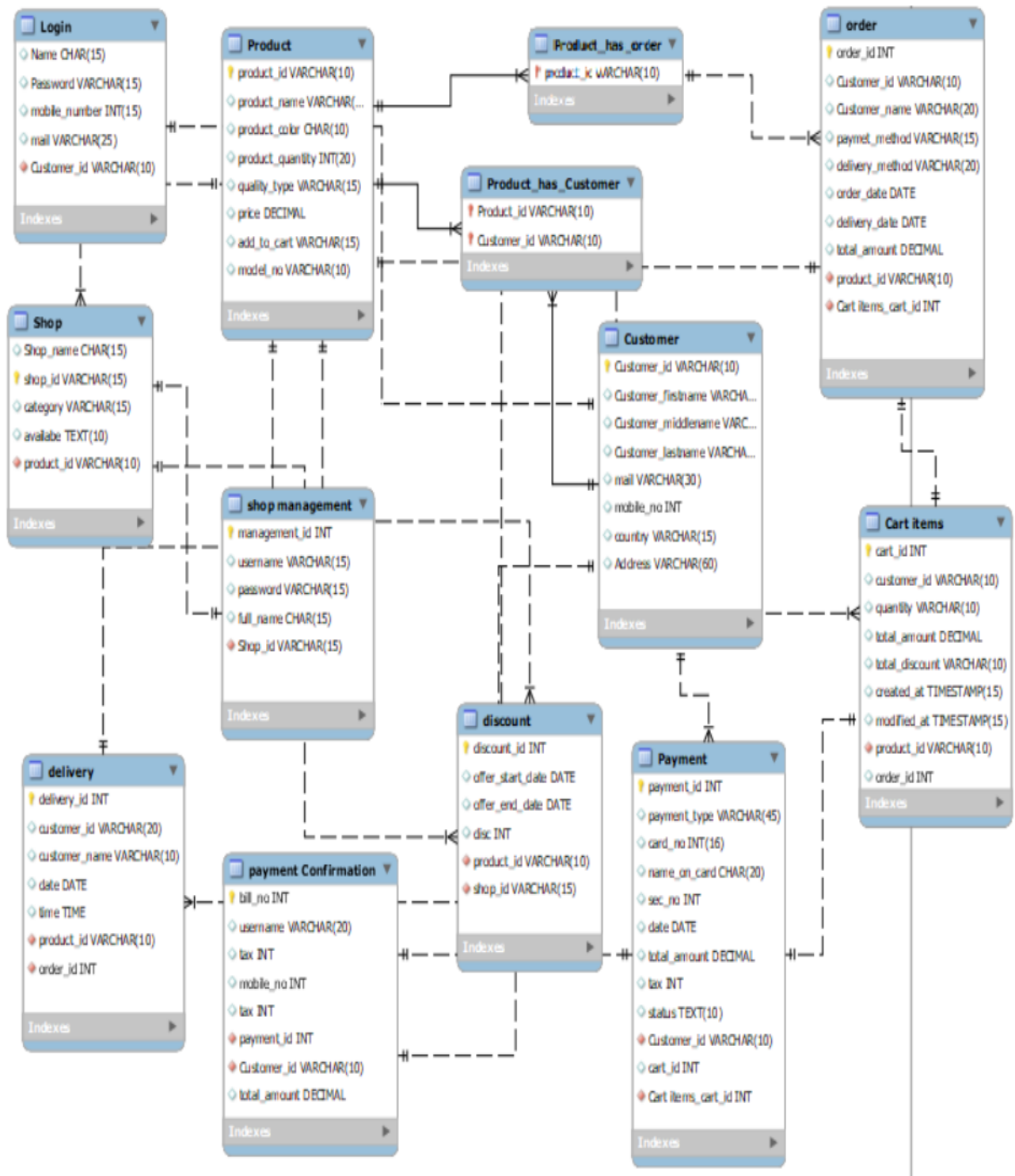
f) order_id

5.Enhanced Entity Relationship Modal

Fig 2: Enhanced Entity Relationship Diagram

5.1 Description of Enhanced Entity Relationship(EER) diagram:

Enhanced Entity Relationship diagram shows about Entities and its attributes and relationship between entities. The above Enhanced Entity Relationship diagram shows tables and their names(which is entity name) and their attributes. Relationship between entities represented as one to one, one to many , many to many relationships.

5.2 Primary key:

primary key is a column or group of columns that uniquely identifies

For example: In customer table , customer is entity name and customer_ id is primary key.

5.3 Relationships:

One to one :

Eg: relationship between Product and Discount entities are one-one relationship because each product has only one discount.

One to many:

Eg: Relationship between Customer and Payment has one to many relationship because one customer can pay many times.

Many to many:

Eg: Relationship between customer and product entities has many to many to relationship because many customers can order many products.

6.Business version of the Online Shop Management System:

6.1 Features:

Provides the searching facilities based on various factors. Transactionsare carried out in an off-line mode, so on-line data for shopping, payment, bills, and customer information cannot be captured or modified. . It tracks all the information of Internet, Products, Bills etc Manage the information of Internet Shows the information and description of the Shopping, Payment All the fields such as Shopping, Payment, Customer are validated and does not take invalid values It generates the report on Shopping, Internet, Products Provide filter reports on Payment, Bills, Customer . You can easily export PDF for the Shopping, Products, Bills Application also provides excel export for Internet, Payment Customer

6.2 Positive aspects:

Aside from being able to shop from the comfort of your home, or anywhere for that matter, there are many advantages of shopping online.
Avoiding parking issues, long lines, and avoiding crowds over the Christmas season are just a few of the benefits.

Additional benefits of online shopping include:

1.Ability to shop at any time, day or night

2.No long lines at checkout

3.Packages delivered to your doorstep, without leaving the house
 4.Reading reviews and comparing products prior to making a purchase

5.Given the opportunity to purchase refurbished, or like-new items

6.Convenience of shopping through an app with saved personal information, making checkout quicker

7.Receive discount and sale notifications that notifies you when it's the best time to shop.

8.Non promoted sales,Instead of completing the transaction, you can abandonyour cart at any time.

9.If you have abandoned your cart or saved an item for later, you may receive product reminder emails. These emails may also include a special offer or a discount code.

7. Description of database:

Online shopping database contains data about customers, products, orders, deliveries and payments. Database has tables to store the information about online shopping activities. The data can be modified in real time and modified.

7.1. SQL Code:

```
create database Tech;
use Tech;
```

➤ In above query ,created a database which is named as "Tech".

```
create table customer(
customer_id varchar(10) NOT NULL,
customer_fname varchar(15) NOT NULL,
customer_lname varchar(15) NOT NULL,
mail varchar(25) NOT NULL,
mobile int(10) NOT NULL,
country char(15) NOT NULL,
Address varchar(45) NOT NULL,
PRIMARY KEY (`customer_id`));
```

➤ In the above code , we created a table which named as "customer".customer_id is the primary key and its data type is varchar(10),10 gives ten bytes to enter. customer id which has both numners and letters and its limit is 10 values. And not null says that every attribute should not be empty. And here attribute mobile's datatype is int because all the value are numbers and its limit is 10 bytes. Country 's datatype is char because all the inputs are in alphabets..

```
insert INTO
customer(customer_id,customer_fname,customer_lname,mail,mobile,country,Address)
values(57896,'alex','robin','alex@gmail.com',8765432101,'USA','12 chapel st new
haven');
insert INTO
customer(customer_id,customer_fname,customer_lname,mail,mobile,country,Address)
values(32529,'max','peter','max@gmail.com',8546357642,'USA','13 wing st bridgeport');
insert INTO
customer(customer_id,customer_fname,customer_lname,mail,mobile,country,Address)
values(85289,'arun','reddy','arun@gmail.com',2104568243,'USA','14 chapel st new
haven');
insert INTO
customer(customer_id,customer_fname,customer_lname,mail,mobile,country,Address)
values(25332,'michal','jackson','jackson@gmail.com',4521789654,'USA','15 wing st
bridgeport');
insert INTO
customer(customer_id,customer_fname,customer_lname,mail,mobile,country,Address)
values(85287,'viay','Rao','vijay@gmail.com',7549632154,'USA','120 chapel st new
haven');
insert INTO
```

```
customer(customer_id,customer_fname,customer_lname,mail,mobile,country,Address)
values(25338,'harish','naidu','harish@gmail.com',5450012364,'USA','131 wing st
bridgeport');
```

➤ In the above query , added customer information to the table named "customer". By using " INSERT" command , we can insert input into a table. The inserted values can be seen in Table 1.

```
create table products(
product_id varchar(10) NOT NULL,
product_name varchar(15) NOT NULL,
product_color varchar(15) NOT NULL,
quality_type  varchar(5) NOT NULL,
price  decimal NOT NULL,
model_no int NOT NULL,
PRIMARY KEY (`product_id`));
```

➤ As shown in the above code ,we created a table which named as "product".and the primary key is product id, which has datatype as varchar and limit is 10 bytes ,and all the attributes are not null , and we given decimal datatype for price it's because price may or may not be in integer, decimal is accurate for prices.

```
insert into products(product_id, product_name, product_color, quality_type, price,
model_no) values(112,'mobile','blue',1,999,2546585);
insert into products(product_id, product_name, product_color, quality_type, price,
model_no) values(785,'bag','Red',1,400,694442);
insert into products(product_id, product_name, product_color, quality_type, price,
model_no) values(786,'ipad','Red',1,400,694442);
insert into products(product_id, product_name, product_color, quality_type, price,
model_no) values(562,'charger','white',1,39,415415);
insert into products(product_id, product_name, product_color, quality_type, price,
model_no) values(222,'T shirt','green',1,100,649795);
insert into products(product_id, product_name, product_color, quality_type, price,
model_no) values(8745,'pant','black',1,200,916494);
insert into products(product_id, product_name, product_color, quality_type, price,
model_no) values(652,'cap','black',1,20,9411645);
```

➤ In the above query , added product information to the table named "products". By using " INSERT" command , we can insert input values into a table.
Syntax: insert into table_name(attributes) values(inputs) as we followed above.

```
create table  orders (
order_id int NOT NULL,
customer_id varchar(10) NOT NULL,
product_id varchar(10) NOT NULL,
payment_method varchar(10) NOT NULL,
delivery_date  date NOT NULL,
```

```
order_date  date NOT NULL,
 total_amount  decimal NOT NULL,
 cart_id  varchar(10) NOT NULL,
 PRIMARY KEY (`order_id`));
```

➢ In the above query, we created a table which named as "orders".And the primary key is order_id which has a variable as integer because we given only integer values as id.10 is maximum bytes and here we have two foreign keys . those are customer id and product id. As seen Attributes delivery_date and order_date has "date" variable, for declaring dates here we are using date datatype.

```
insert into
orders(order_id,customer_id,product_id,payment_method,delivery_date,order_date,total
_amount,cart_id) values(7845888,57896,112,'debit card','1/1/2021','1/10/20',1000,44);
insert into
orders(order_id,customer_id,product_id,payment_method,delivery_date,order_date,total
_amount,cart_id) values(7845855,32529,785,'debit card','1/1/2021','1/10/20',400,45);
insert into
orders(order_id,customer_id,product_id,payment_method,delivery_date,order_date,total
_amount,cart_id) values(7845856,57896,786,'debit card','1/1/2021','1/10/20',300,46);
insert into
orders(order_id,customer_id,product_id,payment_method,delivery_date,order_date,total
_amount,cart_id) values(7845857,57529,562,'debit card','1/1/2021','1/8/20',100,47);
insert into
orders(order_id,customer_id,product_id,payment_method,delivery_date,order_date,total
_amount,cart_id) values(7845858,57896,652,'debit card','1/1/2021','1/26/20',200,48);
insert into
orders(order_id,customer_id,product_id,payment_method,delivery_date,order_date,total
_amount,cart_id) values(8785455,57896,652,'debit card','1/1/2021','1/22/20',200,48);
```

➢ In the above query ,we added order information to the table named "orders". By using " INSERT" command , we can insert input values into a table.
Syntax: insert into table_name(attributes) values(inputs) as we followed above.

```
create table shop(
shop_id varchar(110) NOT NULL,
shop_name varchar(15) NOT NULL,
category varchar(15) NOT NULL,
available  text(10) NOT NULL,
product_id  varchar(10) NOT NULL,
PRIMARY KEY (`shop_id`));
```

➢ As shown in above code ,we created a table which named as "shop". And primary key is shop_id which has a variable as varchar. Shop_name and category has varchar as datatype. For Attribute 'available' we have taken a datatype as text it's because it is only shows product is available or not available which is entered by employee. Product_id is foreign key, 10 bytes is maximum limit.

```
insert into shop(shop_id, shop_name, category, available, product_id)
values(1012,'maxxy','electronics','yes',112);
insert into shop(shop_id, shop_name, category, available, product_id)
values(1013,'wonderland','bags','yes',785);
insert into shop(shop_id, shop_name, category, available, product_id)
values(1014,'earth','furniture','yes',445);
insert into shop(shop_id, shop_name, category, available, product_id)
values(1015,'luck','watches','yes',530);
```

➢ In the above query ,we added shop information to the table named 'shop'.
By using " INSERT" command , we can insert input values into a table.
Syntax: insert into table_name(attributes) values(inputs) as we followed above.

```
create table shopManagement(
management_id varchar(10) NOT NULL,
username  varchar(10) NOT NULL,
password  varchar(15) NOT NULL,
fullname  varchar(15) NOT NULL,
shop_id  varchar(10) NOT NULL,
PRIMARY KEY (`management_id`));
```

➢ In the above query , We created a table which named as "shopManagement". And
primary key is management_id and it's datatype is varchar().10 is ten bytes is maximum
limit for management_id attribute. Username and password have varchar as datatype.
10 bytes are maximum limit for username and 15 bytes are the maximum limit for the
password. Here shop_id is foreign key and its datatype is varchar(10), here 10 is the
maximum byes.

```
insert into shopManagement(management_id, username, passwordd, fullname, shop_id)
values(16,'salmankhan','salman123','salman khan',1012);
insert into shopManagement(management_id, username, passwordd, fullname, shop_id)
values(13,'sharukh','sharukh123','sharukh khan',1013);
insert into shopManagement(management_id, username, passwordd, fullname, shop_id)
values(14,'babyshark','shark123','salman khan',1014);
insert into shopManagement(management_id, username, passwordd, fullname, shop_id)
values(15,'Aeron','Aeron123','Aeron Redd',1015);
```

➢ In the above query ,we added shop management information to the table named
"shopManagement". By using " INSERT" command , we can insert input values into a
table.
Syntax: insert into table_name(attributes) values(inputs) as we followed above.

```
create table Discounts (
discount_id varchar(10) NOT NULL,
offer_startdate  date NOT NULL,
offer_enddate  date NOT NULL,
product_id  varchar(10) NOT NULL,
shop_id  varchar(15) NOT NULL,
PRIMARY KEY (`discount_id`));
```

➢ In the above query , we created a table which named as "Discount". Primary key is discount_id and it's datatype is varchar(10), 10 is the maximum bytes. Offer_startdate and offer_enddate are attributes which have datatype as date, date datatype is very accurate for declaring date. Product_id and shop_id are the foreign keys .

```
insert into Discounts(discount_id, offer_startdate, offer_enddate,  disc, product_id,
shop_id) values(789,01/10/2022,01/30/2022,20 ,452,1012);
insert into Discounts(discount_id, offer_startdate, offer_enddate,  disc, product_id,
shop_id) values(788,01/10/2022,01/30/2022,30 ,452,1012);
insert into Discounts(discount_id, offer_startdate, offer_enddate,  disc, product_id,
shop_id) values(787,01/10/2022,01/30/2022,50 ,452,1012);
insert into Discounts(discount_id, offer_startdate, offer_enddate,  disc, product_id,
shop_id) values(786,01/10/2022,01/30/2022,10 ,452,1014);
```

➢ In the above query ,we given details about discount   to the table named "Discounts". By using " INSERT" command , we can insert input values into a table.
Syntax: insert into table_name(attributes) values(inputs) as we followed above.

```
create table login(
username char(15) NOT NULL,
login_password varchar(15) NOT NULL,
mobile int(10),
mail varchar(25) NOT NULL,
Customer_id varchar(10) NOT NULL);
```

➢ In the above query , created a table which named as "login". Username and login_password have a varchar datatype and 15 bytes is maximum limit to enter. Mobile have a int(10) datatype , that is because mobile number has only number and 10 bytes are maximum limit. Customer_id is foreign key and its datatype is varchar(10), 10 bytes are maximum limit to enter.

```
insert into login(username, login_password, mobile, mail, customer_id)
values('alex12hi','alexking',789658585,'alex@gmail.com',57896);
insert into login(username, login_password, mobile, mail, customer_id)
values('maxykun','maxxy223',789654545,'max@gmail.com',32529);
```

➢ In the above query ,we given login details   to the table named "login". By using "INSERT" command , we can insert input values into a table.

Syntax: insert into table_name(attributes) values(inputs) as we followed above.

```
create table payments(
payment_id varchar(15) NOT NULL,
payment_type varchar(25),
card_no int(16) NOT NULL,
name_on_card char(20) NOT NULL,
sec_no int(3) NOT NULL,
customer_id varchar(10));
```

➢ In the above query , created a table which named as "payment". Payment_id is primary key and it's datatype is varchar(15), 15 is maximum bytes for payment id. card_no is an attribute which has int as datatype because all the inputs should be only numbers and 16 is the maximum bytes to enter. Name_on_card attribute has char datatype. Sec_no attribute has int datatype and bytes limits is 3. Here customer_id is foreign key.

```
insert into payments(payment_id, payment_type, card_no, name_on_card, sec_no,
customer_id) values(123456789,'debit',4456885256544421,'alex peter',235,57896);
```

➢ In the above query ,we given payment details   to the table named "login". By using " INSERT" command , we can insert input values into a table.
Syntax: insert into table_name(attributes) values(inputs) as we followed above.

```
create table paymentConfirmation(
Bill_no varchar(10) NOT NULL,
customer_fname varchar(15) NOT NULL,
customer_id varchar(10) NOT NULL );
```

➢ In the above query , created a table which named as "paymentConfirmation". customer_fname and customer_id is foreign keys, which has datatype is varchar().

```
create table deliverys(
delivery_id int(10) NOT NULL,
customer_id varchar(10) NOT NULL,
customer_fname char(15) NOT NULL,
product_id varchar(15) NOT NULL,
order_id varchar(10) NOT NULL
);
```

➢ In the above query , created a table which named as "delivery". Delivery_id is primary key.customer_id , customer_fname, product_id , order_id are foreign keys.

7.2. Importing data: Here we are importing data manually by using 'insert' command as seen in below query.
insert into deliverys(delivery_id, customer_id, customer_name, product_id, order_id)
values(45615,57896,'alex peter',112,7845854);

> ➤ In the above query ,we given delivery details   to the table named "deliverys". By using " INSERT" command , we can insert input values into a table.
> Syntax: insert into table_name(attributes) values(inputs) as we followed above.

7.3 Manipulating Data: It means adding records to table and modifying records by using 'update, alter' command and output as seen in below table 3.

select * from customer;
Above query is specifies all the columns and rows from the table as show below.

customer_id	customer_fname	customer_lname	mail	mobile	country	Address
25332	michal	jackson	jackson@gmail.com	4521789654	USA	15 wing st bridgeport
25338	harish	naidu	harish@gmail.com	5450012364	USA	131 wing st bridgeport
32529	max	peter	max@gmail.com	8546357642	USA	13 wing st bridgeport
57896	alex	robin	alex@gmail.com	8765432101	USA	12 chapel st new haven
85287	viay	Rao	vijay@gmail.com	7549632154	USA	120 chapel st new haven
85289	arun	reddy	arun@gmail.com	2104568243	USA	14 chapel st new haven

Fig 3: Customer Table

alter table customer ADD gender varchar(10);

Above 'alter' command and query is used to modify the existing table by adding,renaming and modifying columns and constraints . we added 'gender' column to the customer table,as shown in below customer table 3.

Before performing alter command:

customer_id	customer_fname	customer_lname	mail	mobile	country	Address
25332	michal	jackson	jackson@gmail.com	4521789654	USA	15 wing st bridgeport
25338	harish	naidu	harish@gmail.com	5450012364	USA	131 wing st bridgeport
32529	max	peter	max@gmail.com	8546357642	USA	13 wing st bridgeport
57896	alex	robin	alex@gmail.com	8765432101	USA	12 chapel st new haven
85287	viay	Rao	vijay@gmail.com	7549632154	USA	120 chapel st new haven
85289	arun	reddy	arun@gmail.com	2104568243	USA	14 chapel st new haven

Fig 4: Customer Table (Before Alter)

After performing alter command:

customer_id	customer_fname	customer_lname	mail	mobile	country	Address	gender
25332	michal	jackson	jackson@gmail.com	4521789654	USA	15 wing st bridgeport	NULL
25338	harish	naidu	harish@gmail.com	5450012364	USA	131 wing st bridgeport	NULL
32529	max	peter	max@gmail.com	8546357642	USA	13 wing st bridgeport	NULL
57896	alex	robin	alex@gmail.com	8765432101	USA	12 chapel st new haven	NULL
85287	viay	Rao	vijay@gmail.com	7549632154	USA	120 chapel st new haven	NULL
85289	arun	reddy	arun@gmail.com	2104568243	USA	14 chapel st new haven	NULL

Fig 5: Customer Table (After Alter)

update customer set customer_fname='vinod',country='USA' where customer_id='85289';
update customer set customer_fname='Shiva',country='UK' where customer_id='85287';

update customer set gender='male' where customer_id='25332';
update customer set gender='male' where customer_id='25338';
update customer set gender='male' where customer_id='32529';
update customer set gender='male' where customer_id='57896';
update customer set gender='male' where customer_id='85287';

Above query which we used 'update' statement is used to modify existing records in a table and also used to add new records. We modified names of ' viajy and arun' as well ass added records to 'gender' column And used 'Where' command to locate particular record to modify, As shown in below table 5.

Before performing update command:

customer_id	customer_fname	customer_lname	mail	mobile	country	Address	gender
25332	michal	jackson	jackson@gmail.com	4521789654	USA	15 wing st bridgeport	NULL
25338	harish	naidu	harish@gmail.com	5450012364	USA	131 wing st bridgeport	NULL
32529	max	peter	max@gmail.com	8546357642	USA	13 wing st bridgeport	NULL
57896	alex	robin	alex@gmail.com	8765432101	USA	12 chapel st new haven	NULL
85287	viay	Rao	vijay@gmail.com	7549632154	USA	120 chapel st new haven	NULL
85289	arun	reddy	arun@gmail.com	2104568243	USA	14 chapel st new haven	NULL

Fig 6: Customer Table (Before Update)

After performing Update command:

customer_id	customer_fname	customer_lname	mail	mobile	country	Address	gender
25332	michal	jackson	jackson@gmail.com	4521789654	USA	15 wing st bridgeport	male
25338	harish	naidu	harish@gmail.com	5450012364	USA	131 wing st bridgeport	male
32529	max	peter	max@gmail.com	8546357642	USA	13 wing st bridgeport	male
57896	alex	robin	alex@gmail.com	8765432101	USA	12 chapel st new haven	male
85287	Shiva	Rao	vijay@gmail.com	7549632154	UK	120 chapel st new haven	male
85289	vinod	reddy	arun@gmail.com	2104568243	USA	14 chapel st new haven	NULL

Fig 7: Customer Table (After Update)

delete from customer where customer_id='85289';
delete from customer where customer_id='25332';

In above query, we used 'delete' command which is used to delete records from the customer table. By using delete command we deleted records(customer id's – 85289,25332) from the customer table As shown in below table 7.

Before performing delete command:

customer_id	customer_fname	customer_lname	mail	mobile	country	Address	gender
25332	michal	jackson	jackson@gmail.com	4521789654	USA	15 wing st bridgeport	NULL
25338	harish	naidu	harish@gmail.com	5450012364	USA	131 wing st bridgeport	NULL
32529	max	peter	max@gmail.com	8546357642	USA	13 wing st bridgeport	NULL
57896	alex	robin	alex@gmail.com	8765432101	USA	12 chapel st new haven	NULL
85287	viay	Rao	vijay@gmail.com	7549632154	USA	120 chapel st new haven	NULL
85289	arun	reddy	arun@gmail.com	2104568243	USA	14 chapel st new haven	NULL

Fig 8: Customer Table (Before delete)

After performing delete command:

customer_id	customer_fname	customer_lname	mail	mobile	country	Address	gender
25338	harish	naidu	harish@gmail.com	5450012364	USA	131 wing st bridgeport	male
32529	max	peter	max@gmail.com	8546357642	USA	13 wing st bridgeport	male
57896	alex	robin	alex@gmail.com	8765432101	USA	12 chapel st new haven	male
85287	Shiva	Rao	vijay@gmail.com	7549632154	UK	120 chapel st new haven	male

Fig 9: Customer Table (After delete)

7.4 Optimizing data:

Select orders.order_id, customer.customer_fname,customer.customer_lname
From orders
RIGHT JOIN customer
On orders.customer_id = customer.customer_id
ORDER BY orders.order_id;

Here , we are fetching order id, customer first name and customer last name from customer and orders tables. As seen in query customer id is common in both the tables(common column name is not mandatary but records in column should have to be same to fetch). We used 'right join' command to fetch , when using right join it means right side of the command is prioritized that's why it fetches all the records from customer table (customer table is right of right join) and null values are shown in table 10 that's because there is no records (customer id does not match) in orders table.

customer_id	customer_fname	customer_lname	mail	mobile	country	Address	gender
25338	harish	naidu	harish@gmail.com	5450012364	USA	131 wing st bridgeport	male
32529	max	peter	max@gmail.com	8546357642	USA	13 wing st bridgeport	male
57896	alex	robin	alex@gmail.com	8765432101	USA	12 chapel st new haven	male
85287	Shiva	Rao	vijay@gmail.com	7549632154	UK	120 chapel st new haven	male

Fig 10: Customer table

order_id	customer_id	product_id	payment_method	delivery_date	order_date	total_amount	cart_id
7845854	57896	112	debit card	01/01/2021	12/26/2020	1000	44
7845855	32529	785	debit card	1/1/2021	1/10/20	400	45
7845856	57896	786	debit card	1/1/2021	1/10/20	300	46
7845857	57529	562	debit card	1/1/2021	1/8/20	100	47
7845858	57896	652	debit card	1/1/2021	1/26/20	200	48
7845888	57896	112	debit card	1/1/2021	1/10/20	1000	44
8785455	57896	652	debit card	1/1/2021	1/22/20	200	48

Fig 11: Orders table

After using right join:

order_id	customer_fname	customer_lname
NULL	harish	naidu
NULL	Shiva	Rao
7845854	alex	robin
7845855	max	peter
7845856	alex	robin
7845858	alex	robin
7845888	alex	robin

Fig 12: Right join

Select orders.order_id, customer.customer_fname,customer.customer_lname
From orders
LEFT JOIN customer
On orders.customer_id = customer.customer_id
ORDER BY orders.order_id;

Here by using above query , we are fetching order id, customer first name and customer last name from customer and orders tables. As seen in query customer id is common in both the tables(common column name is not mandatary but records in column should have to be same to fetch). We used 'left join' command to fetch , when using left join it means left side of the command is prioritized that's why it fetches all the records from orders table (orders table is left side of left join command) and null values are shown in table 13 that's because there is

no records (customer id does not match) in customer table.

customer_id	customer_fname	customer_lname	mail	mobile	country	Address	gender
25338	harish	naidu	harish@gmail.com	5450012364	USA	131 wing st bridgeport	male
32529	max	peter	max@gmail.com	8546357642	USA	13 wing st bridgeport	male
57896	alex	robin	alex@gmail.com	8765432101	USA	12 chapel st new haven	male
85287	Shiva	Rao	vijay@gmail.com	7549632154	UK	120 chapel st new haven	male

Fig 13 : Customer table

order_id	customer_id	product_id	payment_method	delivery_date	order_date	total_amount	cart_id
7845854	57896	112	debit card	01/01/2021	12/26/2020	1000	44
7845855	32529	785	debit card	1/1/2021	1/10/20	400	45
7845856	57896	786	debit card	1/1/2021	1/10/20	300	46
7845857	57529	562	debit card	1/1/2021	1/8/20	100	47
7845858	57896	652	debit card	1/1/2021	1/26/20	200	48
7845888	57896	112	debit card	1/1/2021	1/10/20	1000	44
8785455	57896	652	debit card	1/1/2021	1/22/20	200	48

Fig 14: Orders table

After using left join:

order_id	customer_fname	customer_lname
7845854	alex	robin
7845855	max	peter
7845856	alex	robin
7845857	NULL	NULL
7845858	alex	robin
7845888	alex	robin
8785455	alex	robin

Fig 15: Left join

select * from customer where customer_id = '32529';

As seen in above query, we can print specific column from customer table by using select command. As shown in below table

customer_id	customer_fname	customer_lname	mail	mobile	country	Address	gender
32529	max	peter	max@gmail.com	8546357642	USA	13 wing st bridgeport	male

8.Graphical User Interface:

A Graphical User Interface (GUI) is a interface (computer program) that enables a person to communicate with electronic devices such as smartphones and laptops by using Graphical elements like icons, buttons, menus, symbols. And we created a Online shopping GUI which explained below.

8.1 Login page: Login page is web page which allows users by entering there username and password. Login page gives authentication to user if user enters correct username and password. In below fig (16) we can see that they are two types of logins 'Admin login , user login' ,both user and admin can directed to there respected pages by entering username and password.
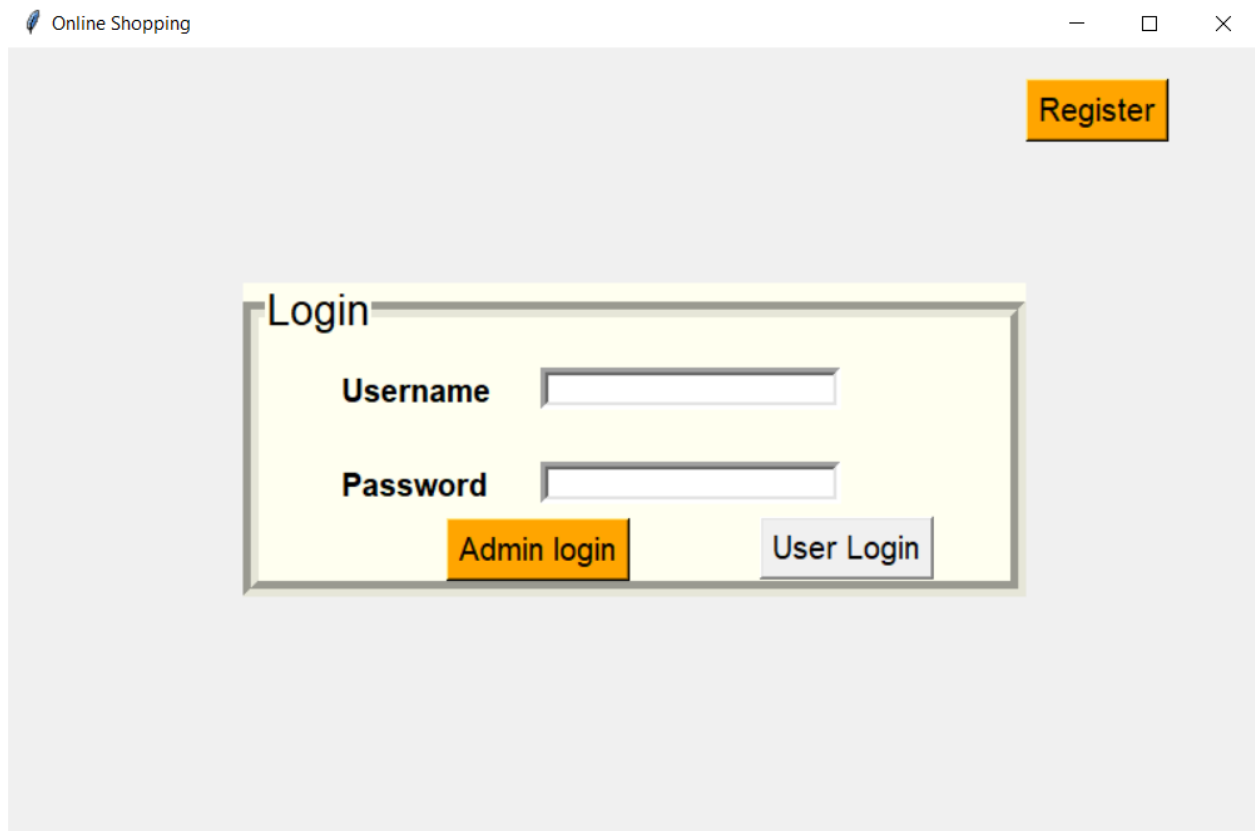
Fig 16: Login page

Here as seen below in fig 17, if user enters incorrect username or password ,GUI will denied access for security reasons.
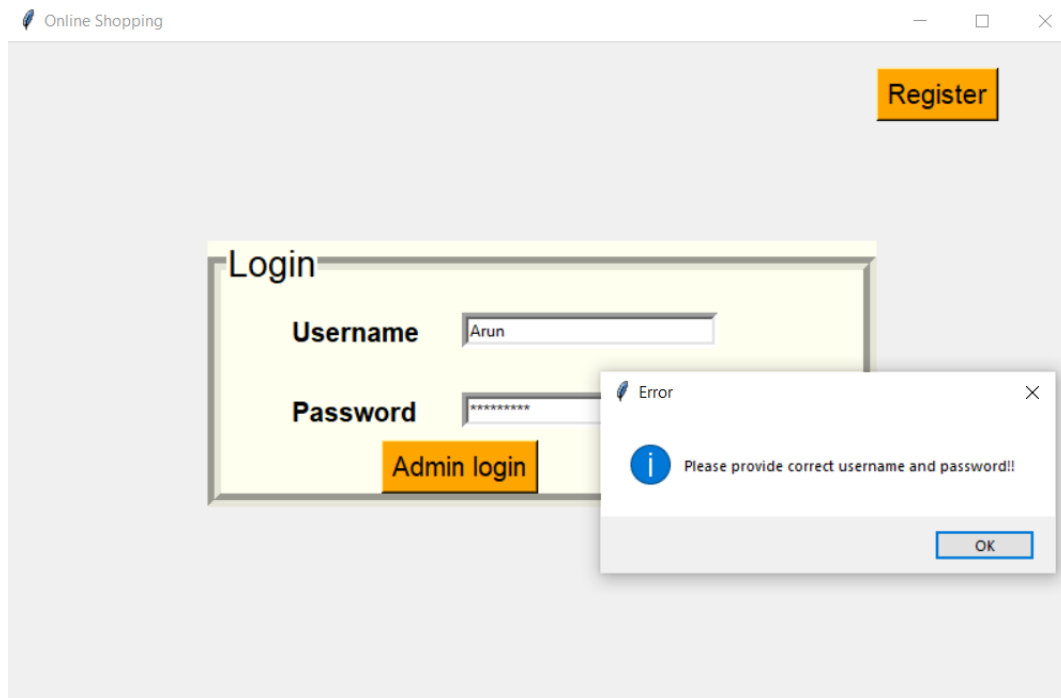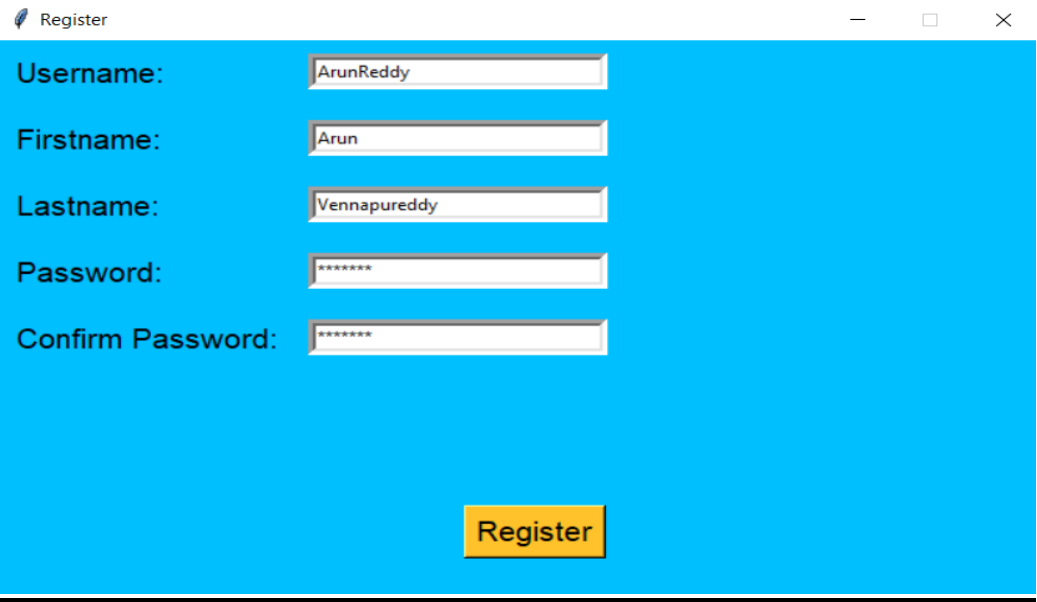
Fig 17: Login page(Denied)

8.2 Registration page: A user will added by registering through registration form which means filling his/her details which were asked in registration form as seen below in the fig(18). By registering ,a person can gain access to the application which provides online services.
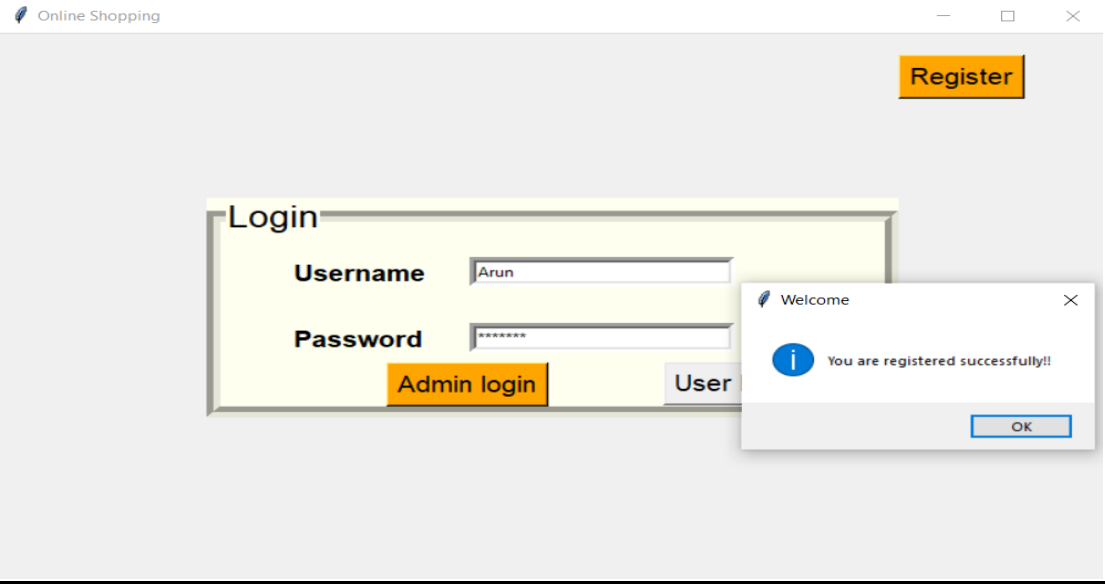
Fig 18: Registration page

Fig 19: Registration page (Entered Details)

As seen in the fig(20), we entered user details for registration and After registering we can login into application by entering correct username and password. We can clearly see that a user successfully registered which is seen In the below fig(19).

Fig 20: Registration successful popup

8.3 Menu page: Menu page is a type of widget , we can add buttons, icons, labels, listbox, etc. Here in the below fig(21) I have added some of the features for online shopping. And it is only accessed by admins ,they can add and remove product and make changes.
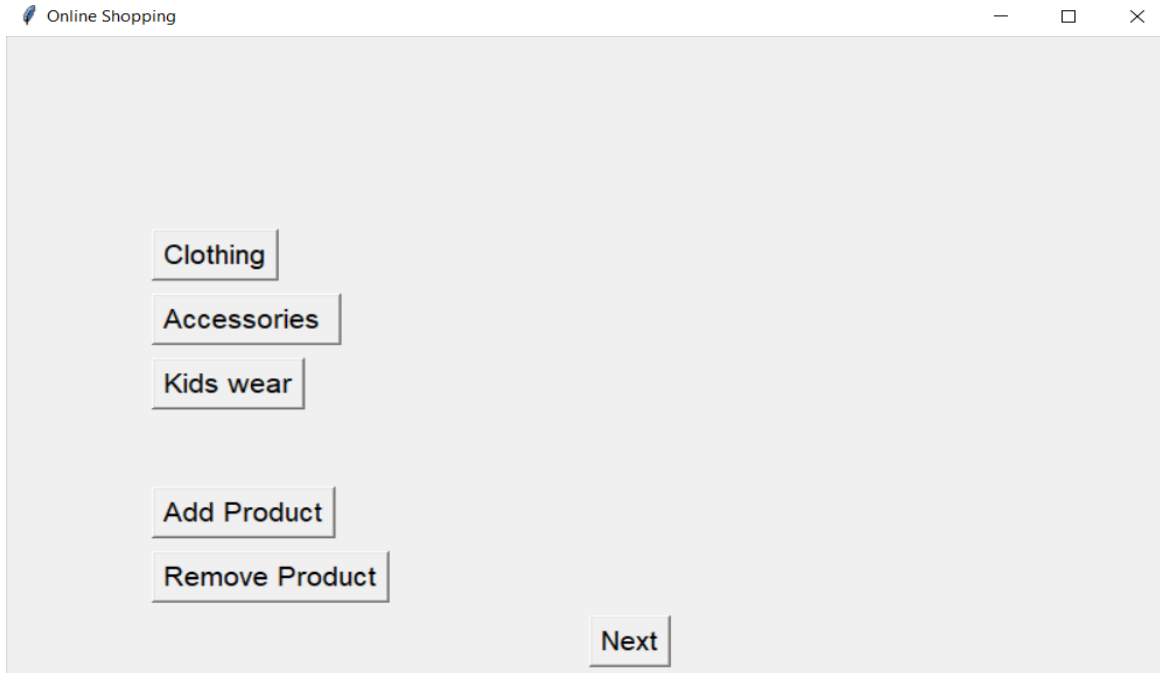
Fig 21 : Admin menu page
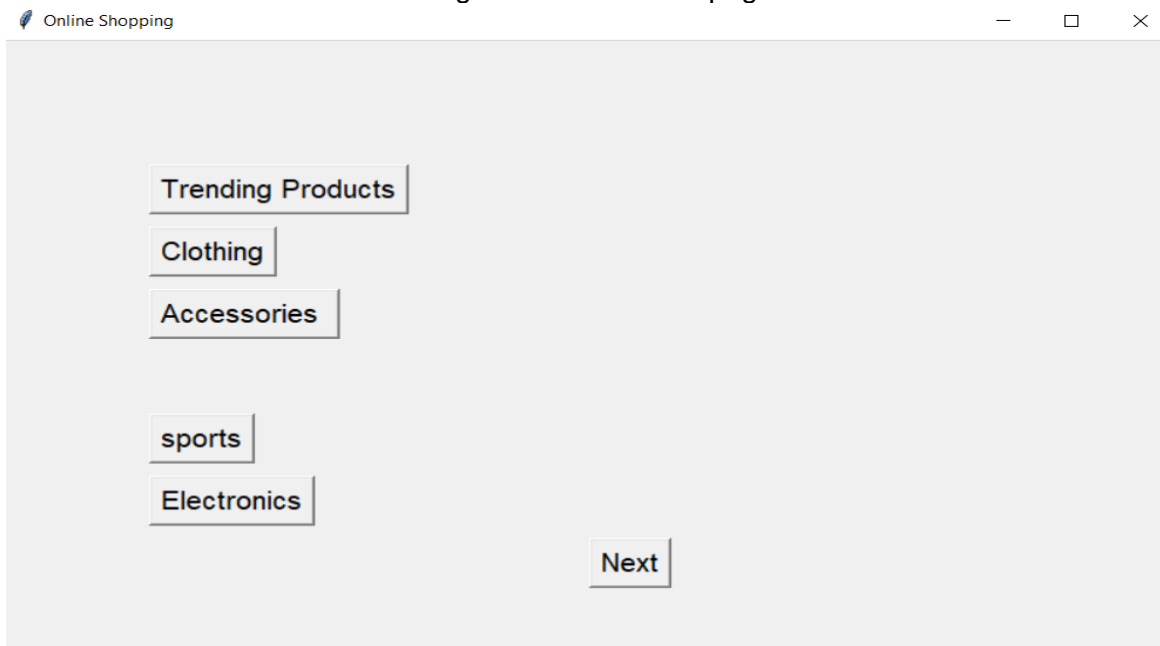
Fig 22: User menu page

As seen in above fig (22) , User menu page have different categories for online shopping , it is easy to find products in categories.

8.4 Action pages:

As seen in below Fig 23, After clicking clothing category ,we are re directing to clothing page to search for product.
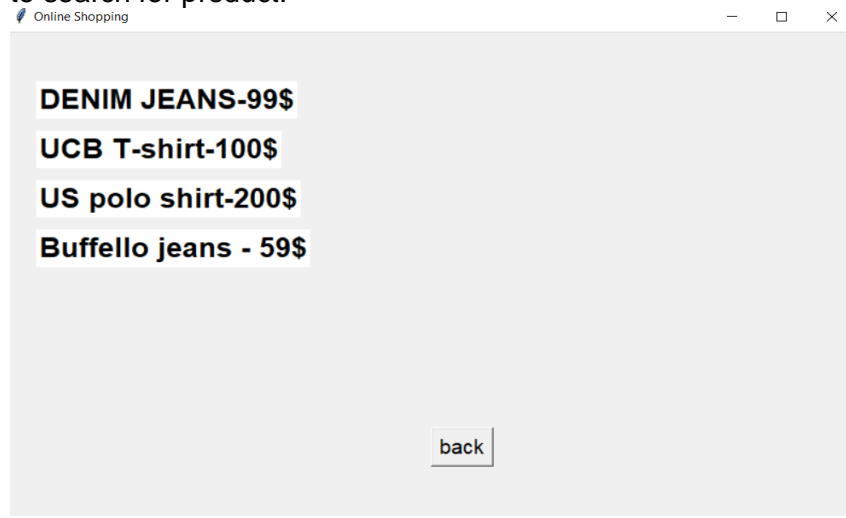
Fig 23 : Clothing page

As seen in below Fig 24, After clicking Trending category in users menu ,we are re directed to clothing page to search for trending product.
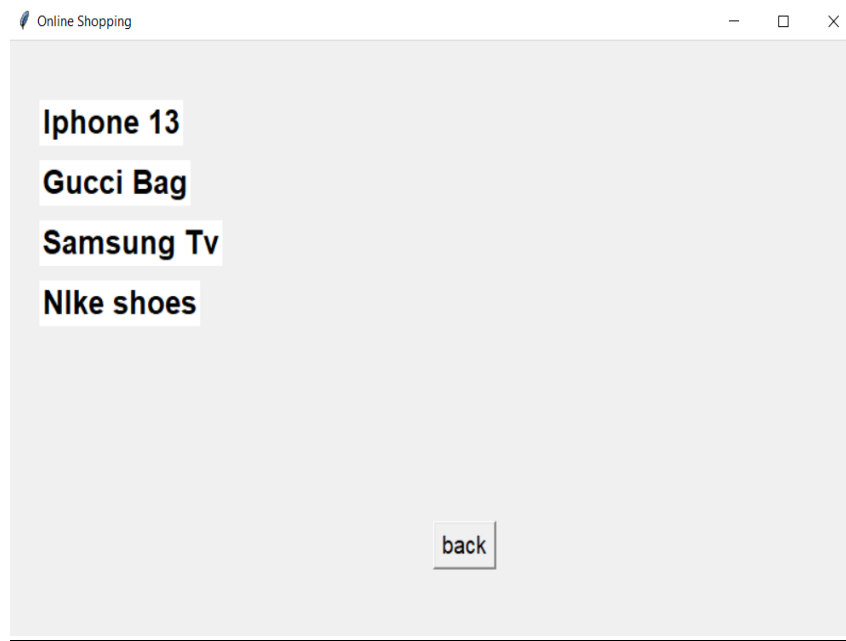

Fig 24: Trending category page

As seen in below Fig 25, After clicking Electronics category in users menu ,we are re directed to electronics page to search for trending product.
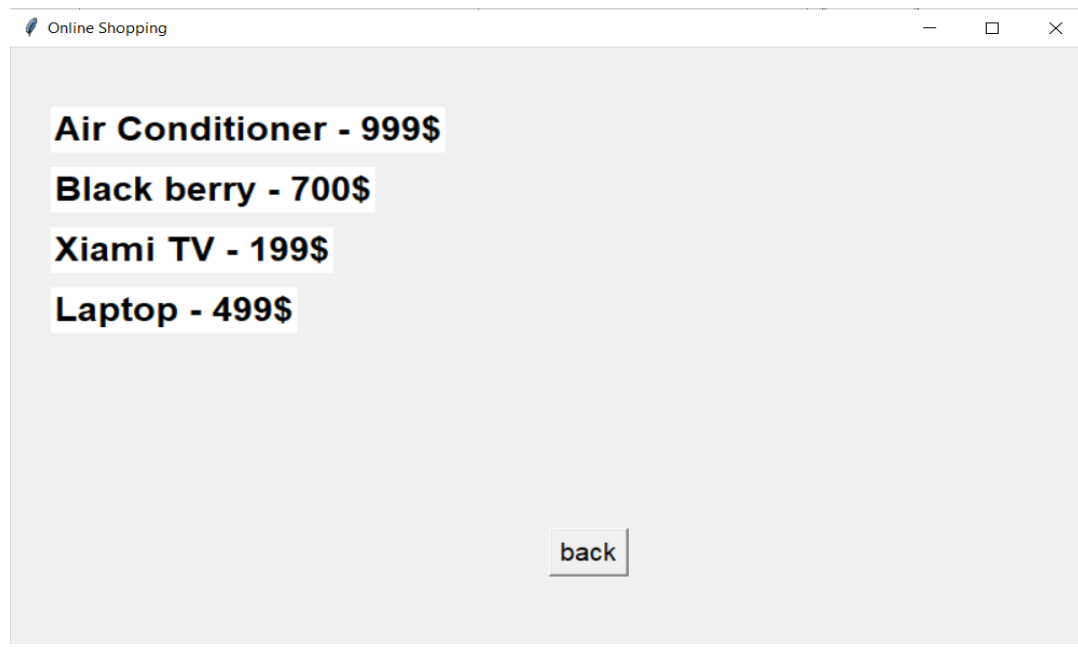

Fig 25: Electronics page

As seen in below Fig 26, After clicking Accessories category in users menu ,we are re directed to Accessories page to search for product.
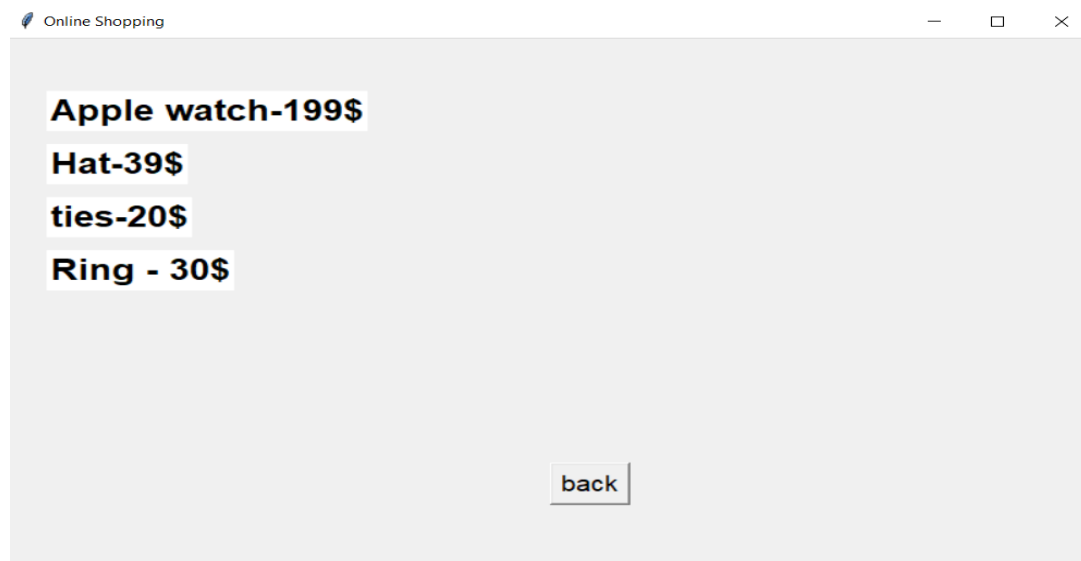

Fig 26: Accessories page

As seen in below Fig 27, After clicking sports category in users menu ,we are re directed to sports page to search for sports product.
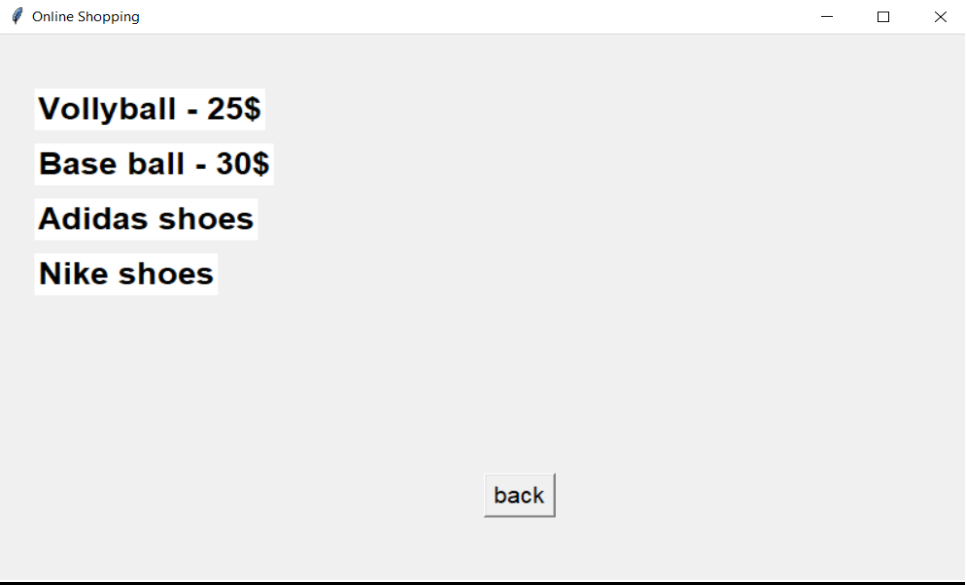

Fig 27: Sports category page

As seen in below Fig 28, After clicking logout button we are directed to home page(login page) we will get logged from GUI(Application).

Fig 28: logout page

9.GitHub Repository:

https://github.com/ArunVennapureddy/CS_603B_database

10.Reference website:

Designed ER(Entity Relationship) diagram with the help of using tools on this   website which is given below.

https://online.visual-paradigm.com