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**Course: Advance Database Management System.**

**Section: C**

E-COmmerce website

Database Model

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* **Part - A**

**Business and system summary**

E-commerce also known as Electronic commerce is the most useful business over the internet.it refers to buy and sell of good products on global scale. This project deals with an e-commerce website for online shopping system. The Online Shopping System is a web based application for an existing shop. The main thing of the Online Shopping System is to manage all the information about shopping, products and customers. It would help to easily searching, viewing and selection of a product in any shop through internet by using any web browser. Customer can get the services without going to the market. This system provides a cart to a customer and customer can add a product to the shopping cart. It is easily accessible and always available.

**Business overview**

Online Shopping System is a virtual store where the customers buy the product of interest. The Customers can search the details of products easily and select the product from different catalogue. The selected product may be collected in shopping cart. Customers can add a product to cart for purchase or delete a product from cart before selecting the final submission. After giving order, the product will deliver to the customer via Post office or currier services. Customer can also view products review and comment out their own review. A customer must have to be registered if they want to buy something. Every customer have a separate identity .Online shop has so many products. The products have to be identified as product type. Sometimes customer got commission by selling a fixed amount.Online Shopping System is not really much complicated.But sometimes the system can get much more complicated if it is not organized properly.

**Technical summary of super shop management system database**

The database system that prepared in this project can be accessed via a software program or a web-server based system using internet access or as an embedded data storage system. The database system and the project was made using Oracle SQL Express 10g, Microsoft Word. The interface connection for backend service was activated oracle 18c and node js.The database system is very simple in design and to implement. This system requires very low system resources and this system will work in almost all configurations.

**List of Entities of the model:**

* Admin
* Seller
* User
* Product
* Supply\_Order
* Order
* Promo
* Cart
* Category

**List of attributes of the model:**

* **Admin’s Attributes** :

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Attributes** | A\_id | A\_password | A\_address | A\_email | A\_mobile | U\_status |
| **Data Type** | number(5) | varchar2(15) | varchar2(30) | varchar2(30) | number(11) | varchar2(30) |

* **Seller’s Attributes:**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Attributes** | S\_id | S\_password | S\_address | S\_email | S\_mobile | U\_status |
| **Data Type** | number(5) | varchar2(30) | varchar2(30) | varchar2(30) | number(11) | varchar2(30) |

* **G\_user’s Attributes:**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Attributes** | G\_u\_id | Gu\_password | Gu\_address | Gu\_email | Gu\_mobile | u\_status |
| **Data Type** | number(5) | varchar2(15) | varchar2(30) | varchar2(30) | number(11) | varchar2(30) |

* **Product’s attributes :**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Attributes** | product\_id | product\_name | product\_price | product\_avlble | product\_sell\_price | product\_orginal \_price | Category\_id |
| **Data Type** | number(5) | varchar2(30) | varchar2(30) | varchar2(30) | number(5) | number(5) | number(5) |

* **Supply order attributes :**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Attributes** | Supply\_id | Supply\_date | Supply\_status | S\_id |
| **Data Type** | number(5) | number(10) | varchar2(30) | number(5) |

* **Cart’s attributes (updated):**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Attributes** | cart\_id | cart\_status | user\_id | Order\_id |
| **Data Type** | number(5) | varchar2(30) | number(5) | number(5) |

* **Order\_t attributes :**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Attributes** | order\_id | order\_date | payment\_method | payment\_status | return\_id |
| **Data Type** | number(5) | number(20) | varchar2(30) | varchar2(30) | number(5) |

* **Categories attributes :**

|  |  |  |
| --- | --- | --- |
| **Attributes** | Category\_id | Category\_name |
| **Data Type** | number(5) | varchar2(30) |

* **Promo\_use attributes :**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Attributes** | Promo\_id | user\_id | user\_use\_date | user\_use\_account |
| **Data Type** | number(5) | number(5) | number(22) | number(20) |

**List of constraints according to table:**

|  |  |  |
| --- | --- | --- |
| **Table Name** | **Constraint Name** | **Constraint Attribute** |
| G\_user | G\_user\_pk | g\_u\_id |
| Seller | Seller\_pk | S\_id |
| Admin | Admin\_pk | A\_id |
| Orders | Orders\_pk | Order\_ID |
| Products | Products\_pk | p\_ID |
| Supply\_order | supply\_order\_pk | supply\_id |
| cart | cart\_pk | cart\_id |
| Category | category\_pk | category\_id |
| promo | promo\_pk | promo\_id |

**SQL statement to create sample table and insert sample values:**

create table Admin

(

a\_id number(5),

a\_password varchar2(15),

a\_address varchar2(30) not null,

a\_email varchar2(30) unique,

a\_mobile number(11) not null,

u\_status varchar2(30) not null,

CONSTRAINT Admin\_pk PRIMARY KEY (a\_id)

);

insert into Admin values('11','12','sirajgonj','nishi@gmail.com','01111','valid');

insert into Admin values('12','12','sirajgonj','nish2@gmail.com','01111','valid');

insert into Admin values('13','12','sirajgonj','nish3@gmail.com','01111','valid');

insert into Admin values('14','12','sirajgonj','nish4@gmail.com','01111','valid');

insert into Admin values('15','12','sirajgonj','nish5@gmail.com','01111','valid');

create table Seller

(

s\_id number(5) ,

s\_password varchar2(30),

s\_address varchar2(30),

s\_email varchar2(30) unique,

s\_mobile number(11) unique,

u\_status varchar2(30) not null,

constraint Seller\_pk primary key(s\_id )

);

insert into Seller values('21','orange','tangail','jannat@gmail.com','019437438','valid');

insert into Seller values('22','orange','tangail','jannat2@gmail.com','0194374382','valid');

insert into Seller values('23','orange','tangail','jannat3@gmail.com','0194374383','valid');

insert into Seller values('24','orange','tangail','jannat4@gmail.com','0194374384','valid');

insert into Seller values('25','orange','tangail','jannat5@gmail.com','0194374385','valid');

create table G\_user

(

g\_u\_id number(5),

g\_u\_password varchar2(15),

g\_u\_address varchar2(30) not null,

g\_u\_email varchar2(30) unique,

g\_u\_mobile number(11) not null,

u\_status varchar2(30) not null,

constraint g\_user\_pk primary key(g\_u\_id )

);

insert into G\_user values('31','orange','tangail','jannat1@gmail.com','019437438','valid');

insert into G\_user values('32','orange','tangail','jannat2@gmail.com','019437438','valid');

insert into G\_user values('33','orange','tangail','jannat3@gmail.com','019437438','valid');

insert into G\_user values('34','orange','tangail','jannat4@gmail.com','019437438','valid');

insert into G\_user values('35','orange','tangail','jannat5@gmail.com','019437438','valid');

create table Seller\_name

(

s\_id number(5),

first\_name varchar2(30),

last\_name varchar2(30),

constraint s\_id\_fk foreign key(s\_id) references Seller(s\_id),

constraint seller\_name\_pk primary key (s\_id )

);

CREATE TABLE Admin\_name

( a\_id NUMBER(5),

first\_name varchar2(30),

last\_name varchar2(30),

CONSTRAINT a\_id\_fk FOREIGN KEY (a\_id)

REFERENCES Admin (a\_id),

constraint admin\_name\_pk primary key (a\_id )

);

CREATE TABLE G\_user\_name

( g\_u\_id NUMBER(5),

first\_name varchar2(30),

last\_name varchar2(30),

CONSTRAINT g\_u\_id\_fk FOREIGN KEY (g\_u\_id)

REFERENCES G\_user (g\_u\_id),

constraint g\_u\_name\_pk primary key (g\_u\_id )

);

create table Promo

(

promo\_id number(5),

promo\_desc varchar2(30),

Promo\_expiry date ,

promo\_percentage number(10),

promo\_status varchar2(20),

promo\_limit number(10),

promo\_use\_count number(10),

a\_id number(5),

CONSTRAINT Promo\_pk PRIMARY KEY (promo\_id),

CONSTRAINT a\_idi\_fk FOREIGN KEY (a\_id) REFERENCES Admin(a\_id)

);

insert into Promo values('1','pri',(TO\_DATE('2003/05/03 21:02:44', 'yyyy/mm/dd hh24:mi:ss')),50,'valid','limited',34,11);

insert into Promo values('2','pri',(TO\_DATE('2003/05/03 21:02:44', 'yyyy/mm/dd hh24:mi:ss')),50,'valid','limited',34,11);

insert into Promo values('3','pri',(TO\_DATE('2003/05/03 21:02:44', 'yyyy/mm/dd hh24:mi:ss')),50,'valid','limited',34,11);

insert into Promo values('4','pri',(TO\_DATE('2003/05/03 21:02:44', 'yyyy/mm/dd hh24:mi:ss')),50,'valid','limited',34,11);

insert into Promo values('5','pri',(TO\_DATE('2003/05/03 21:02:44', 'yyyy/mm/dd hh24:mi:ss')),50,'valid','limited',34,11);

create table Promo\_use

(

promo\_id number(5),

user\_id number(5),

user\_type varchar2(30),

user\_use\_date date,

user\_use\_count number(20),

CONSTRAINT promid\_fk FOREIGN KEY (promo\_id) REFERENCES Promo(promo\_id),

CONSTRAINT promid\_user\_fk FOREIGN KEY (user\_id) REFERENCES G\_user(g\_u\_id ),

CONSTRAINT Promo\_use\_pk PRIMARY KEY (user\_id , promo\_id)

);

insert into Promo\_use values('1','31','user',to\_date('09-02-19','dd-mm-yyyy'),'23');

insert into Promo\_use values('2','31','user',to\_date('09-02-19','dd-mm-yyyy'),'23');

insert into Promo\_use values('3','31','user',to\_date('09-02-19','dd-mm-yyyy'),'23');

insert into Promo\_use values('4','31','user',to\_date('09-02-19','dd-mm-yyyy'),'23');

insert into Promo\_use values('5','31','user',to\_date('09-02-19','dd-mm-yyyy'),'23');

create table Categories

(

category\_id number(5),

category\_name varchar2(30),

CONSTRAINT Categories\_pk PRIMARY KEY (category\_id)

);

insert into Categories values('1','first');

insert into Categories values('2','second');

insert into Categories values('3','first');

insert into Categories values('4','first');

insert into Categories values('5','first');

create table Products

(

product\_id number(5),

product\_name varchar2(30) ,

product\_price varchar2(30) ,

product\_avlble varchar2(30) ,

product\_sell\_price number(5) ,

product\_original\_price number(5) ,

category\_id number(5),

CONSTRAINT Products\_pk PRIMARY KEY (product\_id),

CONSTRAINT Products\_fk FOREIGN KEY (category\_id) REFERENCES Categories(category\_id)

);

ALTER TABLE Products

MODIFY product\_price number;

ALTER TABLE Products

MODIFY product\_avlble number;

insert into Products values(1,'soap',100,200, 100,80,1);

insert into Products values(2,'soap',100,200, 100,80,1);

insert into Products values(3,'soap',100,200, 100,80,1);

insert into Products values(4,'soap',100,200, 100,80,1);

insert into Products values(5,'soap',100,200, 100,80,1);

create table Order\_t

(

order\_id number(5),

order\_date date,

payment\_method varchar2(30),

payment\_status varchar2(30),

CONSTRAINT Order\_t\_pk PRIMARY KEY (order\_id)

)

insert into Order\_t values(1,to\_date('09-09-18','dd-mm-yyyy'),'cash','pending');

insert into Order\_t values(2,to\_date('09-09-18','dd-mm-yyyy'),'cash','pending');

insert into Order\_t values(3,to\_date('09-09-18','dd-mm-yyyy'),'cash','pending');

insert into Order\_t values(4,to\_date('09-09-18','dd-mm-yyyy'),'cash','pending');

insert into Order\_t values(5,to\_date('09-09-18','dd-mm-yyyy'),'cash','pending');

create table Cart

(

cart\_id number(5),

cart\_status varchar2(30) ,

g\_u\_id number(5),

order\_id number(5),

CONSTRAINT Cart\_pk PRIMARY KEY (cart\_id),

CONSTRAINT userid1\_fk FOREIGN KEY (g\_u\_id) REFERENCES G\_user(g\_u\_id),

CONSTRAINT orderid1\_fk FOREIGN KEY (order\_id) REFERENCES Order\_t(order\_id)

);

insert into Cart values(1,'cart',31 ,1);

insert into Cart values(2,'cart',31 ,1);

insert into Cart values(3,'cart',31 ,1);

insert into Cart values(4,'cart',31 ,1);

insert into Cart values(5,'cart',31 ,1);

create table P\_include\_cart

(

cart\_id number(5),

product\_id number(5) ,

product\_qntity number(5) ,

constraint P\_include\_cart\_pk primary key(cart\_id , product\_id),

CONSTRAINT cartid3\_fk FOREIGN KEY (cart\_id) REFERENCES Cart(cart\_id),

CONSTRAINT productid2\_fk FOREIGN KEY (product\_id) REFERENCES Products(product\_id)

);

ALTER TABLE P\_include\_cart

MODIFY product\_qntity number;

insert into P\_include\_cart values(1,1,1);

insert into P\_include\_cart values(2,1,1);

insert into P\_include\_cart values(3,1,1);

insert into P\_include\_cart values(4,1,1);

insert into P\_include\_cart values(5,1,1);

create table Supply\_order

(

supply\_id number(5),

supply\_date date ,

supply\_status varchar2(30),

s\_id number(5),

CONSTRAINT Supply\_order\_pk PRIMARY KEY (supply\_id),

CONSTRAINT sid3\_fk FOREIGN KEY (s\_id) REFERENCES Seller(s\_id)

);

insert into Supply\_order values(1,to\_date('09-06-18','dd-mm-yyyy'),'valid' , 21);

insert into Supply\_order values(2,to\_date('09-06-18','dd-mm-yyyy'),'valid' , 21);

insert into Supply\_order values(3,to\_date('09-06-18','dd-mm-yyyy'),'valid' , 21);

insert into Supply\_order values(4,to\_date('09-06-18','dd-mm-yyyy'),'valid' , 21);

insert into Supply\_order values(5,to\_date('09-06-18','dd-mm-yyyy'),'valid' , 21);

create table Supply\_contains

(

supply\_id number(5),

product\_id number(5),

product\_qntity varchar2(30) ,

CONSTRAINT supplyid1\_fk FOREIGN KEY (supply\_id) REFERENCES Supply\_order(supply\_id),

CONSTRAINT productid3\_fk FOREIGN KEY (product\_id) REFERENCES Products(product\_id),

CONSTRAINT Supply\_contains\_pk PRIMARY KEY (supply\_id , product\_id)

);

ALTER TABLE Supply\_contains

MODIFY product\_qntity number;

insert into Supply\_contains values(1,1,1);

insert into Supply\_contains values(2,1,1);

insert into Supply\_contains values(3,1,1);

insert into Supply\_contains values(4,1,1);

insert into Supply\_contains values(5,1,1);

create table review

(

review\_id number(5),

review\_text varchar2(30),

review\_status varchar2(30),

review\_date date ,

product\_id number(5),

CONSTRAINT review\_pk PRIMARY KEY (review\_id),

CONSTRAINT productid4\_fk FOREIGN KEY (product\_id) REFERENCES Products(product\_id)

);

insert into review values(1,'post','user',to\_date('09-05-18','dd-mm-yyyy'),1);

insert into review values(2,'post','user',to\_date('09-05-18','dd-mm-yyyy'),1);

insert into review values(3,'post','user',to\_date('09-05-18','dd-mm-yyyy'),1);

insert into review values(4,'post','user',to\_date('09-05-18','dd-mm-yyyy'),1);

insert into review values(5,'post','user',to\_date('09-05-18','dd-mm-yyyy'),1);

create table Give\_review

(

review\_id number(5),

user\_id number(5),

s\_id number(5),

CONSTRAINT Give\_review\_pk PRIMARY KEY (review\_id , user\_id , s\_id ),

CONSTRAINT review2\_fk FOREIGN KEY (review\_id) REFERENCES review(review\_id),

CONSTRAINT sid4\_fk FOREIGN KEY (s\_id) REFERENCES Seller(s\_id),

CONSTRAINT userid5\_fk FOREIGN KEY (user\_id) REFERENCES G\_user(g\_u\_id )

);

insert into Give\_review values(1,31,21);

insert into Give\_review values(2,31,21);

insert into Give\_review values(3,31,21);

insert into Give\_review values(4,31,21);

insert into Give\_review values(5,31,21);

Thus how the database system was created by following above pattern. The data types are shown in the table charts and all entities and attributes names as well. This database is following joining function of DBMS between the tables and the tables are linked with each other with the foreign keys. By these foreign keys these tables are connected with each other. In those tables any suitable and eligible type of data and especially appropriate data can be stored or modify.

**Identifying objective & describing the database working**

Our objective is to make a website for a company to start an E-Commerce business. The website will contain varities of products like electronics, garments , groceries etc. This website will have 3 types of users,

1. Consumer/Regular User/Visitor
2. Seller
3. Admin

In the website, all users can

1. registration
2. login
3. view and update their profile information.

Aditionally the general users will be able to do the following task:

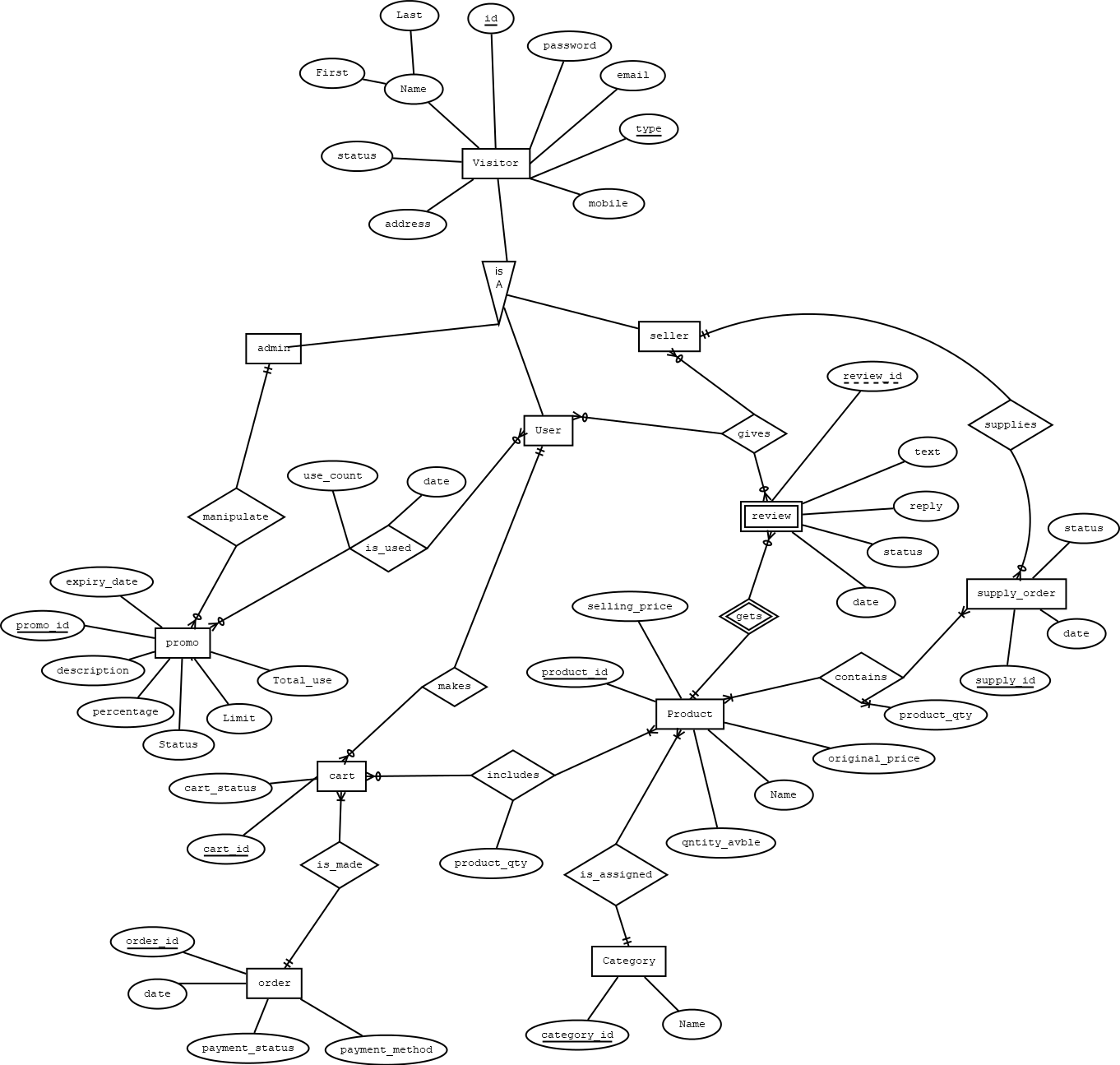
1. User can visit product from different product categories.
2. Choose Products to save into Wishlish and Cart
3. In future or instantly, they can buy it from the cart or wishlist.
4. User can pay immediately using different payment method
5. Instead of paying instantly they can choose to pay cash on delivery
6. After making an order , user can show order list and check current status of an order.
7. If there is any problem in product, user can request for return.
8. User can contact customer service using a message box.

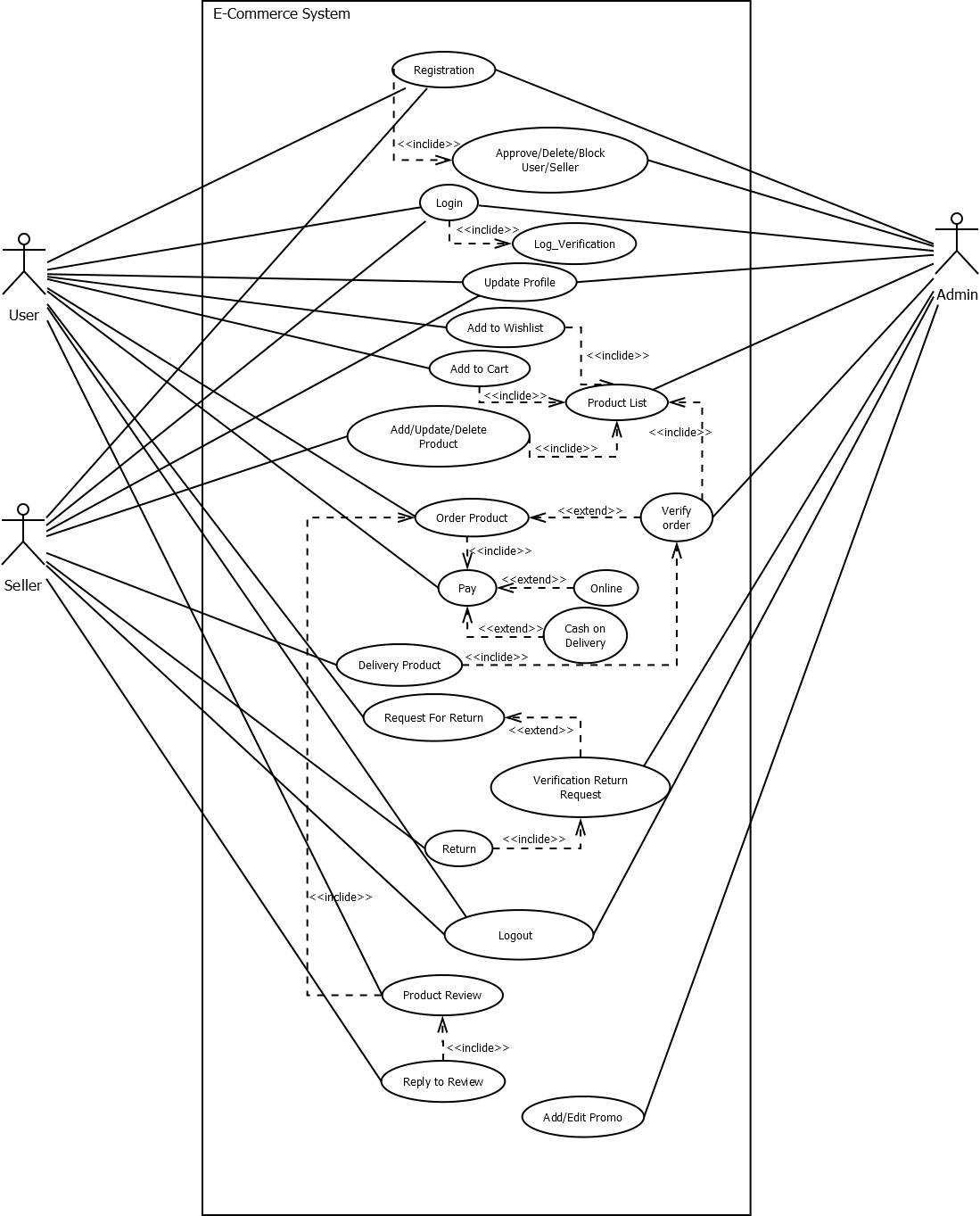
Admin will have the following unique functionality:

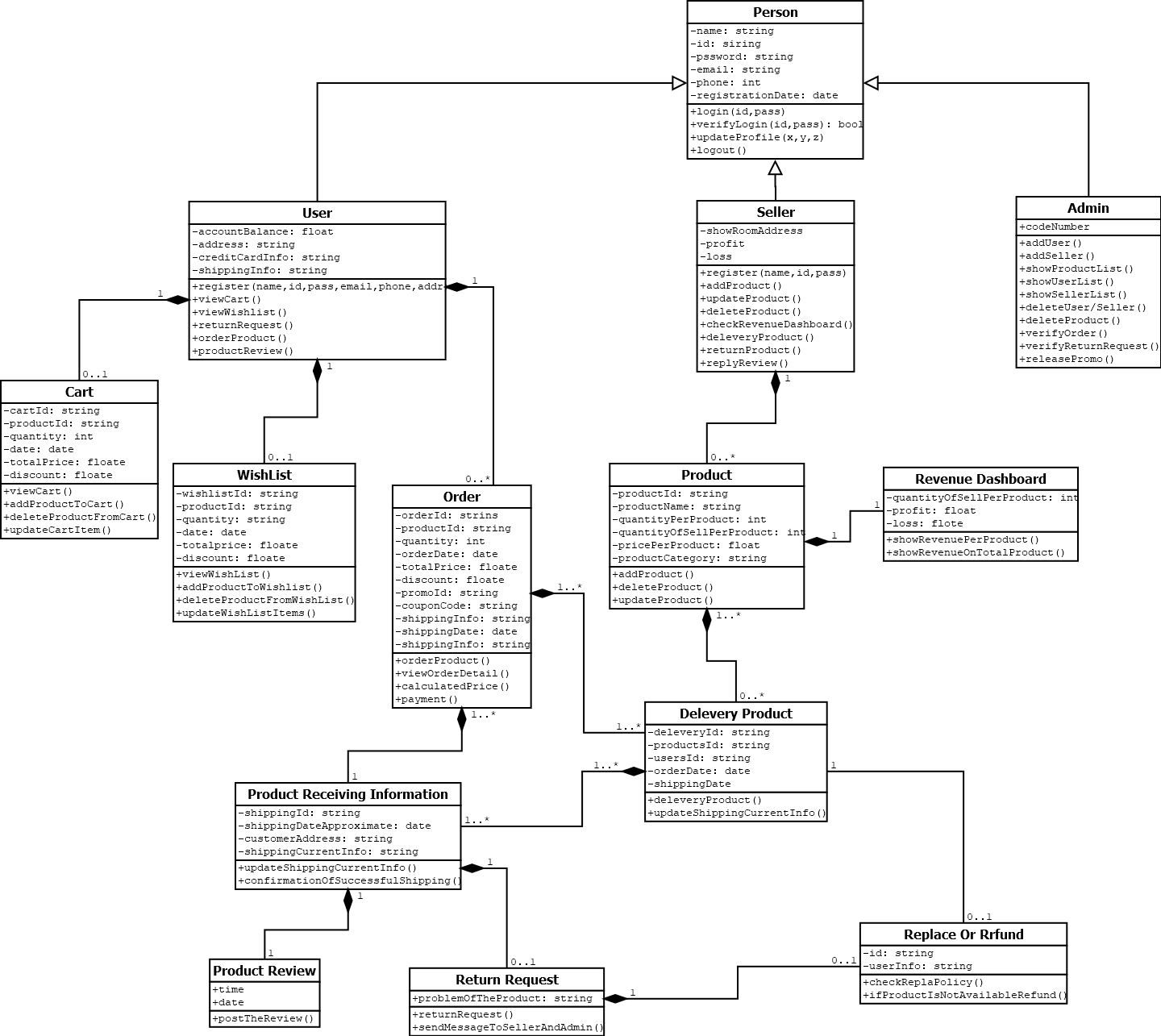
1. Can create, delete/block, aprrove user/seller/admin
2. Manipulate product (approve/reject/update)
3. Add/Update promocode
4. Reply to the query from other user
5. Can manipulate the order info/status
6. Can approve/reject/remove the review of product

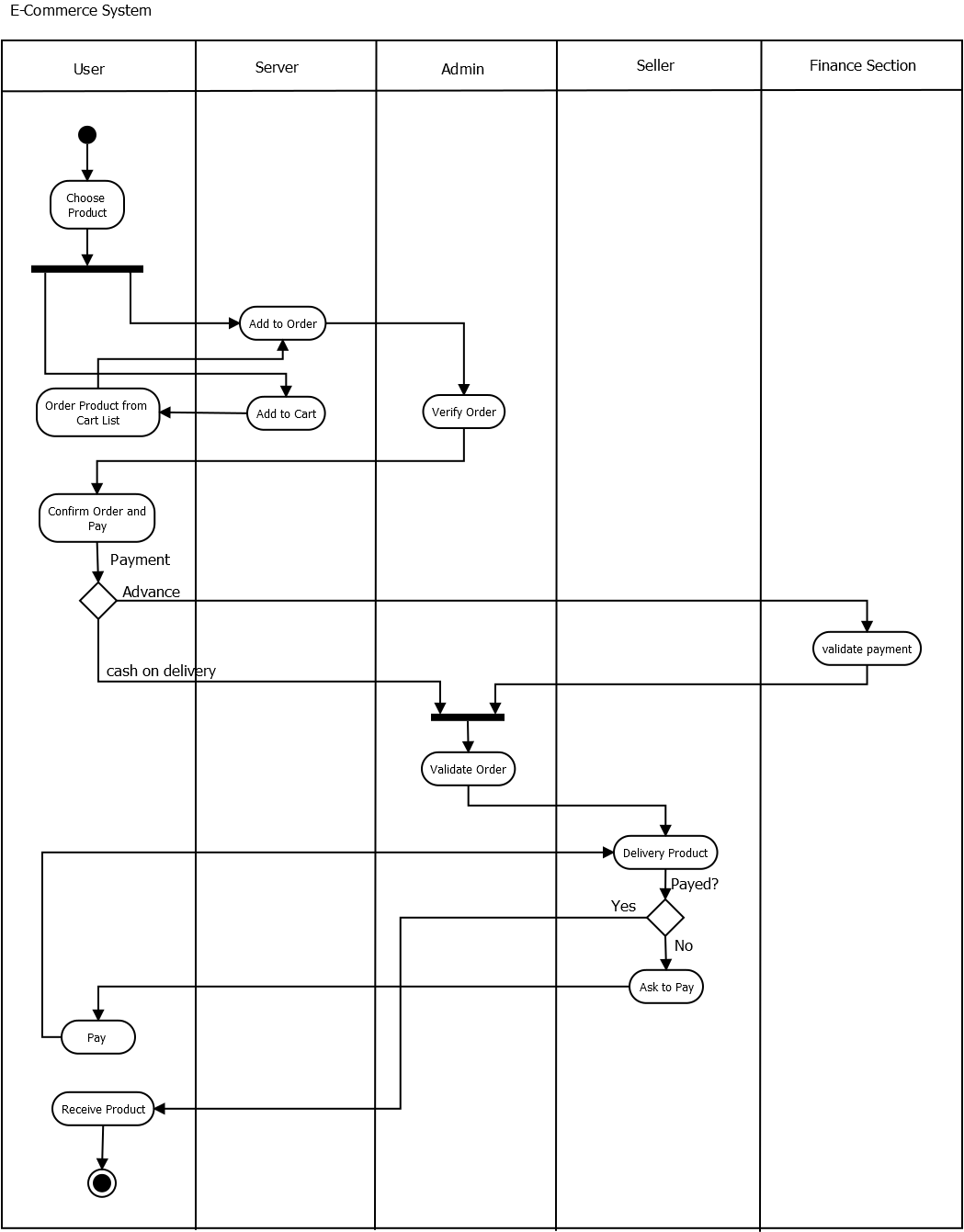
Seller can enjoy the following additonal features:

1. Can request to add a product
2. Update the stock of a product
3. Can aprrove a product request from admin/user
4. Send message to the admin
5. Check revenue dashboard
6. Check product order status
7. Can reply to review or answer questions

**Entity – Relationship diagram (ER Diagram)**

**Use Case Diagram**

**Class Diagram**

**Activity Diagram**

**Normalization (upto 3NF)**

1. Admin:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| a\_id | a\_password | a\_address | a\_email | a\_mobile | u\_status |

1. Seller:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| s\_id | s\_password | s\_address | s\_email | s\_mobile | u\_status |

1. G\_user:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| g\_u\_id | g\_u\_password | g\_u\_address | g\_u\_email | g\_u\_mobile | u\_status |

1. Multivalued attribute for admin:

Seller\_name

|  |  |  |
| --- | --- | --- |
| s\_id | first\_name | last\_name |

1. Multivalued attribute for seller:

Admin\_name

|  |  |  |
| --- | --- | --- |
| a\_id | first\_name | last\_name |

1. Multivalued attribute for g\_user:

G\_user\_name

|  |  |  |
| --- | --- | --- |
| g\_u\_id | first\_name | last\_name |

1. Promo:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| promo\_id | promo\_desc | Promo\_expiry | promo\_percentage | promo\_status |
| promo\_limit | promot\_use\_count | a\_id |

1. Promo\_use:

|  |  |  |  |
| --- | --- | --- | --- |
| promo\_id | user\_id | user\_use\_date | user\_use\_count |

1. P\_include\_cart:

|  |  |  |
| --- | --- | --- |
| cart\_id | product\_id | product\_qntity |

1. Cart:

|  |  |  |  |
| --- | --- | --- | --- |
| cart\_id | cart\_status | user\_id | order\_id |

1. Order\_t:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| order\_id | order\_date | payment\_method | payment\_status | return\_id |

1. Products:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| product\_id | product\_name | product\_price | product\_avlble | product\_sell\_price | product\_original\_price |
| category\_id |

1. Categories:

|  |  |
| --- | --- |
| category\_id | category\_name |

1. Supply\_order:

|  |  |  |  |
| --- | --- | --- | --- |
| supply\_id | supply\_date | supply\_status | s\_id |

1. Supply\_contains:

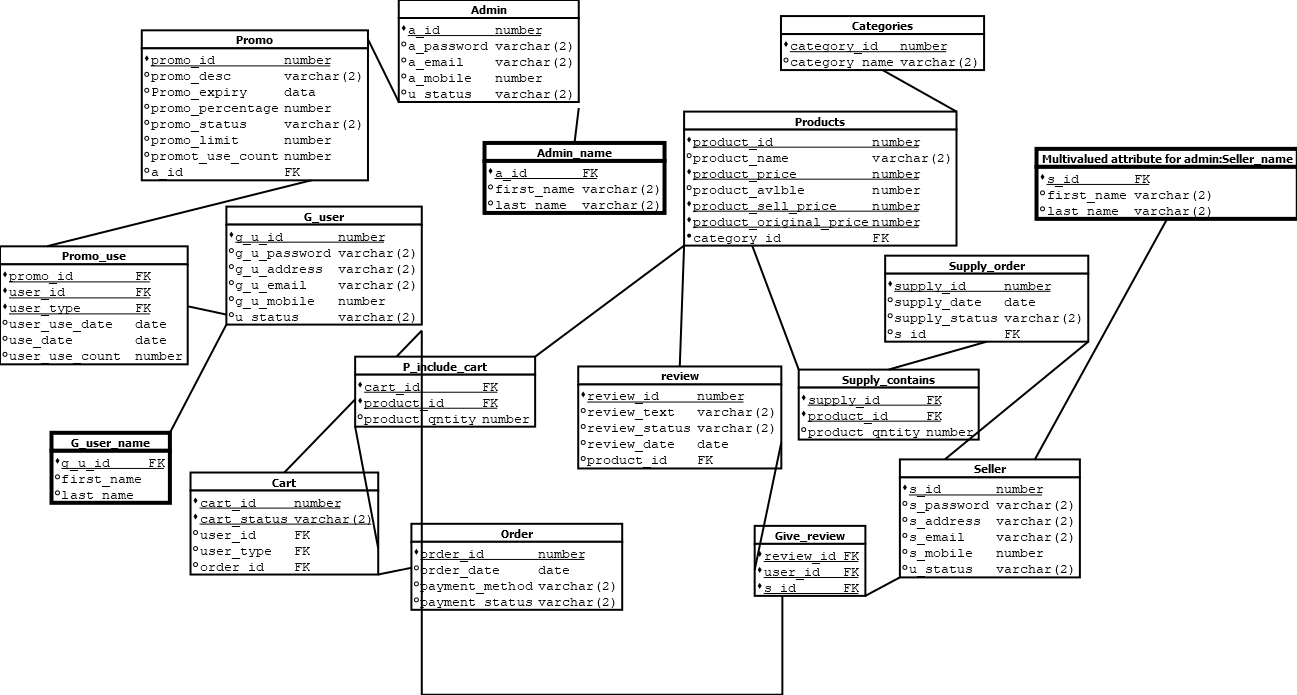
|  |  |  |
| --- | --- | --- |
| supply\_id | product\_id | product\_qntity |

1. review:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| review\_id | review\_text | review\_status | review\_date | product\_id |

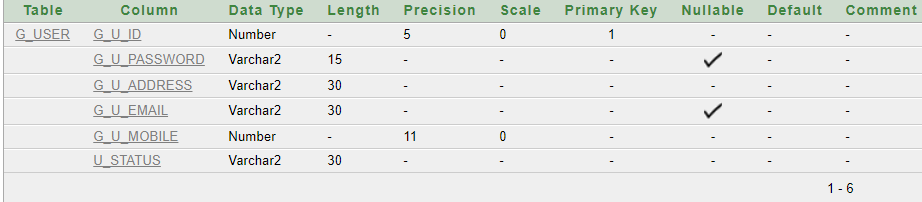
1. Give\_review:

|  |  |  |
| --- | --- | --- |
| review\_id | user\_id | s\_id |

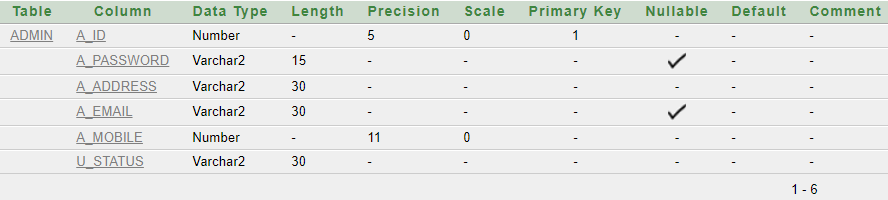
**Relationship diagram (Schema Diagram)**

**Screenshots of the table with only data type of the attributes**

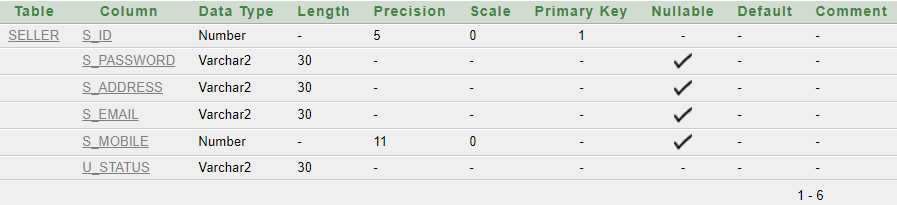
**G\_user:**



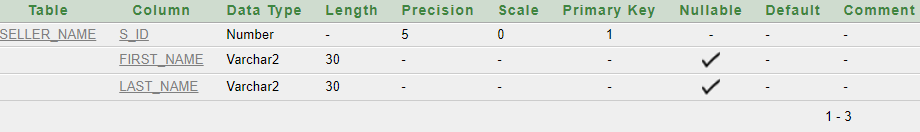
**Admin:**



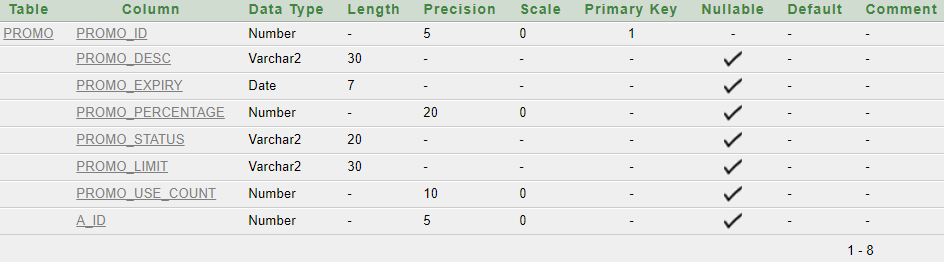
**Seller:**



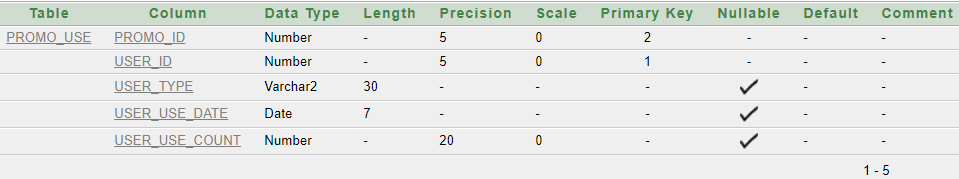
**Seller\_name:**



**Promo:**



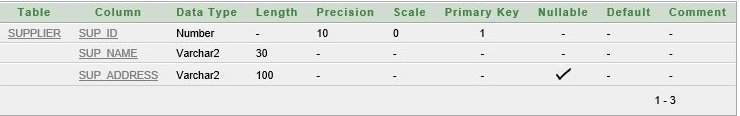
**Promo\_use:**



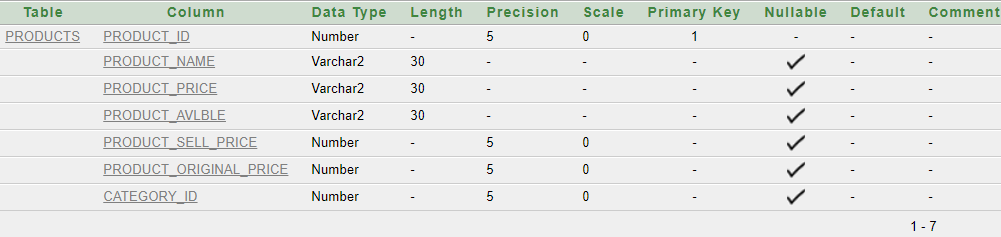
**Categories:**



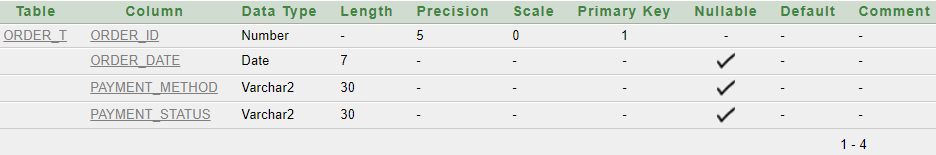
**Supplier:**



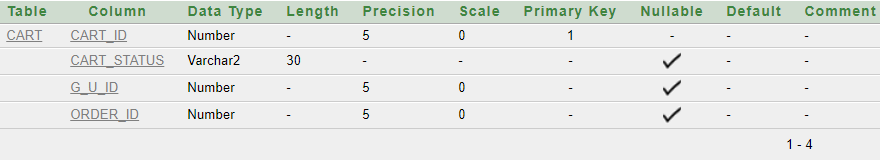
**Products:**



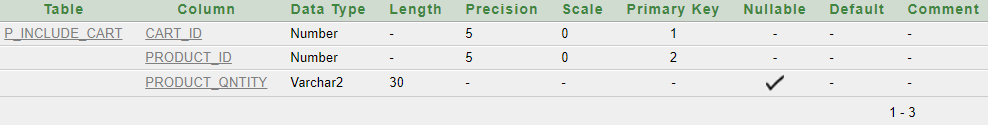
**Order\_t:**



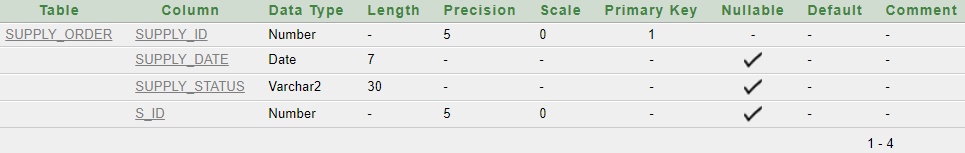
**Cart:**



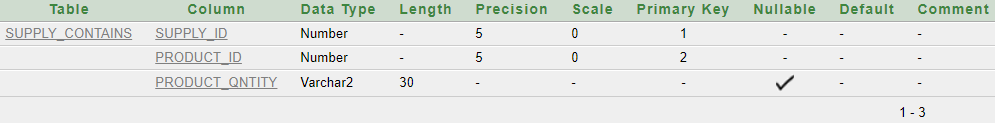
**P\_include\_cart:**



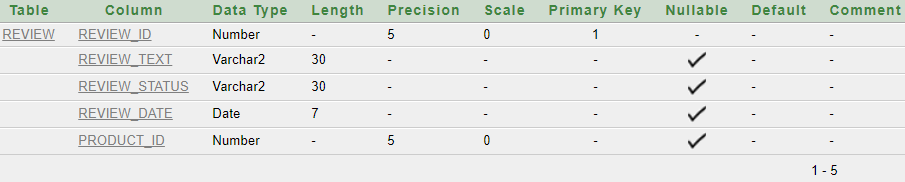
**Supply\_order:**



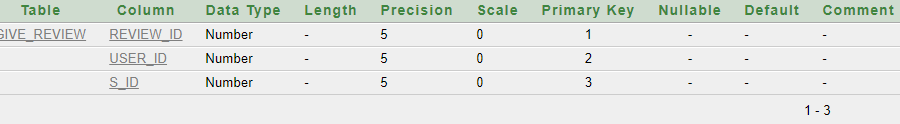
**Supply\_contains:**



**Review:**

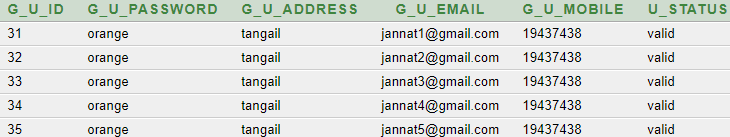


**Give\_review:**

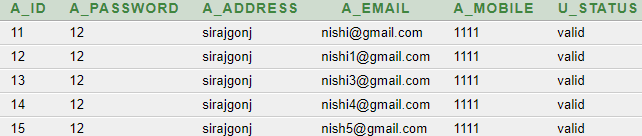


**Screenshot of the tables with sample data records**

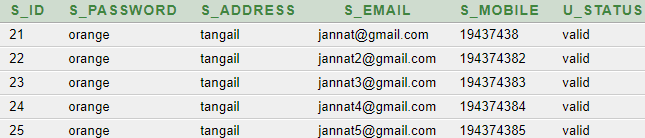
**G\_user:**



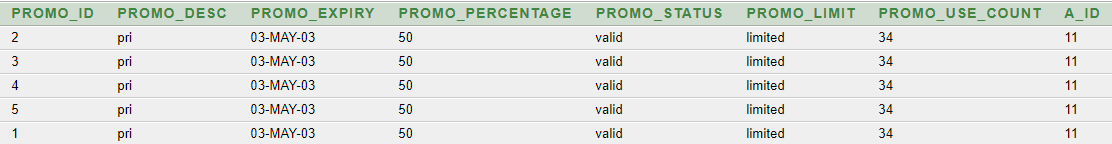
**Admin:**



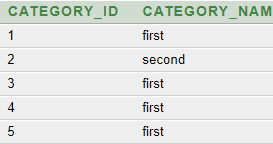
**Seller:**



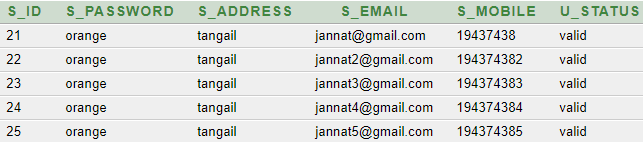
**Promo:**



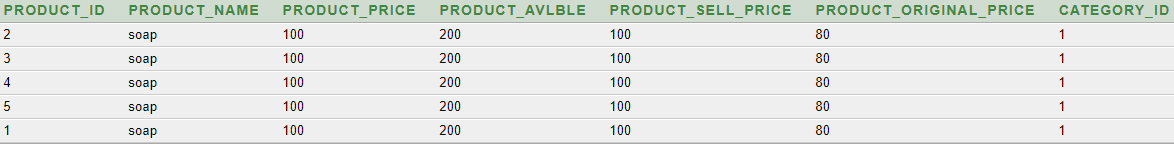
**Categories:**



**seller:**



**Products:**



**Order\_t:**



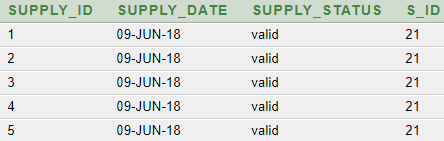
**Cart:**



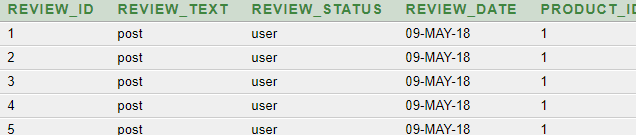
**P\_include\_cart:**



**Supply\_order:**



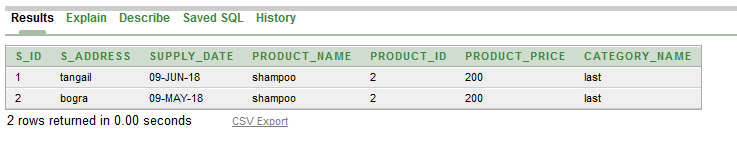
**Review:**



**Demonstrating some database use scenarios and SQL queries**

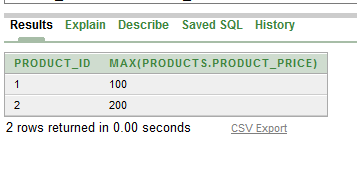
1. Find out seller info,prduct\_id,product\_price,category who sells shampoo

select Seller.s\_id,Seller.s\_address,Supply\_order.supply\_date,products.product\_name,product\_id,products.product\_price,categories.category\_name from Seller,Supply\_order,products,categories where products.category\_id=categories.category\_id and Seller.s\_id=Supply\_order.s\_id and product\_name='shampoo'



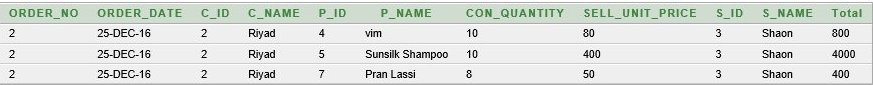
1. Display Maximum selling product product\_price group by Product id

select products.product\_id,max(products.product\_price) from products,supply\_contains where products.product\_id=supply\_contains.product\_id group by products.product\_id



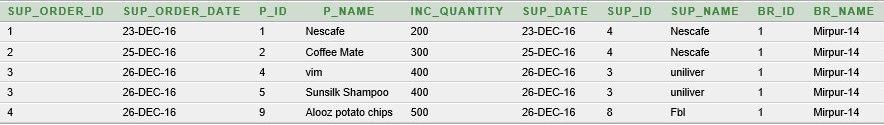
1. Generate a bill for order number 2

*select o.order\_no , o.order\_date , c.c\_id , c.c\_name , p.p\_id , p.p\_name , con.con\_quantity , p.sell\_unit\_price , s.s\_id , s.s\_name , con.con\_quantity\*p.sell\_unit\_price as "Total" from orders o , contains con , sales\_man s , customers c , products p , places pl where o.order\_no = pl.order\_no and pl.c\_id = c.c\_id and o.order\_no = con.order\_no and o.s\_id = s.s\_id and con.p\_id = p.p\_id and o.order\_no = 2*



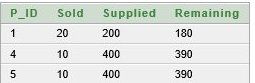
1. Display total supply of the store

*select supo.sup\_order\_id , supo.sup\_order\_date , inc.p\_id , p.p\_name , inc.inc\_quantity , supplies.sup\_date , supl.sup\_id , supl.sup\_name , br.br\_id , br.br\_name from products p , includes inc , branch br , sup\_order supo , supplies , supplier supl where p.p\_id = inc.p\_id and inc.sup\_order\_id = supo.sup\_order\_id and supo.sup\_order\_id = supplies.sup\_order\_id and supo.br\_id = br.br\_id and supplies.sup\_id = supl.sup\_id order by supo.sup\_order\_id asc*



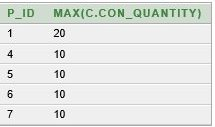
1. 3. Display product supplied , sold and remaing number by Product id

*select c.p\_id , sum(c.con\_quantity) as "Sold" , sum(i.inc\_quantity) as "Supplied" , (sum(i.inc\_quantity)-sum(c.con\_quantity)) as "Remaining" from contains c , includes i , products p where c.p\_id = i.p\_id and i.p\_id = p.p\_id group by c.p\_id order by c.p\_id*



1. Display Maximum selling product by group by Product id

*select c.p\_id , max(c.con\_quantity) from products p , orders o , contains c where o.order\_no = c.order\_no and p.p\_id = c.p\_id group by c.p\_id*



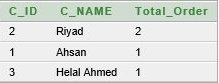
1. Display the seller\_id who has the highest selling history

*select o.s\_id, count(o.order\_no) from orders o group by o.s\_id order by count(o.order\_no) desc*



1. . Display the most frequent g\_u\_id

*select p.c\_id , c.c\_name , count(p.order\_no) as "Total\_order" from cart s , g\_u\_id c where c.c\_id = p.c\_id group by p.c\_id , c.c\_name order by count(p.order\_no) desc*



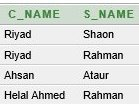
1. Display the mobile number of the customer who id is 2

*select c\_id , c\_name , c\_mobile\_no from g\_u\_user where g\_u\_id = 2*



1. Find the customer name and his sales man name

*select distinct(c.c\_name) , s.s\_name from customers c , sales\_man s , places p , orders o where c.c\_id = p.c\_id and p.order\_no = o.order\_no and s.s\_id = o.s\_id*



* **Bonus**

**Summarize learning experience from database project**

We have learned many lessons and hade valuable experience doing this project on database system. Though we had several problems doing this project but the achievements were more precious and efficient.

* This project would not be possible without the help of ORACLE SQL APPLICATION EXPRESS software.
* Companies or various institutes use databases because they can store a large number of records, ease of use when locating information, it is easy to add new data and to edit or delete old data, there is ease of storage Data can be imported into other applications
* The whole database model and specially the tables were created very carefully and the joining or linking among the table were done very carefully and also followed DBMS rules
* The constraints such as primary keys or foreign keys of the tables were assigned properly for linking among tables
* By fulfilling these objectives and system policies this project would be a proper and organized database system to run the system.
* The number of levels that the software is handling can be made unlimited in future from the current status of handling up to N levels as currently laid down by the software.
* Efficiency can be further enhanced and boosted up to a great extent by normalizing  and de-normalizing the database tables used in the project as well as taking the kind of the alternative set of data structures and advanced calculation algorithms available.
* We can in future generalize the application from its current customized status wherein other vendors developing and working on similar applications can utilize this system and make changes to it according to their client’s needs.
* Our main outcome would be faster processing of information as compared to the current system with high accuracy and reliability.
* Automatic and error free report generation as per the specified format with ease.
* With a fully automated solution, lesser staff, better space utilization and peaceful work environment, the institute is bound to experience high turnover.
* A future application of this system lies in the fact that the proposed system would remain relevant in the future.

In case there be any additions or deletion of the services, addition or deletion of any individual in any type of modification in future can be implemented easily. The data collected by the system will be useful for some other purposes also.

END\*\*