

## Done by

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## E-Commerce

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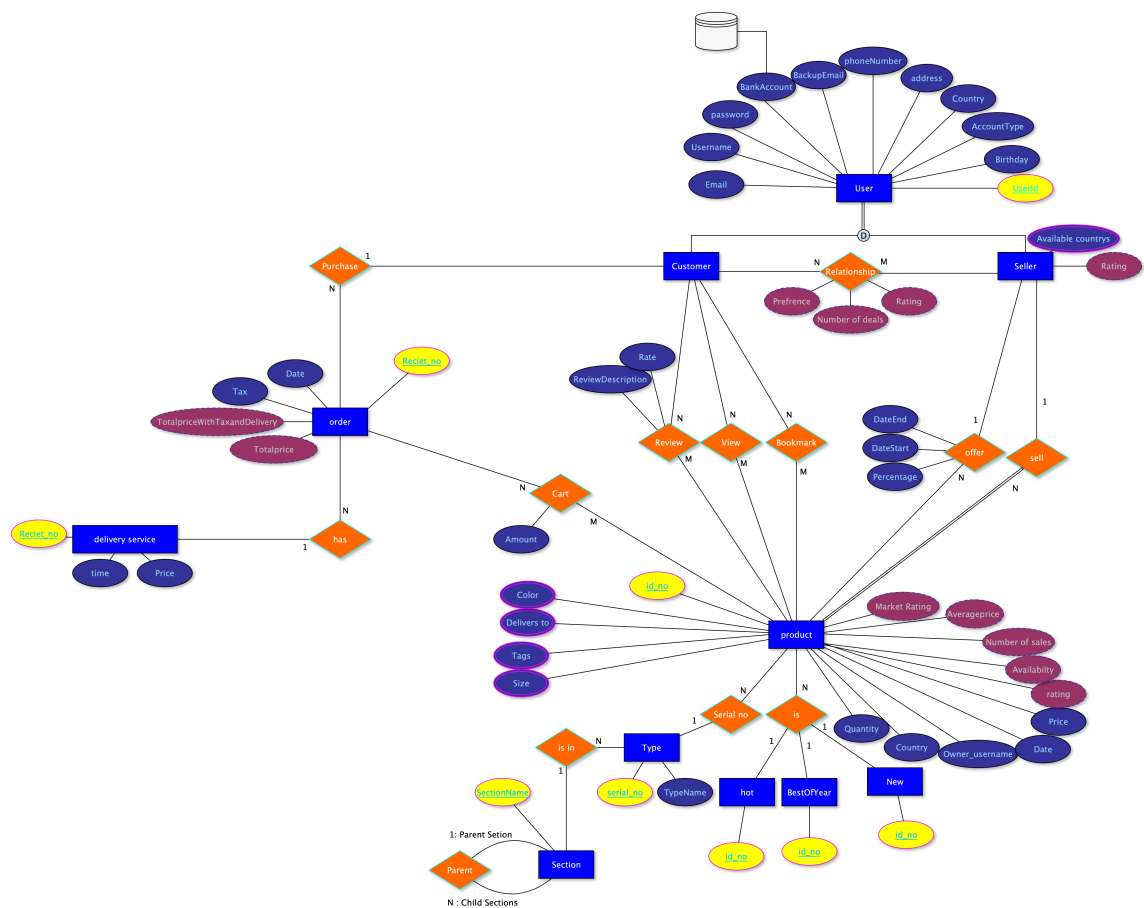
This is an E-Commerce website that has users and sellers. This project will aim to use user interaction with the website to benefit the user with recommendation, so the more the user uses the website the more the recommendations become more accurate. and we use the multiple user accounts to help the website connect a relation between age, location, purchases, and history.

- it will **recommend** based on multiple relations and attributes like:

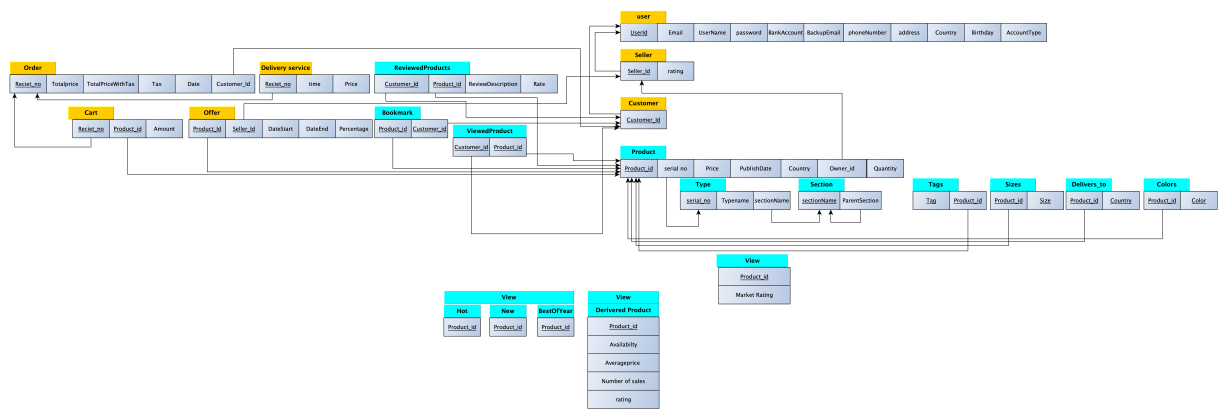
1. Customer Buys The Product
2. Seller Sells The Product
3. Customer Relation with the seller
4. Customer recursive relation with Age Group
5. Customer Recursive relation with View History
6. Customer View Product
7. Customer Bookmark Product
8. Seller Offer on Product

## Erm

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# Mapping



# The Scope of the project

In this day and age information is very useful and important even if we don't see the connection or we aren't using it currently, storing these data is so vital, so with this project we try to store data as much as we see useful without having storing data that will hogging the storage.

This database aims to be used for an e-commerce site that has multiple types of products and many countries to delivery to, since this database can store everything a e-commerce website need, from accounts for **users** ( customers or sellers ), **products**, **orders**, **delvierey service**, **sections**, **types of products**, and **views** that can be update periodicly to set the **hot** or **new** products so we can retriive what kind of **products** we want to **feature** and **recommend** to our users, and what type of sellers we want to **feature** because of there good history and reviews.

## About the constraints and the methodology behind it

When we designed these constraints we designed them to be robust and smart, for example most of our important tables their **Forgien key** and their **primary key** constraints were defined as column level constriants so it would be hard to drop these constraint vital from any that has drop constraint privileges.

## Advantages of the project to the company

this project is designed in a way to satisfy 1nf, 2nf, 3nf and it stores valuable information so the project and the database can be expanded on and we could use the information that aren't used as much later on if the company wants to adapt data mining and machine learning with out having to start from the beginning with collecting valuable information

## Defenitions

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### Defenitions Of Entities

#### Users

This is The Main Entity Which Include The Users And all Thier Informations from thier Names , id, banckaccount .. ect

#### Seller

This is Sub Entity Which inherit from Users And Sellers Who Sell the Products on The E-Comerce Website

#### Customers

This is Sub Entity Which inherit from Users And Those Are The Customers Who Buy The Products From The E-Comerce Website

#### Product

in This Entity There Are all the Products That's on The Database And in Which We Disscused All The attributes of the Product

#### Type

When we talk about Products There's Must be For Sure a Type for that Product , So in this Entity We discussed They Types Of the Products

## Section

As Well as Having Types there Must be Sections Which Those Types Refer To So We Made An Entity For that Reason

## Order

In This Entity We Discussed The Process When The Customer Order a Product he Can Observe The Reciet No , The Tax , And The Total Price

## Delivery Service

This Entity Is Made For Service of Delivering the Product so we can calculate the Price of Delivery As well as The Time Needed .

## Hot

At This realationship We made That The Product Can Be Hot if the Product is Out Less Than 4 months and it has More than 3.5 Rating ,

## New

And The New Product is A Product that Has Been Out For a less than a Monthand has more than 3.5 Rating

## BestOfYear

BestOfYear Product is a Product that Has Been Out For less than a year And it Has A Rating Above 4.

## Relations

### The Relation between The Customer and Seller "Relationship"

Which Can Happen Between (N) Customers Can Have a Preferred (M) Sellers Which He Buy From His Product and He Likes The Quality Of His Products so He can Put The Seller From One of his Preferred Seller as Well as it includes The Number of Products The Customers Bought from that Seller and The Rating For That Seller .

### The Relation Between The Customers and Order "Purchase"

In This Realation (1) Customers Can Purchase (N) Orders , Which is Made So The Customer Can Purchase an Order

### The Relation Between The Seller and The Product "Offer"

This Realationship is Made For The Seller As he can Put Offer on His Products With a percentage with a Starting date and Finishing date for That Offer

### The Relation Between The Customer And Product "Review Product "

After The Customer Order An Order And A The Customer Recives His Product He Can Review The Product So It Can Help The Other Customer's To Make Choice about Buying Their Products and Contribute Of The Average of The Rating.

### The Relation Between The Customer and Product "ViewdProduct "

As Well as Having the Option of the Bookmarking the Customer can also Have The Option of Seeing All the Products he Already Just viewd Them So we Made an Entity For that Reason it Includes The Customer id and product id .

### The Relation Between The Customer And Product "Bookmark"

In This Entity We Let The Customer have the Option of Bookmarking The Product as If he Wished To View it or But The Product Later On He can get Back to it Easily it Includes it has The Product\_id as Well The Customer\_id for that Purpose

### The Relation Between The Order And Product " Cart "

In This Relation You Can Know The Amount of Products a Customer Ordered in a Single Order We Can Have (N) Orders Cart (M) Products

### The Relation Between The Seller And Product "Sell"

This Relation is When a(1) Seller Can Put (N) Products On The Website

### The Relation Between Order And Delivery Service "has"

Which In This Relation we can have (N) order "Has" (1) Delievery Services That Can Deliver That Order .

### The Relation Between The Product And Type "Serial no"

In This Relation (N) Products can Single Serial Number of Type That's Why we put it in the Mapping as an attribute ###The Relation Between The Type And Section "Is in" In This realation we Can have (N) Types That Have (1) Section that Refer To. ###The ternary relationship Between Product and hot and BestOfYear and New "Is" This Realation Determines Wither The Prodduct is New Or Hot Or Best Of Year

### The Recursive Realation Between The Section And it'sslef "Parent"

This Realtionship Which Can Have (1) Parent For (N) Child Sections , So we Can Know Every Section For Which Parent They Belong , Example Section Computers Belong To Electronics .

## The Attributes

For The User Entity :

**Email** : The Email of The user **UserName**: The Username That The User Has Chooosed. **Password** : A Password For That User Account. **Bank Account For The Customer**: The Way The User Will Pay And As We Create An Account it's Not Necessary But When The Customer Order it's Asked To Give The Payment Method And if He's A Seller . **Bank Account For The Seller** : It's Neccisry to Put This Infomation So The Seller Can Revice His Payment. **Phone Number For The Customer**: The Phone Number OF The User So When The Delivery Is Delivered The Delivery Service Can Contact With Him . **Address**: The Address Of The User So The

Delivery Service Can Know Where To Deliver. **Address For The Seller**: So The Delivery Service Can Come and Take The Seller's Products. **Country** : The Country Of The user is Living in So This Can help Us in The Deliver To. **Account Type** : So We Can Know Whether The User is A User or A Seller . **Birthday** : So The Website can wish him a Happy Birthday . **User Id**: This Is The Most Important Attribute so we Can Trace This User.

Seller Entity :

**Seller id** : it's Primary Key for Seller Entity And a Foreign Key Which refers To The User id. **Rating** : The Current Rating For that Seller .

Customer Entity:

**Customer id**: a Primary Key and a Foreign Key That Refer For The User Id .

Product Entity :

**Product id** : it's The Primary key For a Product Which Identify The Product . **Serial no**: this is The Number That Refers For The Type So we can Know The Product Type. **Price** : The Price Of That Product That The Seller have Chosen. **Publish date**: The Date The Product Has Been Published on The web . **Country** : The Country The Product That was Made in . **Owner\_id**: it's a Foreign Key That Reference The Seller id That Own That Product. **Quantity** : This so We can Know How Much of This Product we Have .

Type Entity :

**Serial\_no**: the Number of that Type And it's Primary key Which Identify That Type **Type Name** : So We can Insert The Type name Like 'Iphone8' **Section Name**: it's A Foreign Key That Refer To The Section Name

Section Entity:

**Section Name** : Which refers To The Section Name Like "Computers". **ParentSection** : Which refers To The Parent of A Current Section like "Electronics".

Viewed Product:

**Customer Id** : Which is a primary key and foreign key refers To The Customer Id . **Product Id** : Which is a primary key and foreign key refers to the Product Id .

Bookmark:

**Customer Id** : Which is a primary key and foreign key refers To The Customer Id . **Product Id** : Which is a primary key and foreign key refers to the Product Id .

Order:

**Reciet\_no** : which is Primary Key and it's the Reciet Number of that Order. **Total Price** : Total Price Without Tax. **Total Price With Tax** : Total Price With Tax. **Tax** : The Sum of The Taxes in a Order . **Date** : The Date When the Customer Ordered an Order. **Customerid** : which refers To The Customer\_id Who Ordered That Order.

Delivery Service :

**Reciet\_No** : a Primary Key Which refers to Order Reciet\_No So we can Trace This Dilevery For Which Order.

**Time** : The Time needed For The Order To Be Delievered . **Price** : The Price of The Delievery .

## Cart

**Reciet\_No** : a Primary Key Which refers to Order Reciet\_No So we can Trace How Many items a Customer has Bought in a Single Order. **Product\_id** : So we can Know Which Product did the customer put in The Cart .

**Amount** : The Amount of The Items That are in The Cart .

## Offer

**Product\_id** : So We can Know On Which Product Did the Seller put His Offer . **Seller id** : So We can Know which seller Who Offered This Offer . **Date Start** : The Date The Offer Starts . **Date End** : The Date The Offer Ends. **Percentage** : The Percentage of the Offer on a Product .

## Tags :

**Tag\_\_** : Tags That can Be Putted on a Product Like “Mobiles”,”iPhone8”.. ect. **Product\_id** : Primary key That Refer For Which Product we Put Those Tags at .

## Sizes

**Size** : So We Can Choose A Size for a Current Product like : small or medium or large .. ect; **Product\_id** : Primary key That Refer For Which Product we Put Those Size to.

## Delivers To :

**Product\_id** : Primary key That Refer For Which Product . **Country** : So We can Choose The countries That Seller Choose to Deliever to.

## Colors:

**Product\_id** : Primary key That Refer For Which Product . **Color** : So We Can Choose What Color is Available For A Current Product .

# MYSQL QUERIES

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## Creating Table

```
create table User_Account(
  UserId int auto_increment,
  Email varchar(30) not null,
  username varchar(30) not null ,
  account_pass varchar(16) not null,
  Backup_Email varchar(30) not null,
  phonenumber varchar(15) not null,
  address varchar(20) not null,
  country varchar(15),
  BankAccount char(16), # the way of payment like visa
```

```

    birthdate date,          # 8 because like 01-01-1998
    AccountType varchar(1) not null,
    primary key (userId),
    constraint UserAccount_UN_Unique unique(username),
    constraint UserAccount_Email_Unique unique(Email)
);

create table Seller(
    seller_id int not null,
    rating int check(rating>0 and rating <6),
    primary key(seller_id),
    foreign key(seller_id)
    references User_Account(userid)
);

create table customer(
    Customer_id int not null ,
    constraint primary key (customer_id),
    constraint foreign key (customer_id) references
User_Account(userId)
);

create table share_view_history(
    customer_id int not null,
    second_customer_id int not null ,
    Accuracy decimal(3,2) ,
    constraint shareview_Accuracy_check check(Accuracy >=0 and Accurace
<=1),
    constraint sharview_PK primary key(customer_id,second_customer_id),
    constraint shareview_custid_FK foreign key (customer_id) references
customer(customer_id),
    constraint shareview_2custid_FK foreign key (second_customer_id)
references customer(customer_id)
);

create table realation(
    customer_id int not null ,
    seller_id int not null ,
    constraint realation_PK primary key (customer_id,seller_id),
    constraint realation_seller_FK foreign key (seller_id) references
Seller(Seller_id),
    constraint realation_customer_Fk foreign key (customer_id) references
customer(customer_id)
);

create table available_country(
    seller_id int not null,
    available_countrys varchar(20) not null ,
    constraint Availablecountry_Pk primary key(seller_id),
    constraint Availablecountry_seller_Fk foreign key(seller_id)
references seller(seller_id)
);

```



```
create table Customer_order (
    reciet_no int not null auto_increment,
    totalprice float default 0,
    totalpricewithtax float default 0,
    Date_of_order date ,
    tax float,
    customer_id int not null ,
    constraint customerorder_check check (tax >=0),
    constraint primary_key(reciet_no) ,
    constraint foreign_key (customer_id) references customer(customer_id)
);

create table Delivery_service(
    reciet_no int not null ,
    Deleivery_time date ,
    price float ,
    constraint Delivery_Check check(price > 0),
    constraint Deleivery_PK primary key (reciet_no),
    constraint Delivery_Fk foreign key (reciet_no) references
customer_order(reciet_no)
);

create table Section(
    SectionName varchar(15) not null,
    ParentSection varchar(15) default null,
    constraint Section_pk PRIMARY key(SectionName),
    constraint Section_Parent_fk foreign key (ParentSection) references
Section(SectionName) on delete set null,
    unique(SectionName)
);

create table Product_Type(
    Serial_no int auto_increment primary key,
    TypeName varchar(15) not null unique,
    SectionName varchar(15)not null,
    foreign key(SectionName) references Section(SectionName)
);

create table Product(
    Product_ID int auto_increment primary key,
    serial_no int ,
    foreign key(serial_no) references Product_Type(Serial_no),
    Price int not null,
    PublishDate Date not null,
    Country varchar(20) not null,
    Owner_ID int not null,
    Quantity int not null check (Quantity>=0)
);

create table cart(
    reciet_no int not null ,
    product_id int not null ,
    amount int ,
    constraint Cart_PK primary key (reciet_no,product_id),
```

```
constraint Cart_order_FK foreign key (reciet_no) references
customer_order(reciet_no),
constraint Cart_product_FK foreign key(product_id) references
product(product_id)
);

create table offer (
    product_id int not null ,
    seller_id int not null ,
    datestart date ,
    dateend date,
    percentage decimal (3,2) default 0 ,
    constraint Offer_Pk primary key (product_id,seller_id),
    constraint Offer_product_FK foreign key(product_id) references
product(product_id),
    constraint Offer_sellerid_FK foreign key(seller_id) references
seller(seller_id)
);

create table Tags (
    Tags varchar(15) ,
    Product_ID int,
    foreign key(Product_ID) references Product(Product_ID),
    primary key (Tags,Product_ID)
);

create table Sizes (
    Size varchar(15) ,
    Product_ID int ,
    foreign key(Product_ID) references Product(Product_ID),
    primary key (Size,Product_ID)
);

create table Delivers_To (
    Delivers_To varchar(15),
    Product_ID int,
    foreign key(Product_ID) references Product(Product_ID),
    primary key (Delivers_To,Product_ID)
);

create table Colors(
    Color varchar(15) ,
    Product_ID int,
    foreign key(Product_ID) references Product(Product_ID),
    primary key (Color,Product_ID)
);

create table ViewedProduct(
    Customer_ID int,
    Product_ID int,
    primary key(Customer_ID,Product_ID)
);

create table Bookmark(
```

```

    Customer_ID int,
    Product_ID int,
    primary key(Customer_ID,Product_ID)
);

create table ReviewedProducts(
    Customer_ID int,
    Product_ID int,
    ReviewDescription varchar(150),
    Rate int,
    primary key(Customer_ID,Product_ID),
    constraint check_rate_reviewed check(Rate>0 and Rate<6)
);

```

## insert statements

---

```

### insert here
### Users
insert into
User_Account(Email,Username,account_pass,Backup_Email,phoneNumber,address,
country,bankaccount,birthdate,accounttype)
values('Ahmad123@gmail.com','Ahmadqasho','Ahmad1998','ahmadgasho@gmail.com',
'0962798463157','Universtystreet','Jordan','1234567899876543','1998-7-16','S');

insert into
User_Account(Email,Username,account_pass,Backup_Email,phoneNumber,address,
country,bankaccount,birthdate,accounttype)
values('Mohammad456@gmail.com','MohammadAhmmad','Mohammad1998','MohammadAhmad@gmail.com',
'0962798462157','Universtystreet','Jordan','1234566899876543','1978-8-16','S');

insert into
User_Account(Email,Username,account_pass,Backup_Email,phoneNumber,address,
country,bankaccount,birthdate,accounttype)
values('SaraAhmad@gmail.com','SaraAhmmad','asd48as133','SaraAhmad@gmail.com',
'0012798462157','51Green BayWI 54302','Usa','1254566899226543','1988-8-2','S');

insert into
User_Account(Email,Username,account_pass,Backup_Email,phoneNumber,address,
country,bankaccount,birthdate,accounttype)
values('AlyxProctor134@gmail.com','Alyx1478945','asd05420','AlyxProctor164@gmail.com',
'0012798462157','51Green BayWI 54302','Usa','7412545823310946','1988-8-2','S');

insert into
User_Account(Email,Username,account_pass,Backup_Email,phoneNumber,address,
country,bankaccount,birthdate,accounttype)

```

```
values('JaxonMichel@gmail.com','Jaxon7894','Jaxonia123','Jaxonia1784@gmail.com','0012398462257','William MI 49464','Usa','7628078020066261','1984-2-12','S');
```

```
insert into
User_Account(Email,Username,account_pass,Backup_Email,phoneNumber,address,
country,bankaccount,birthdate,accounttype)
values('NathanialWicks@yahoo.com','NathanialWicks','Nathanial2121','Nathanial467@gmail.com','0962798465147','Abdoon','Jordan','6164049448896358','1970-1-30','S');
```

```
insert into
User_Account(Email,Username,account_pass,Backup_Email,phoneNumber,address,
country,bankaccount,birthdate,accounttype)
values('Omar@hotmail.com','Omar1654','Omar6545','MohammadAhmad@gmail.com','0962784462157','TlaAlAlit','Jordan','1831637873382355','1978-8-16','S');
```

```
insert into
User_Account(Email,Username,account_pass,Backup_Email,phoneNumber,address,
country,bankaccount,birthdate,accounttype)
values('Sharif0654@gmail.com','Sharif5496','Shar1522i','Sharif150@gmail.com','0012798462157','51Green BayWI 54302','Usa','7992577620901883','1988-8-2','S');
```

```
insert into
User_Account(Email,Username,account_pass,Backup_Email,phoneNumber,address,
country,bankaccount,birthdate,accounttype)
values('Majd1564@gmail.com','asd5as6d65','asdasd','SaraAhmad@gmail.com','0012798462157','Nashville, TN 37205','Usa','0372356675801587','1992-11-2','S');
```

```
insert into
User_Account(Email,Username,account_pass,Backup_Email,phoneNumber,address,
country,bankaccount,birthdate,accounttype)
values('Alexandarahaha@gmail.com','dasdas1651','sf2v0sf','Alexandra467@gmail.com','0012797462156','William MI 49464','Usa','5135600799104997','1984-2-12','S');
```

```
insert into
User_Account(Email,Username,account_pass,Backup_Email,phoneNumber,address,
country,bankaccount,birthdate,accounttype)
values('Fadwa45@gmail.com','Fadwa','Fadwa123','Fadwa4545@gmail.com','096740566157','shmesani','Jordan','1234567899876543','1991-1-15','C');
```

```
insert into
User_Account(Email,Username,account_pass,Backup_Email,phoneNumber,address,
country,bankaccount,birthdate,accounttype)
values('Dahook456@gmail.com','Dahook159','Dahooj15465','Dahook456@hotmail.com','0962730462157','Universtystreet','Jordan','0279605915676901','1968-8-12','C');
```

```
insert into
User_Account(Email,Username,account_pass,Backup_Email,phoneNumber,address,
country,bankaccount,birthdate,accounttype)
values('ZackRedmond@gmail.com','ZackRedmond','ZackRedmond84630','ZackRedmo
```

```
nd4567@hotmail.com','0012799965477','51Green BayWI  
54302','Usa','4481007764554591','1984-8-2','C');
```

```
insert into
```

```
User_Account(Email,Username,account_pass,Backup_Email,phoneNumber,address,  
country,bankaccount,birthdate,accounttype)  
values('AmeeraHumphries@gmail.com','AmeeraHumphries','asd05420','Ameera  
Humphries164@gmail.com','0012798462157','Canal  
0H43110','Usa','5288594769914994','1986-8-23','C');
```

```
insert into
```

```
User_Account(Email,Username,account_pass,Backup_Email,phoneNumber,address,  
country,bankaccount,birthdate,accounttype)  
values('ZaneHenson1122@gmail.com','ZaneHenson','ZaneHenson1456','ZaneHenson  
147@gmail.com','0012025550154','William MI  
49464','Usa','2198363754951335','1981-2-28','C');
```

```
insert into
```

```
User_Account(Email,Username,account_pass,Backup_Email,phoneNumber,address,  
country,bankaccount,birthdate,accounttype)  
values('DukeWade@yahoo.com','DukeWade','Duke Wadel2121','Duke  
Wade1467@gmail.com','0962798466127','Irbid','Jordan','7070396618482580','1  
972-1-30','C');
```

```
insert into
```

```
User_Account(Email,Username,account_pass,Backup_Email,phoneNumber,address,  
country,bankaccount,birthdate,accounttype)  
values('DanniellaCarver@hotmail.com','DanniellaCarver1654','Danniell6545',  
'DanniellaCarver1654@gmail.com','0962784462157','Gardenz','Jordan','834199  
9062632854','1998-10-8','C');
```

```
insert into
```

```
User_Account(Email,Username,account_pass,Backup_Email,phoneNumber,address,  
country,bankaccount,birthdate,accounttype)  
values('KendrickFernandez@gmail.com','KendrickFernandez5496','Kendrick1654  
, 'KendrickFernandez16@gmail.com','0012035552174','Maspeth, NY  
11378','Usa','6714318432063381','1985-3-12','C');
```

```
insert into
```

```
User_Account(Email,Username,account_pass,Backup_Email,phoneNumber,address,  
country,bankaccount,birthdate,accounttype)  
values('HiraDavies145@gmail.com','HiraDavies','Hira1654','HiraDavies1234@g  
mail.com','0012023164687','New Rochelle  
NY10801','Usa','4998110279823454','1994-4-5','C');
```

```
insert into
```

```
User_Account(Email,Username,account_pass,Backup_Email,phoneNumber,address,  
country,bankaccount,birthdate,accounttype)  
values('KymaniPetty@gmail.com','KymaniPetty','sf2v0sf','KymaniPetty165@gma  
il.com','001286550112','Owatonna, MN  
55060','Usa','3552291457493930','1983-6-8','C');
```

### ### Sellers

```
insert into seller(seller_id,rating)
values('1','5');
insert into seller(seller_id,rating)
values('2','5');
insert into seller(seller_id,rating)
values('3','5');
insert into seller(seller_id,rating)
values('4','5');
insert into seller(seller_id,rating)
values('5','5');
insert into seller(seller_id,rating)
values('6','5');
insert into seller(seller_id,rating)
values('7','5');
insert into seller(seller_id,rating)
values('8','5');
insert into seller(seller_id,rating)
values('9','5');
insert into seller(seller_id,rating)
values('10','5');
```

### ### Customers

```
insert into customer(customer_id)
values('11');
insert into customer(customer_id)
values('12');
insert into customer(customer_id)
values('13');
insert into customer(customer_id)
values('14');
insert into customer(customer_id)
values('15');
insert into customer(customer_id)
values('16');
insert into customer(customer_id)
values('17');
insert into customer(customer_id)
values('18');
insert into customer(customer_id)
values('19');
insert into customer(customer_id)
values('20');
```

### ### Sections

```
insert into section(sectionname,parentsection)
values('Electronics','Electronics');
insert into section(sectionname,parentsection)
values('Accessories','Accessories');
insert into section(sectionname,parentsection)
values('Clothes','Clothes');
insert into section(sectionname,parentsection)
values('computers','Electronics');
insert into section(sectionname,parentsection)
values('Mobiles','Electronics');
insert into section
values('Wallets','Accessories');
insert into section(sectionname,parentsection)
values('T-Shirts','Clothes');
```

### ### Types

```
insert into Product_Type(serial_no,typename,sectionname)
values('1','Lenovo','computers');
insert into Product_Type(serial_no,typename,sectionname)
values('2','Mac','computers');
insert into Product_Type(serial_no,typename,sectionname)
values('3','Samsung','Mobiles');
insert into Product_Type(serial_no,typename,sectionname)
values('4','iPhone8','Mobiles');
insert into Product_Type(serial_no,typename,sectionname)
values('5','rolex watches','Wallets');
insert into Product_Type(serial_no,typename,sectionname)
values('6','American-Eagle','T-Shirts');
```

### ### Customer\_orders

```
insert into
customer_order(reciet_no,totalprice,totalpricewithtax,date_of_order,tax,cu
stomer_id)
values('11','700','717.5','2018-8-11','2.5','11');
insert into
customer_order(totalprice,totalpricewithtax,date_of_order,tax,customer_id)
values('500','525','2018-6-20','5','11');
insert into
customer_order(totalprice,totalpricewithtax,date_of_order,tax,customer_id)
values('1500','1650','2018-3-30','10','11');
insert into
customer_order(totalprice,totalpricewithtax,date_of_order,tax,customer_id)
values('1000','1025','2018-7-11','2.5','12');
insert into
customer_order(totalprice,totalpricewithtax,date_of_order,tax,customer_id)
values('1200','1260','2018-4-20','5','13');
insert into
```

```
customer_order(totalprice,totalpricewithtax,date_of_order,tax,customer_id)
values('600','660','2018-12-30','10','14');
insert into
customer_order(totalprice,totalpricewithtax,date_of_order,tax,customer_id)
values('1000','1025','2018-8-16','2.5','14');
insert into
customer_order(totalprice,totalpricewithtax,date_of_order,tax,customer_id)
values('1200','1260','2018-6-20','5','15');
insert into
customer_order(totalprice,totalpricewithtax,date_of_order,tax,customer_id)
values('600','660','2018-3-1','10','16');
insert into
customer_order(totalprice,totalpricewithtax,date_of_order,tax,customer_id)
values('2000','2700','2018-8-11','35','12');
insert into
customer_order(totalprice,totalpricewithtax,date_of_order,tax,customer_id)
values('1300','1495','2018-6-20','15','13');
```

### ###Products

```
insert into product(serial_no,price,publishdate,country,owner_id,Quantity)
values('1','600','2018-1-1','Jordan','1','20');
```

```
insert into
product(serial_no,price,publishdate,country,owner_id,Quantity)
values('1','700','2018-7-4','Usa','2','40');
```

```
insert into product(serial_no,price,publishdate,country,owner_id,Quantity)
values('1','500','2018-8-16','Japan','3','15');
```

```
insert into
product(serial_no,price,publishdate,country,owner_id,Quantity)
values('2','1500','2018-7-12','Jordan','4','16');
```

```
insert into
product(serial_no,price,publishdate,country,owner_id,Quantity)
values('2','2000','2016-6-22','Usa','5','30');
```

```
insert into product(serial_no,price,publishdate,country,owner_id,Quantity)
values('2','1000','2017-12-2','Japan','6','10');
```

```
insert into product(serial_no,price,publishdate,country,owner_id,Quantity)
values('3','700','2018-10-16','Japan','7','50');
```

```
insert into product(serial_no,price,publishdate,country,owner_id,Quantity)
values('3','1200','2018-11-2','Usa','8','20');
```

```
insert into product(serial_no,price,publishdate,country,owner_id,Quantity)
values('3','650','2018-12-21','Japan','9','12');
```

```
insert into product(serial_no,price,publishdate,country,owner_id,Quantity)
values('4','1200','2018-7-21','Jordan','7','50');
```



```
insert into product(serial_no,price,publishdate,country,owner_id,Quantity)
values('4','1000','2018-8-2','Usa','7','20');

insert into product(serial_no,price,publishdate,country,owner_id,Quantity)
values('6','200','2018-3-13','Japan','2','12');

insert into product(serial_no,price,publishdate,country,owner_id,Quantity)
values('5','400','2018-10-16','Japan','1','50');

insert into product(serial_no,price,publishdate,country,owner_id,Quantity)
values('5','1200','2018-11-2','Usa','3','20');

insert into product(serial_no,price,publishdate,country,owner_id,Quantity)
values('6','100','2018-8-15','Japan','4','30');
```

### ###Delivery Service

```
insert into Delivery_service (reciet_no,Deleivery_time,price)
values('11','2018-9-12','200');
insert into Delivery_service (reciet_no,Deleivery_time,price)
values('12','2018-7-20','200');
insert into Delivery_service (reciet_no,Deleivery_time,price)
values('13','2018-4-20','200');
insert into Delivery_service (reciet_no,Deleivery_time,price)
values('14','2018-8-11','200');
insert into Delivery_service (reciet_no,Deleivery_time,price)
values('15','2018-5-20','200');
insert into Delivery_service (reciet_no,Deleivery_time,price)
values('16','2019-1-30','200');
insert into Delivery_service (reciet_no,Deleivery_time,price)
values('17','2018-7-16','200');
insert into Delivery_service (reciet_no,Deleivery_time,price)
values('18','2018-7-20','200');
insert into Delivery_service (reciet_no,Deleivery_time,price)
values('19','2018-4-1','200');
insert into Delivery_service (reciet_no,Deleivery_time,price)
values('20','2018-9-11','200');
```

### ###Cart

```
insert into cart(reciet_no,product_id,amount)
values('11','1','2');
insert into cart(reciet_no,product_id,amount)
values('11','2','4');
insert into cart(reciet_no,product_id,amount)
values('11','3','3');
insert into cart(reciet_no,product_id,amount)
```

```
values('12','1','2');
insert into cart(reciet_no,product_id,amount)
values('13','5','4');
insert into cart(reciet_no,product_id,amount)
values('14','4','3');
insert into cart(reciet_no,product_id,amount)
values('15','9','2');
insert into cart(reciet_no,product_id,amount)
values('16','8','1');
insert into cart(reciet_no,product_id,amount)
values('17','7','1');
```

### ###Offer

```
insert into Offer(product_id,seller_id,datestart,dateend,percentage)
values('1','1','2018-2-1','2018-3-1','0.15');
insert into Offer(product_id,seller_id,datestart,dateend,percentage)
values('3','4','2018-8-1','2018-9-1','0.30');
insert into Offer(product_id,seller_id,datestart,dateend,percentage)
values('2','1','2018-8-4','2018-9-4','0.15');
insert into Offer(product_id,seller_id,datestart,dateend,percentage)
values('6','4','2017-4-2','2017-4-30','0.10');
insert into Offer(product_id,seller_id,datestart,dateend,percentage)
values('8','1','2018-11-2','2018-11-10','0.20');
insert into Offer(product_id,seller_id,datestart,dateend,percentage)
values('7','4','2018-11-16','2018-11-20','0.50');
```

### ###Tags

```
insert into tags(Tags,Product_id)
values('Lenovo','1');
insert into tags(Tags,Product_id)
values('Computers','1');
insert into tags(Tags,Product_id)
values('Brand New','1');
insert into tags(Tags,Product_id)
values('2018','1');
insert into tags(Tags,Product_id)
values('Mac','4');
insert into tags(Tags,Product_id)
values('Best Laptops','4');
insert into tags(Tags,Product_id)
values('2019','4');
insert into tags(Tags,Product_id)
values('Samsung','7');
insert into tags(Tags,Product_id)
values('Korean','7');
insert into tags(Tags,Product_id)
```

```
values('iphone8','10');
insert into tags(Tags,Product_id)
values('iphone','10');
insert into tags(Tags,Product_id)
values('Mobiles','10');
insert into tags(Tags,Product_id)
values('2018','10');
```

### ###Sizes

```
insert into sizes(size,product_id)
values('S','15');
insert into sizes(size,product_id)
values('M','15');
insert into sizes(size,product_id)
values('L','15');
insert into sizes(size,product_id)
values('XL','15');
insert into sizes(size,product_id)
values('S','12');
insert into sizes(size,product_id)
values('M','12');
insert into sizes(size,product_id)
values('L','12');
insert into sizes(size,product_id)
values('XL','12');
insert into sizes(size,product_id)
values('XLL','12');
```

### ###Delivers\_To

```
insert into Delivers_To(Delivers_To,product_id)
values('Jordan','1');
insert into Delivers_To(Delivers_To,product_id)
values('Japan','2');
insert into Delivers_To(Delivers_To,product_id)
values('Usa','3');
insert into Delivers_To(Delivers_To,product_id)
values('Usa','4');
insert into Delivers_To(Delivers_To,product_id)
values('Jordan','5');
insert into Delivers_To(Delivers_To,product_id)
values('Jordan','6');
insert into Delivers_To(Delivers_To,product_id)
values('Usa','7');
insert into Delivers_To(Delivers_To,product_id)
values('Usa','8');
```

```
insert into Delivers_To(Delivers_To,product_id)
values('Japan','9');
insert into Delivers_To(Delivers_To,product_id)
values('Usa','10');
```

### ###Colors

```
insert into colors(color,product_id)
values('Black','1');
insert into colors(color,product_id)
values('Silver','2');
insert into colors(color,product_id)
values('Red','3');
insert into colors(color,product_id)
values('Golden','4');
insert into colors(color,product_id)
values('Silver','5');
insert into colors(color,product_id)
values('Black','6');
insert into colors(color,product_id)
values('Blue','7');
insert into colors(color,product_id)
values('White','8');
insert into colors(color,product_id)
values('Silver','9');
insert into colors(color,product_id)
values('Black','10');
```

### ###ViewedProduct

```
insert into viewedproduct(customer_id,product_id)
values('11','1');
insert into viewedproduct(customer_id,product_id)
values('12','1');
insert into viewedproduct(customer_id,product_id)
values('13','1');
insert into viewedproduct(customer_id,product_id)
values('14','1');
insert into viewedproduct(customer_id,product_id)
values('15','10');
insert into viewedproduct(customer_id,product_id)
values('16','9');
insert into viewedproduct(customer_id,product_id)
values('17','8');
insert into viewedproduct(customer_id,product_id)
values('18','7');
insert into viewedproduct(customer_id,product_id)
values('19','6');
```

```
insert into viewedproduct(customer_id,product_id)
values('20','5');
insert into viewedproduct(customer_id,product_id)
values('11','4');
insert into viewedproduct(customer_id,product_id)
values('12','3');
insert into viewedproduct(customer_id,product_id)
values('13','2');
```

### ###Bookmark

```
insert into bookmark(customer_id,product_id)
values('11','1');
insert into bookmark(customer_id,product_id)
values('12','2');
insert into bookmark(customer_id,product_id)
values('14','5');
insert into bookmark(customer_id,product_id)
values('19','10');
insert into bookmark(customer_id,product_id)
values('15','11');
insert into bookmark(customer_id,product_id)
values('16','12');
```

### ###ReviewedProducts

```
insert into ReviewedProducts(customer_id,product_id,reviewdescription)
values('11','1','it Was Great I Really Advice Everyone to try it ');
insert into ReviewedProducts(customer_id,product_id,reviewdescription)
values('11','2','i Did not Like That Color Alot ');
insert into ReviewedProducts(customer_id,product_id,reviewdescription)
values('11','3','I Really Enjoyed it ');
insert into ReviewedProducts(customer_id,product_id,reviewdescription)
values('14','6','it Was Great I Really Advice Everyone to try it They Will
Like it ');
insert into ReviewedProducts(customer_id,product_id,reviewdescription)
values('12','10','it is So Expensive and Not That Quality ');
insert into ReviewedProducts(customer_id,product_id,reviewdescription)
values('15','8','it Was Great ');
insert into ReviewedProducts(customer_id,product_id,reviewdescription)
values('16','9','Bad Product Do not Buy it ');
insert into ReviewedProducts(customer_id,product_id,reviewdescription)
values('12','4','I Loooved it ');
```

## Single Queries

---

number of products sold of a certain product

```
select sum(amount) from cart
where product_id=1;# number 1 can
```

### Output

```
SaraAhmmad
Alyx1478945
Jaxon7894
Sharif5496
asd5as6d65
dasdas1651
ZackRedmond
AmeeraHumphries
ZaneHenson
KendrickFernandez5496
HiraDavies
KymaniPetty
```

username of users in a certain country

```
select Username from user_account
where country='Usa';
```

### Output

```
SaraAhmmad
Alyx1478945
Jaxon7894
Sharif5496
asd5as6d65
dasdas1651
ZackRedmond
AmeeraHumphries
ZaneHenson
KendrickFernandez5496
HiraDavies
KymaniPetty
```

username of users who have a certain birthday

```
select username ,birthdate from user_account
where birthdate='1988-08-02';
```

### Output

SaraAhmmad	1988-08-02
Alyx1478945	1988-08-02
Sharif5496	1988-08-02

username of users who are customer

```
select username from user_account
where AccountType='C';
```

### Output

Fadwa
Dahook159
ZackRedmond
AmeeraHumphries
ZaneHenson
DukeWade
DanniellaCarver1654
KendrickFernandez5496
HiraDavies
KymaniPetty

username of users who are sellers

```
select username from user_account
where AccountType='S';
```

### Output

Ahmadqasho
MohammadAhmmad
SaraAhmmad
Alyx1478945
Jaxon7894
NathanielWicks

```
Omar1654
Sharif5496
asd5as6d65
dasdas1651
```

product\_id and their price that is sold by a certain seller

```
select Product_ID,price,Quantity from Product
where Owner_ID=2;
```

### Output

Product_ID	price	Quantity
2	700	40
12	200	12

product\_id and the price of a product that is between a certain range

```
select Product_ID,price from Product
where price between 0 and 700;
```

### Output

1	600
2	700
3	500
7	700
9	650
12	200
13	400
15	100

product\_id of products that are available

```
select Product_ID,price from Product
where Quantity >0;
```

### Output



Product_ID	price
1	600
2	700
3	500
4	1500
5	2000
6	1000
7	700
8	1200
9	650
10	1200
11	1000
12	200
13	400
14	1200
15	100

product\_id of products that are not available

```
select Product_ID,price from Product
where Quantity <=0;
```

### Output

Product_ID	price
16	1000

bank account for all users

```
select User_Account.username,User_Account.BankAccount
from User_Account;
```

### Output

username	Password
Ahmadqasho	1234567899876543
MohammadAhmmad	1234566899876543
SaraAhmmad	1254566899226543
Alyx1478945	7412545823310946
Jaxon7894	7628078020066261
NathanialWicks	6164049448896358
Omar1654	1831637873382355

Sharif5496	7992577620901883
asd5as6d65	0372356675801587
dasdas1651	5135600799104997
Fadwa	1234567899876543
Dahook159	0279605915676901
ZackRedmond	4481007764554591
AmeeraHumphries	5288594769914994
ZaneHenson	2198363754951335
DukeWade	7070396618482580
DanniellaCarver1654	8341999062632854
KendrickFernandez5496	6714318432063381
HiraDavies	4998110279823454
KymaniPetty	3552291457493930

Email password account type

```
select User_Account.username,User_Account.account_pass as
Password,User_Account.AccountType
from User_Account;
```

## Output

username	Password	AccountType
Ahmadqasho	Ahmad1998	S
MohammadAhmmad	Mohammad1998	S
SaraAhmmad	asd48as133	S
Alyx1478945	asd05420	S
Jaxon7894	Jaxonia123	S
NathanialWicks	Nathanial2121	S
Omar1654	Omar6545	S
Sharif5496	Shar1522i	S
asd5as6d65	asdasd	S
dasdas1651	sf2v0sf	S
Fadwa	Fadwa123	C
Dahook159	Dahooj15465	C
ZackRedmond	ZackRedmond84630	C
AmeeraHumphries	asd05420	C
ZaneHenson	ZaneHenson1456	C
DukeWade	Duke Wadel2121	C
DanniellaCarver1654	Danniell6545	C
KendrickFernandez5496	Kendrick1654	C
HiraDavies	Hira1654	C
KymaniPetty	sf2v0sf	C

## Multiple Queries

number of products sold by a seller

```
select sum(amount) as "number of products sold by a seller" from
cart,product
where cart.Product_ID=product.Product_ID
and product.Owner_ID=1;# 1 can be a variable inserted by client's program
```

### Output

```
number of products sold by a seller
4
```

number of products bought by a customer

```
select sum(amount) as "number of products bought by a customer"
from cart,product,customer_order
where cart.Product_ID=product.Product_ID
and cart.reciet_no=Customer_order.reciet_no
and Customer_order.Customer_ID=11;# 1 can be a variable inserted by
client's program
```

### Output

```
number of products bought by a customer
15
```

number of product a certain customer bought of a certain type by id

```
select product_type.TypeName as Type,
sum(amount) as "number of products(certain type) bought by a customer"
from cart,product,customer_order,product_type
where cart.Product_ID=product.Product_ID
and cart.reciet_no=Customer_order.reciet_no
and product_type.serial_no=Product.Serial_no
and Customer_order.Customer_ID=11
and product.serial_no=2;# 1 can be a variable inserted by client's program
```

### Output

Type	number of products(certain type) bought by a customer
Mac	4

number of product a certain customer bought of a certain type by name

```
select product_type.serial_no as Type,
sum(amount) as "number of products(certain type) bought by a customer by name"
from cart,product,customer_order,product_type
where cart.Product_ID=product.Product_ID
and cart.reciet_no=Customer_order.reciet_no
and product_type.serial_no=Product.Serial_no
and Customer_order.Customer_ID=11
and product_type.TypeName='Mac';# 1 can be a variable inserted by client's program
```

### Output

Type	number of products(certain type) bought by a customer by name
2	4

number of product a certain customer bought from a certain section

```
select Section.SectionName as Type,
sum(amount) as "number of products(certain section) bought by a customer by name"
from cart,product,customer_order,product_type,Section
where cart.Product_ID=product.Product_ID
and cart.reciet_no=Customer_order.reciet_no
and product_type.serial_no=Product.Serial_no
and Section.SectionName=product_type.SectionName
and Customer_order.Customer_ID=11
and Section.SectionName='computers';
```

### Output

Type	number of products(certain section) bought by a customer by
name	
computers	15

number of products sold this year

```
select sum(amount) as "number of products sold this year"
from cart, product, Customer_order
where cart.reciet_no=Customer_order.reciet_no
and Product.Product_ID = cart.Product_ID
and DATEDIFF(current_date,customer_order.date_of_order)<=365;
```

### Output

```
number of products sold this year
22
```

number of products sold this month

```
select sum(amount) as "number of products sold this month"
from cart, product, Customer_order
where cart.reciet_no=Customer_order.reciet_no
and Product.Product_ID = cart.Product_ID
and DATEDIFF(current_date,customer_order.date_of_order)<=30;
```

### Output

```
number of products sold this month
1
```

number of products sold this month from a section

```
select Section.SectionName , sum(amount)as "number of products sold this
month"
from cart, product, Customer_order,Section,product_type
where cart.reciet_no=Customer_order.reciet_no
and Product.Product_ID = cart.Product_ID
and Product.serial_no=product_type.serial_no
and Section.SectionName=product_type.sectionname
and DATEDIFF(current_date,customer_order.date_of_order)<=30
and Section.SectionName='mobiles'
group by Section.sectionname;
```

### Output

SectionName	number of products sold this month
Mobiles	1

number of products sold this month from a certain type

```
select product_type.TypeName , sum(amount)as "number of products sold this month"
from cart, product, Customer_order,product_type
where cart.reciet_no=Customer_order.reciet_no
and Product.Product_ID = cart.Product_ID
and Product.serial_no=product_type.serial_no
and DATEDIFF(current_date,customer_order.date_of_order)<=30
and product_type.TypeName='Samsung'# this can be changed to suit the type needed
group by product_type.TypeName;
```

### Output

TypeName	number of products sold this month
Samsung	1

customer info

phone numbers

```
select User_Account.username,User_Account.phonenumber
from User_Account,Customer
where customer.Customer_ID=user_account.userid;
```

### Output

username	phonenumber
Fadwa	096740566157
Dahook159	0962730462157
ZackRedmond	0012799965477
AmeeraHumphries	0012798462157
ZaneHenson	0012025550154
DukeWade	0962798466127
DanniellaCarver1654	0962784462157
KendrickFernandez5496	0012035552174
HiraDavies	0012023164687
KymaniPetty	001286550112

phone numbers of a specific user that is only a customer

```
select User_Account.username,User_Account.phonenumber
from User_Account,Customer
where customer.Customer_ID=user_account.userid
and user_account.username='Fadwa';
```

### Output

username	phonenumber
Fadwa	096740566157

phone numbers of a specific user that is only a seller

```
select User_Account.username,User_Account.phonenumber
from User_Account,seller
where seller.seller_id=user_account.userid
and User_Account.username='SaraAhmmad';
```

### Output

username	phonenumber
SaraAhmmad	0012798462157

bank account for all customers

```
select User_Account.username,User_Account.BankAccount
from User_Account,customer
where User_Account.userid=customer.Customer_ID;
```

### Output

username	BankAccount
Fadwa	1234567899876543
Dahook159	0279605915676901
ZackRedmond	4481007764554591
AmeeraHumphries	5288594769914994
ZaneHenson	2198363754951335

DukeWade	7070396618482580
DanniellaCarver1654	8341999062632854
KendrickFernandez5496	6714318432063381
HiraDavies	4998110279823454
KymaniPetty	3552291457493930

## Product info

tags of a product

```
select product_type.TypeName "Product Name",Tags.Tags "Tag"
from Product,product_type,Tags
where product_type.Serial_no=product.serial_no
and Product.Product_ID=Tags.Product_ID
and product_type.TypeName='Mac';
```

### Output

Product Name	Tag
Mac	2019
Mac	Best Laptops
Mac	Mac

sizes of a product

```
select product_type.TypeName "Product Name",Sizes.Size "Sizes"
from Product,product_type,Sizes
where product_type.Serial_no=product.serial_no
and Product.Product_ID=Sizes.Product_ID
and product_type.TypeName='American-Eagle';
```

### Output

Product Name	Sizes
American-Eagle	L
American-Eagle	M
American-Eagle	S
American-Eagle	XL
American-Eagle	XLL
American-Eagle	L
American-Eagle	M



American-Eagle	S
American-Eagle	XL

colors of a product

```
select product_type.TypeName "Product Name",Colors.Color "Color"
from Product,product_type,Colors
where product_type.Serial_no=product.serial_no
and Product.Product_ID=Colors.Product_ID
and product_Type.TypeName='Mac';
```

### Output

Product Name	Color
Mac	Golden
Mac	Silver
Mac	Black

delivers\_to of a product

```
select product_type.TypeName "Product Name",delivers_to.delivers_to
"Deliver to"
from Product,product_type,delivers_to
where product_type.Serial_no=product.serial_no
and Product.Product_ID=delivers_to.Product_ID
and product_Type.TypeName='Mac';
```

### Output

Product Name	Deliver to
Mac	Usa
Mac	Jordan
Mac	Jordan

the products that are delivered to certain locations

```
select product_type.TypeName "Product Name",delivers_to.delivers_to
"Deliver locations"
from Product,product_type,delivers_to
where product_type.Serial_no=product.serial_no
```

```
and Product.Product_ID=delivers_to.Product_ID
and Delivers_To.Delivers_To='Jordan';
```

## Output

Product Name	Deliver locations
Lenovo	Jordan
Mac	Jordan
Mac	Jordan

## Views

### Derived product

```
### Derived Product
create view derivedproduct as
select product.product_ID as Product_ID, product.Quantity>0 as
Availablity,sum(cart.amount) as "Number of
sales",avg(ReviewedProducts.rate) as Rating
from product,cart,ReviewedProducts
where product.Product_ID = cart.Product_ID and product.product_id =
ReviewedProducts.product_id
group by product_id
order by Product.product_id;
```

this view has info about the product such as:

- **Availablitiy** which is if the product is available or not
- **Number of sale** is the number of sales of this product for this seller
- **Rating** the average rating depending on the reviews that the product gets

### Average Price

```
create view averageprice as
select product.serial_no,avg(product.price) as AveragePrice
from product, Product_type
where Product.serial_no=product_type.serial_no
group by product.Serial_no
order by product.serial_no;
```

- **avarageprice** is the price of the product based on it's type for example: iphone 8 price for seller a is 100 and for seller b is 200 and they are the only sellers for iphone 8 then the average price of iphone 8 is 150

## Hot Products

```
create view Hot as
select product.Product_ID as HotProduct
from Product,derivedproduct
where DATEDIFF(current_date,product.PublishDate)<120
and derivedproduct.Product_ID=product.Product_ID
and derivedproduct.rating >3.5;
```

- this view will have the products that are hot(age<120days(4 months) and has a rating above 3.5)

## New products

```
create view New as
select product.Product_ID as NewProduct
from Product,derivedproduct
where DATEDIFF(current_date,product.PublishDate)<30
and derivedproduct.Product_ID=product.Product_ID
and derivedproduct.rating >3.5;
```

- this view will have the products that are hot(age<30days(1 month) and has a rating above 3.5)

## Best products of the year

```
create view BestOfYear as
select product.Product_ID as BestOfYearProduct
from Product,derivedproduct
where DATEDIFF(current_date,product.PublishDate)<365
and derivedproduct.Product_ID=product.Product_ID
and derivedproduct.rating >4;
select Product_ID as from Product where
DATEDIFF(current_date,product.PublishDate)<365;
```

- this view will have the products that are hot(age<365days(1 year) and has a rating above 4)

## drop statements

```
drop table available_country,
Bookmark,
cart,
Colors,
customer,
Customer_order,
Delivers_To,
```

```
Delivery_service,  
offer,  
Product,  
realation,  
ReviewedProducts,  
Section,  
Seller,  
share_view_history,  
Sizes,  
Tags,  
Type,  
User_Account,  
ViewedProduct;
```