SVKM's NMIMS

Mukesh Patel School of Technology Management & Engineering

A.Y. 2022 - 23

Course: Database Management Systems

Project Report

Program	B.Tech CS (Cbyer Sec)	
Semester	3rd	
Name of the Project:	Algo Trading	
Details of Project Members		
Batch	Roll No.	Name
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K1	14	Heet Gala
Date of Submission: 31st October, 2022		

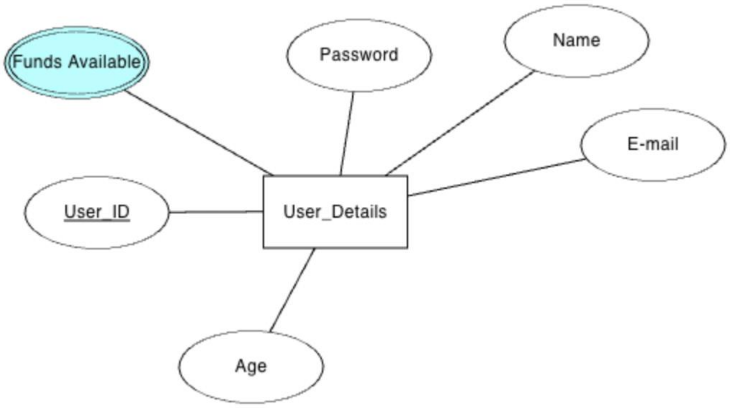
Table of Contents

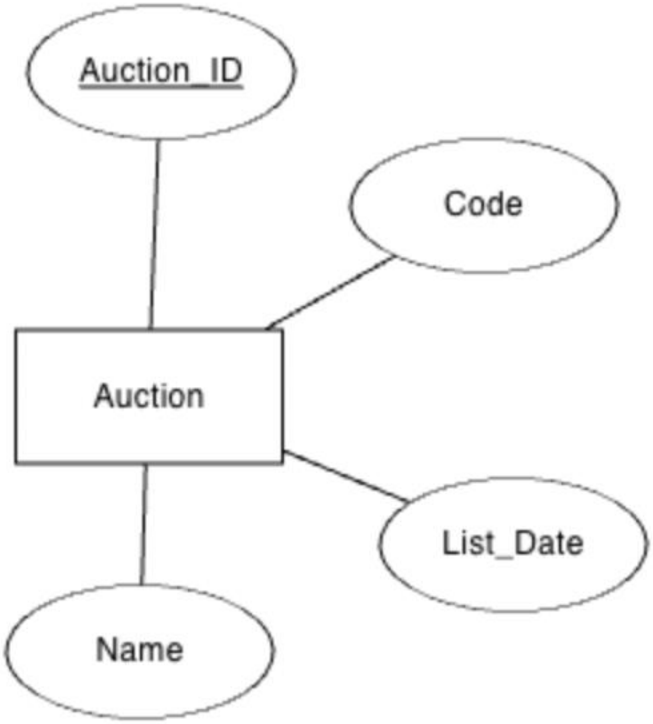
1. Storyline

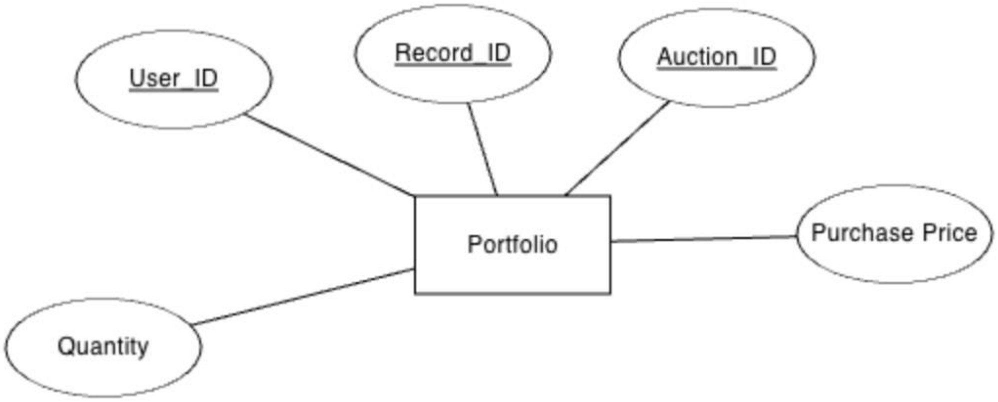
The database contains information on stock auctions, bids, purchases, and sales between users of DC Universe characters.
The database "Algo Trading" contains 5 tables:

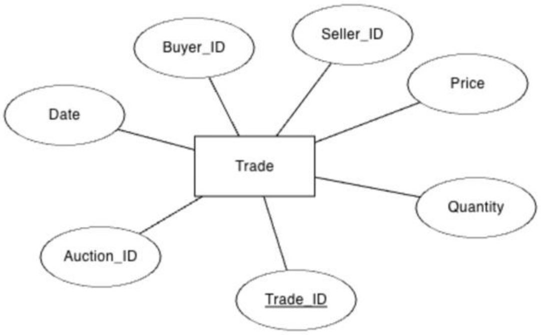
- User Details.
- Auction.
- Bid.
- Trade.
- Portfolio.

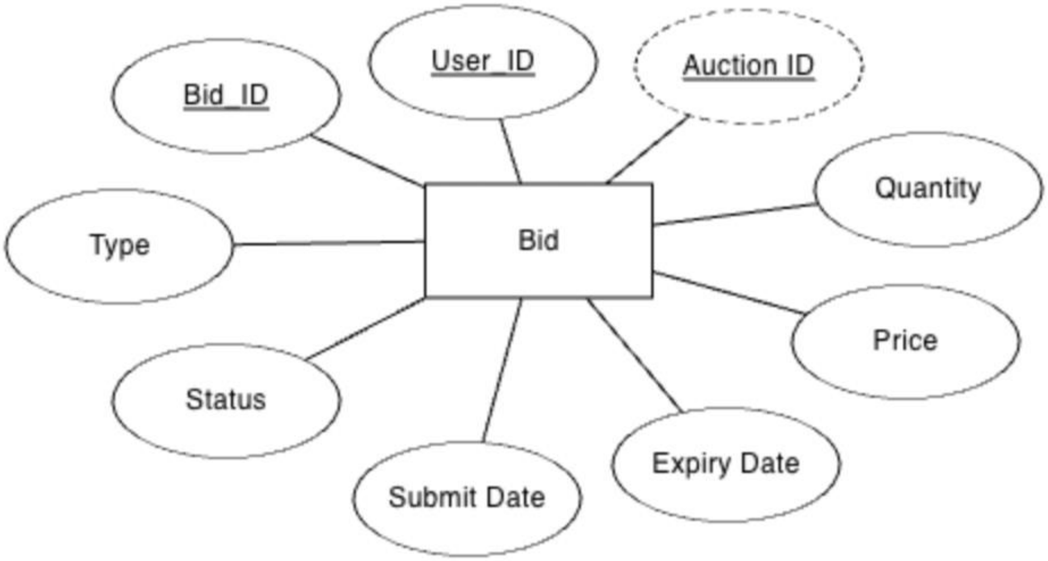
2. Components of Database Design



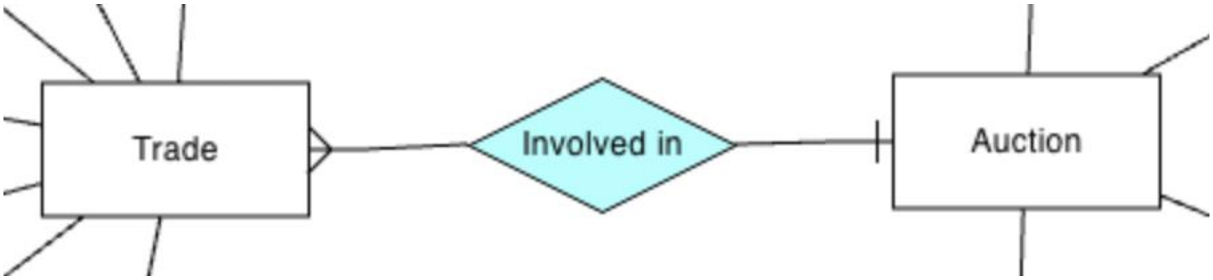


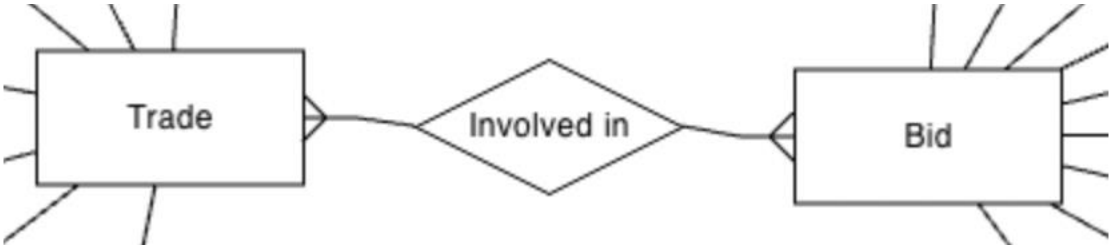

User_ID
Record_ID
Auction_ID
Portfolio
Purchase Price
Quantity

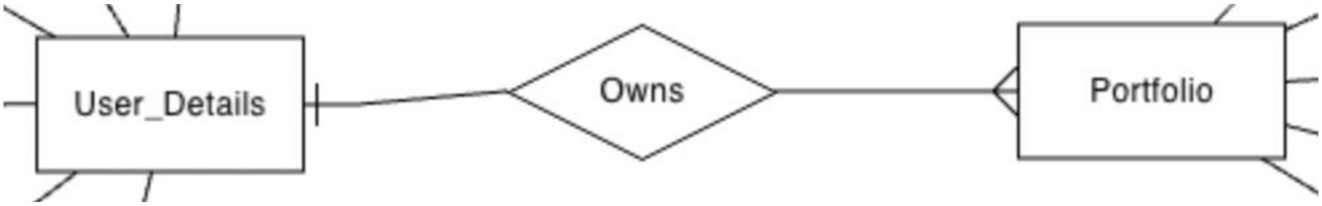

Buyer_ID
Seller_ID
Price
Date
Trade
Quantity
Auction_ID
Trade_ID

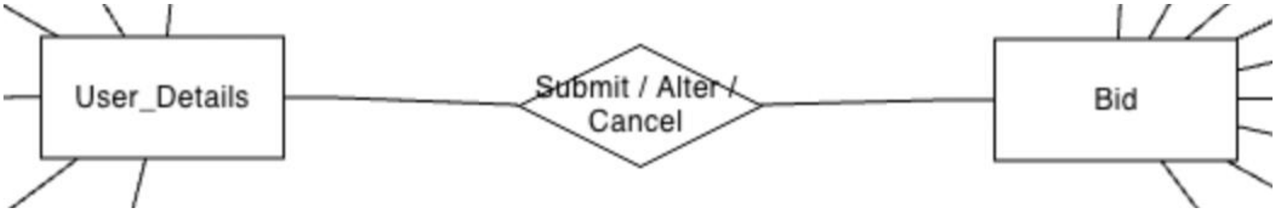

Bid_ID
User_ID
Auction ID
Quantity
Type
Bid
Price
Status
Expiry Date
Submit Date

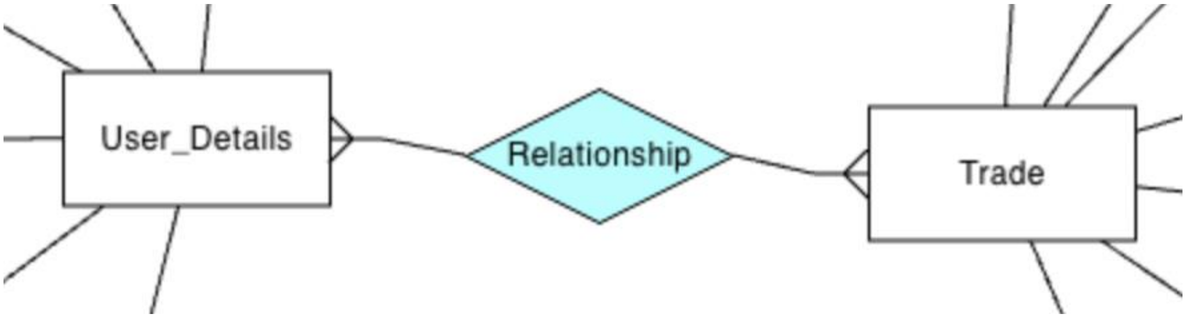
Describe all relationships among various entities. Also, specify the cardinality and participation for all relationships.

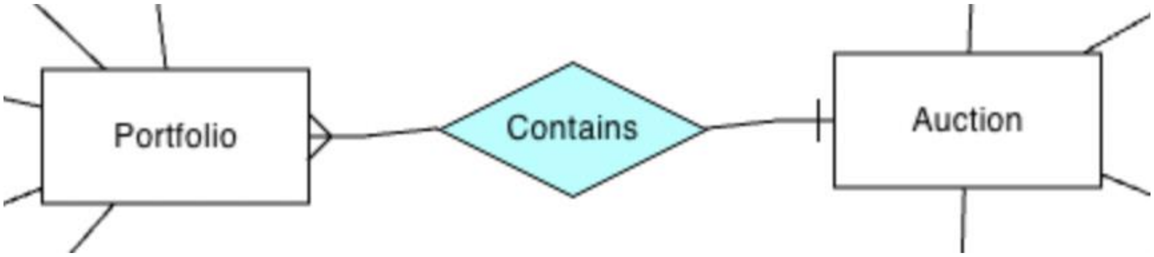


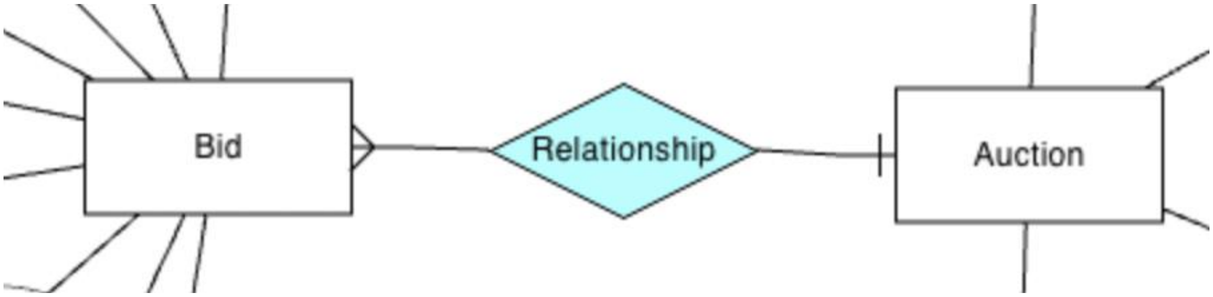




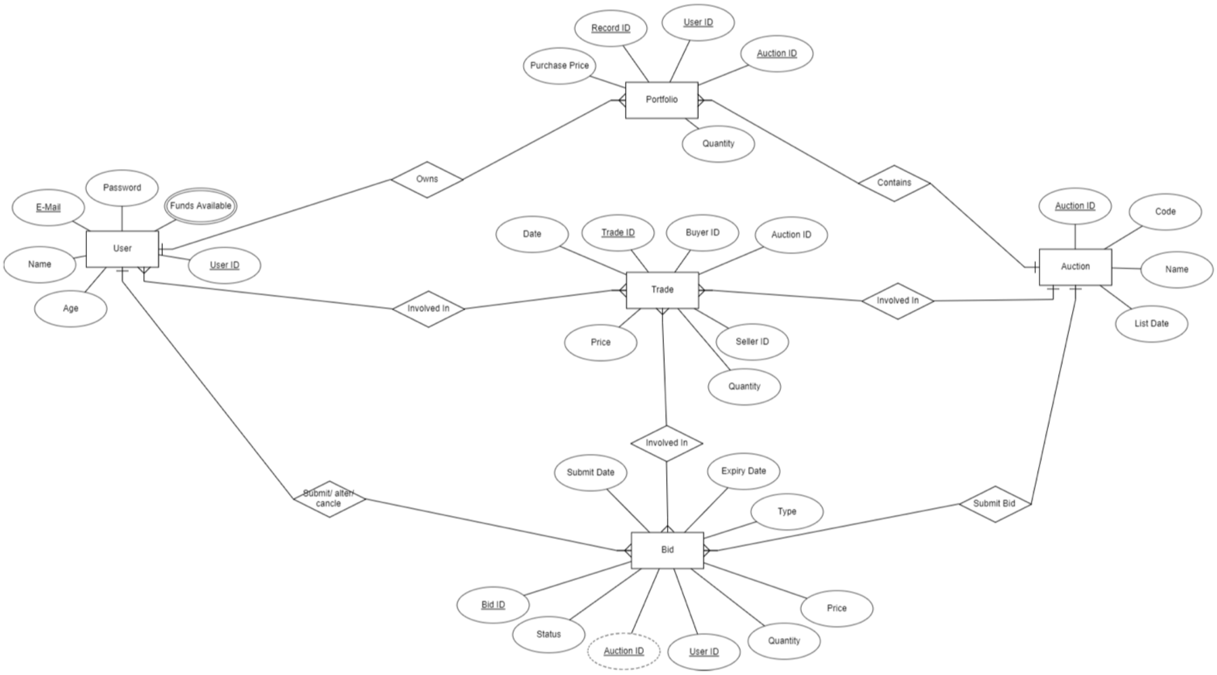





Portfolio
Contains
Auction


Bid
Relationship
Auction

3. Entity Relationship Diagram



4. Relational Model

User_Details (User_ID, User_Name, Age, E-mail, Password, Funds_available)

Auction (Auction_ID, Auction_Code, Stock_Name, Auction_List_Date)

Bid (Bid_ID, Useer_ID, Auction_ID, Price, Quantity, Bid_Type, Bid_Status, Sumit_Date, Expiry_Date)

Portfolio (Record_ID, User_ID, Auction_ID, Purchase_Price, Quantity)

Trade (Trade_ID, Buyer_ID, Seller_ID, Auction_ID, Price, Quantity, Trade_Date)

5. Normalization

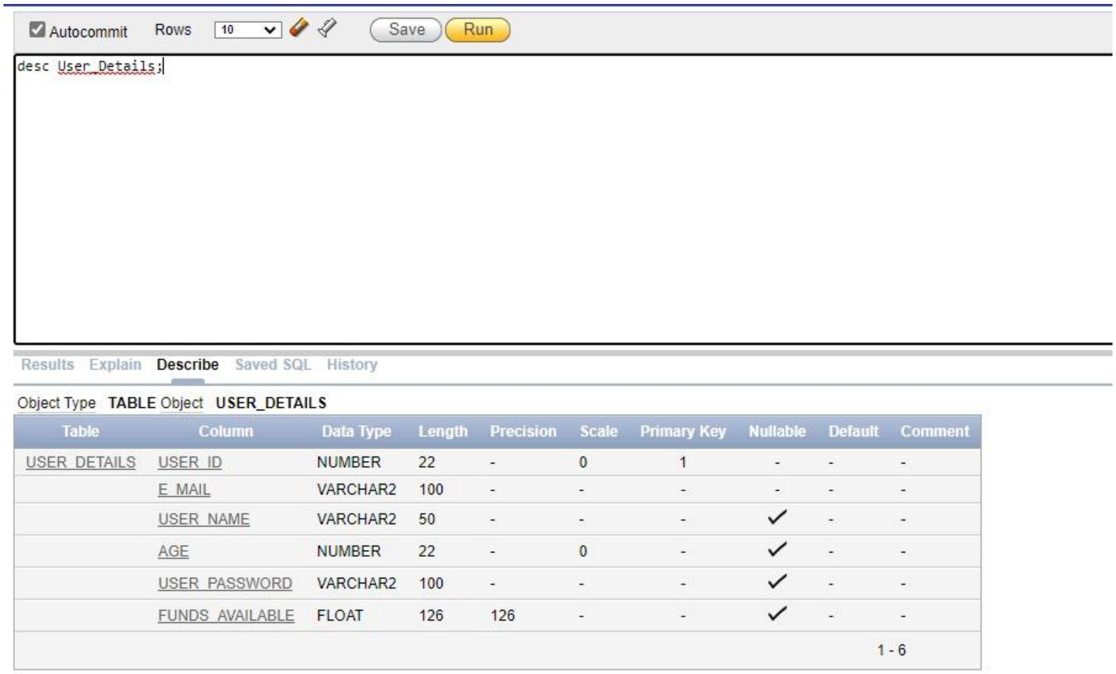
1NF

6. SQL Queries

- ## Create the tables

User_Details

```
create table  User_Details(
User_ID int primary key,
E_Mail varchar(100) not null,
User_Name varchar(50),
age int,
User_Password varchar(100),
Funds_available float);
```



```
desc User_Details;
```

Object Type TABLE Object USER_DETAILS

Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
USER_DETAILS	USER_ID	NUMBER	22	-	0	1	-	-	-
	E_MAIL	VARCHAR2	100	-	-	-	-	-	-
	USER_NAME	VARCHAR2	50	-	-	-	✓	-	-
	AGE	NUMBER	22	-	0	-	✓	-	-
	USER_PASSWORD	VARCHAR2	100	-	-	-	✓	-	-
	FUNDS_AVAILABLE	FLOAT	126	126	-	-	✓	-	-

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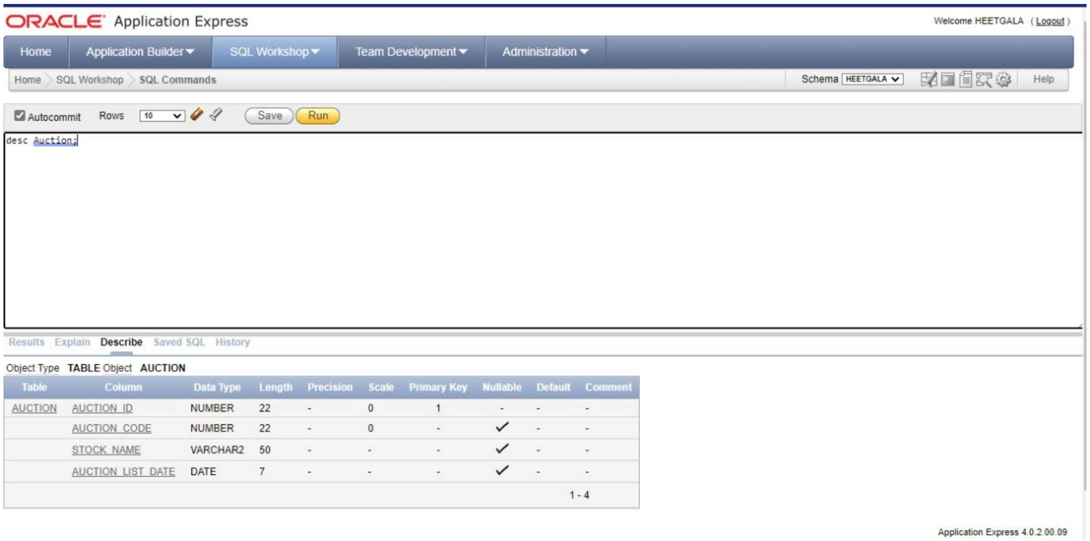
Auction

```
create table Auction(
Auction_ID int primary key,
Auction_Code int,
Stock_Name varchar(50),
Auction_List_Date date);
```



```
desc Auction;
```

Object Type TABLE Object AUCTION

Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
AUCTION	AUCTION_ID	NUMBER	22	-	0	1	-	-	-
	AUCTION_CODE	NUMBER	22	-	0	-	✓	-	-
	STOCK_NAME	VARCHAR2	50	-	-	-	✓	-	-
	AUCTION_LIST_DATE	DATE	7	-	-	-	✓	-	-

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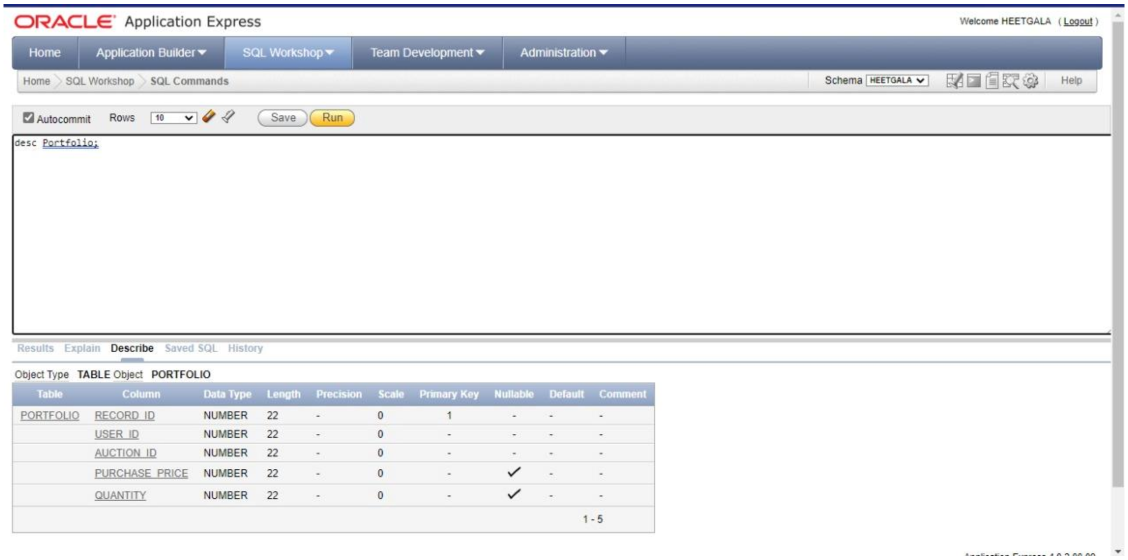
Portfolio

```
create table Portfolio(
Record_ID int primary key,
User_ID int not null,
Auction_ID int not null,
Purchase_Price int,
Quantity int
);

ALTER TABLE Portfolio
ADD FOREIGN KEY(Auction_ID)
REFERENCES Auction(Auction_ID);

ALTER TABLE Portfolio
ADD FOREIGN KEY(User_ID)
REFERENCES User_Details(User_ID);
```



☑ Autocommit Rows 10

```
desc Portfolio;
```

Object Type TABLE Object PORTFOLIO

Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
PORTFOLIO	RECORD_ID	NUMBER	22	-	0	1	-	-	-
	USER_ID	NUMBER	22	-	0	-	-	-	-
	AUCTION_ID	NUMBER	22	-	0	-	-	-	-
	PURCHASE_PRICE	NUMBER	22	-	0	-	✓	-	-
	QUANTITY	NUMBER	22	-	0	-	✓	-	-

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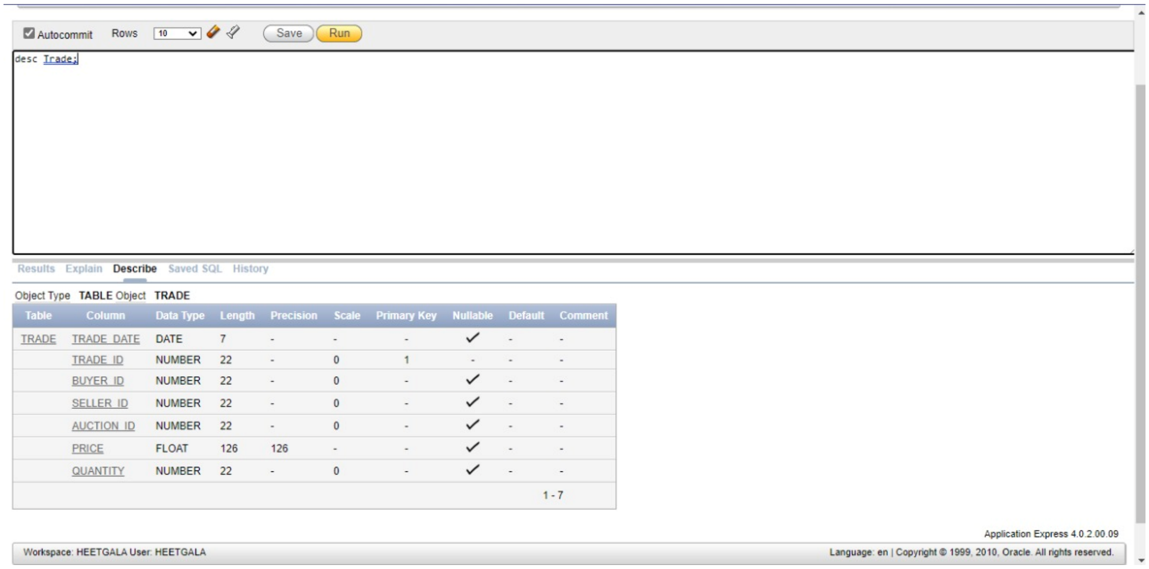
Trade

```
create table  Trade(
Trade_Date date,
Trade_ID int primary key,
Buyer_ID int,
Seller_ID int,
Auction_ID int,
Price float,
Quantity int,
foreign key(Buyer_ID) references User_Details(User_ID),
foreign key(Seller_ID) references User_Details(User_ID));

ALTER TABLE  Trade
ADD FOREIGN KEY(Auction_ID)
REFERENCES Auction(Auction_ID);
```



```
desc Trade;
```

Object Type TABLE Object TRADE

Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
TRADE	TRADE_DATE	DATE	7	-	-	-	✓	-	-
	TRADE_ID	NUMBER	22	-	0	1	-	-	-
	BUYER_ID	NUMBER	22	-	0	-	✓	-	-
	SELLER_ID	NUMBER	22	-	0	-	✓	-	-
	AUCTION_ID	NUMBER	22	-	0	-	✓	-	-
	PRICE	FLOAT	126	126	-	-	✓	-	-
	QUANTITY	NUMBER	22	-	0	-	✓	-	-
									1 - 7

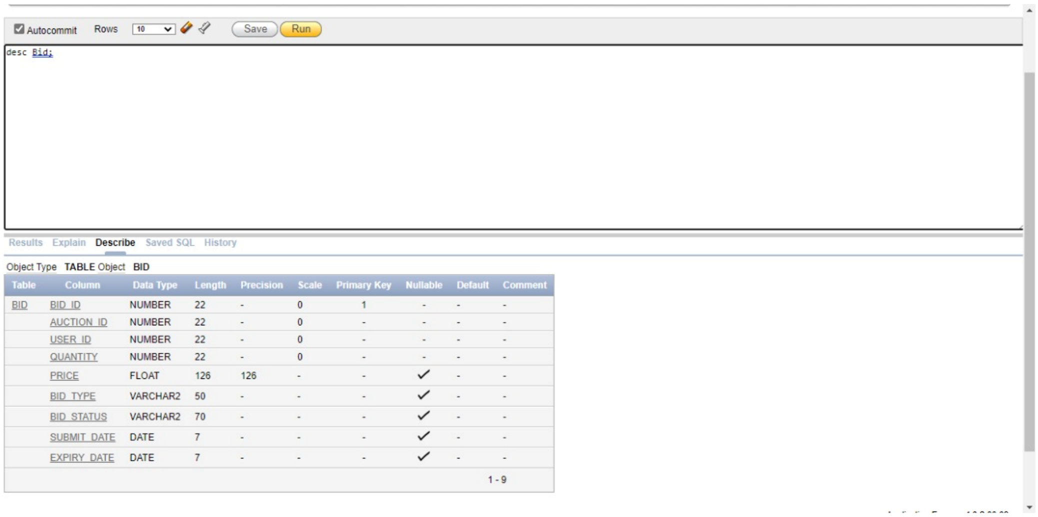
Application Express 4.0.2.00.09

Workspace: HEETGALA User: HEETGALA

Language: en | Copyright © 1999, 2010, Oracle. All rights reserved.

Bid

```
create table  Bid(
Bid_ID int primary key,
Auction_ID int not null,
User_ID int not null,
Quantity int not null,
Price float,
Bid_Type varchar(50),
Bid_Status varchar(70),
Submit_Date date,
Expiry_Date date,
foreign key(Auction_ID) references Auction(Auction_ID),
foreign key(User_ID) references User_Details(User_ID));
```



```
desc Bid;
```

Object Type TABLE Object BID

Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
BID	BID_ID	NUMBER	22	-	0	1	-	-	-
	AUCTION_ID	NUMBER	22	-	0	-	-	-	-
	USER_ID	NUMBER	22	-	0	-	-	-	-
	QUANTITY	NUMBER	22	-	0	-	-	-	-
	PRICE	FLOAT	126	126	-	-	✓	-	-
	BID_TYPE	VARCHAR2	50	-	-	-	✓	-	-
	BID_STATUS	VARCHAR2	70	-	-	-	✓	-	-
	SUBMIT_DATE	DATE	7	-	-	-	✓	-	-
	EXPIRY_DATE	DATE	7	-	-	-	✓	-	-

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Populate the tables

User_Details

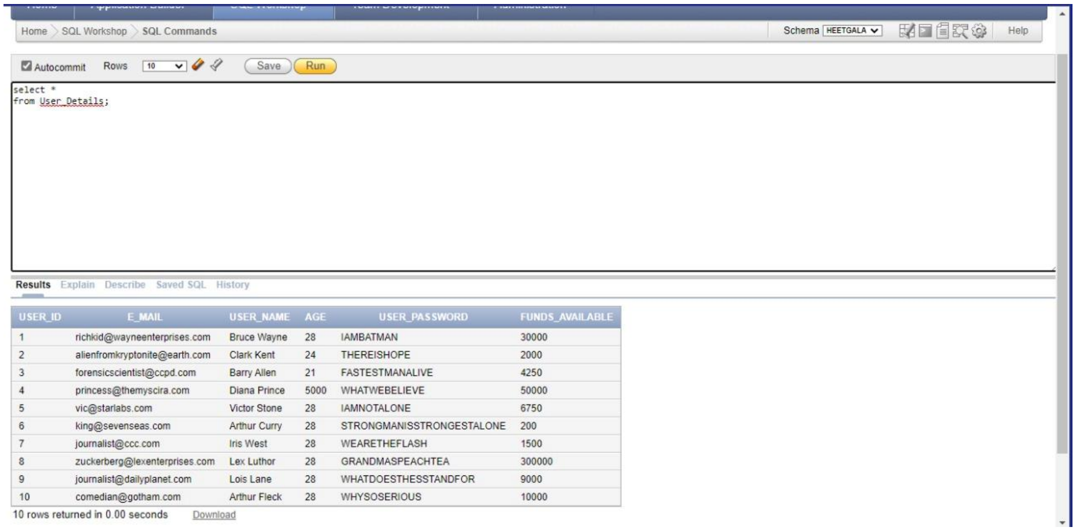
```
Insert into User_Details
values
(001, 'richkid@wayneenterprises.com', 'Bruce Wayne', 28,'IAMBATMAN',
30000);

Insert into User_Details
values
(002,'alienfromkryptonite@earth.com','Clark Kent', 24,'THEREISHOPE',
2000);

Insert into User_Details
values
(003,'forensicscientist@ccpd.com','Barry Allen', 21,'FASTESTMANALIVE',
4250);


Insert into User_Details
values
(004,'princess@themyscira.com','Diana Prince', 5000,'WHATWEBELIEVE',
50000);

Insert into User_Details
values
(005,'vic@starlabs.com','Victor Stone', 28,'IAMNOTALONE', 6750);

Insert into User_Details
values
(006,'king@sevenseas.com','Arthur Curry', 28,'STRONGMANIS-
STRONGESTALONE', 200);
```

```
Insert into User_Details
values
(007,'journalist@ccc.com','Iris West', 28,'WEARETHEFLASH', 1500);
```

```
Insert into User_Details
values
(008,'zuckerberg@lexenterprises.com','Lex Luthor',
28,'GRANDMASPEACHTEA', 300000);
```

```
Insert into User_Details
values
(009,'journalist@dailyplanet.com','Lois Lane', 28,'WHATDOESTHESSTANDFOR', 9000);
```

```
Insert into User_Details
values
(010,'comedian@gotham.com','Arthur Fleck', 28,'WHYSOSERIOUS', 10000);
```



```
select *
from User_Details;
```

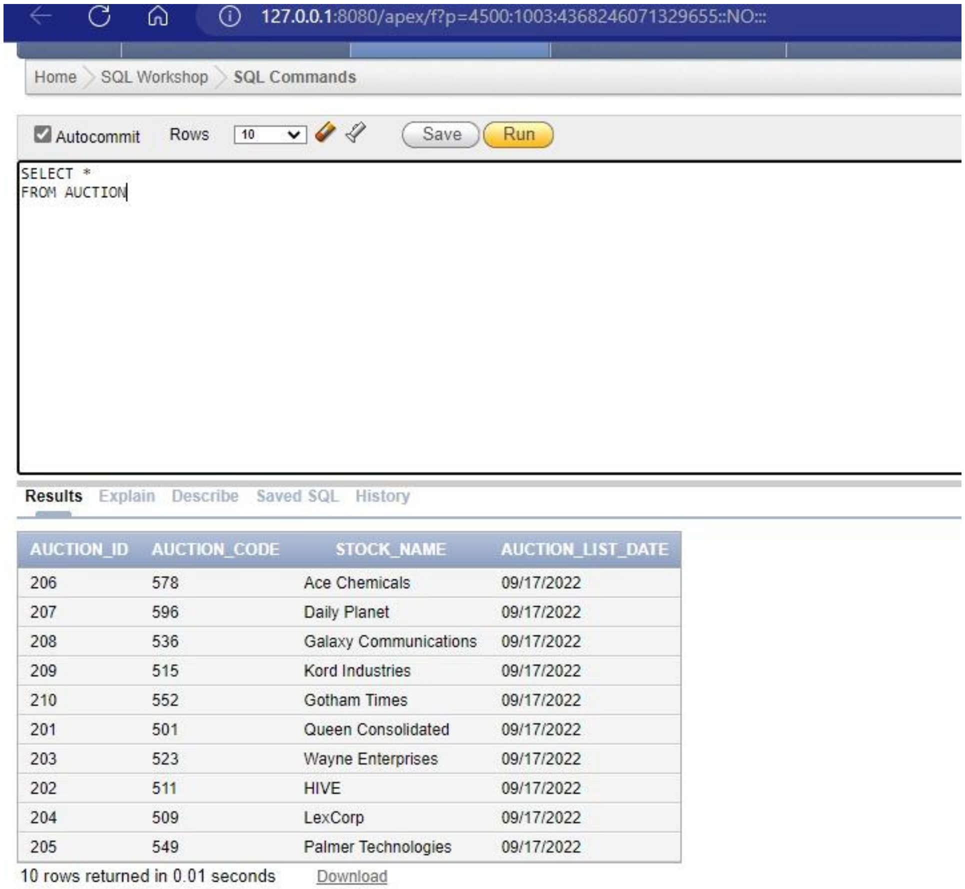
USER_ID	E_MAIL	USER_NAME	AGE	USER_PASSWORD	FUNDS_AVAILABLE
1	richkid@wayneenterprises.com	Bruce Wayne	28	IAMBATMAN	30000
2	alienfromkryptonite@earth.com	Clark Kent	24	THEREISHOPE	2000
3	forensicscientist@ccpd.com	Barry Allen	21	FASTESTMANALIVE	4250
4	princess@themyscira.com	Diana Prince	5000	WHATWEBELIEVE	50000
5	vic@starlabs.com	Victor Stone	28	IAMNOTALONE	6750
6	king@sevenseas.com	Arthur Curry	28	STRONGMANISSTRONGESTALONE	200
7	journalist@ccc.com	Iris West	28	WEARETHEFLASH	1500
8	zuckerberg@lexenterprises.com	Lex Luthor	28	GRANDMASPEACHTEA	300000
9	journalist@dailyplanet.com	Lois Lane	28	WHATDOESTHESSTANDFOR	9000
10	comedian@gotham.com	Arthur Fleck	28	WHYSOSERIOUS	10000

10 rows returned in 0.00 seconds

Auction

```
Insert into Auction
values
(201, 501, "Queen Consolidated", "09.17.2022");

Insert into Auction
values
(202, 511, "HIVE", "09.17.2022");

Insert into Auction
values
(203, 523, "Wayne Enterprises", "09.17.2022");

Insert into Auction
values
(204, 509, "LexCorp", "09.17.2022");

Insert into Auction
values
(205, 549, "Palmer Technologies", "09.17.2022");

Insert into Auction
values
(206, 578, "Ace Chemicals", "09.17.2022");

Insert into Auction
values
(207, 596, "Daily Planet", "09.17.2022");

Insert into Auction
values
(208, 536, "Galaxy Communications", "09.17.2022");
```

```
Insert into Auction
values
(209, 515, "Kord Industries", "09.17.2022");

Insert into Auction
values
(210, 552, "Gotham Times", "09.17.2022");
```



```
SELECT *
FROM AUCTION
```

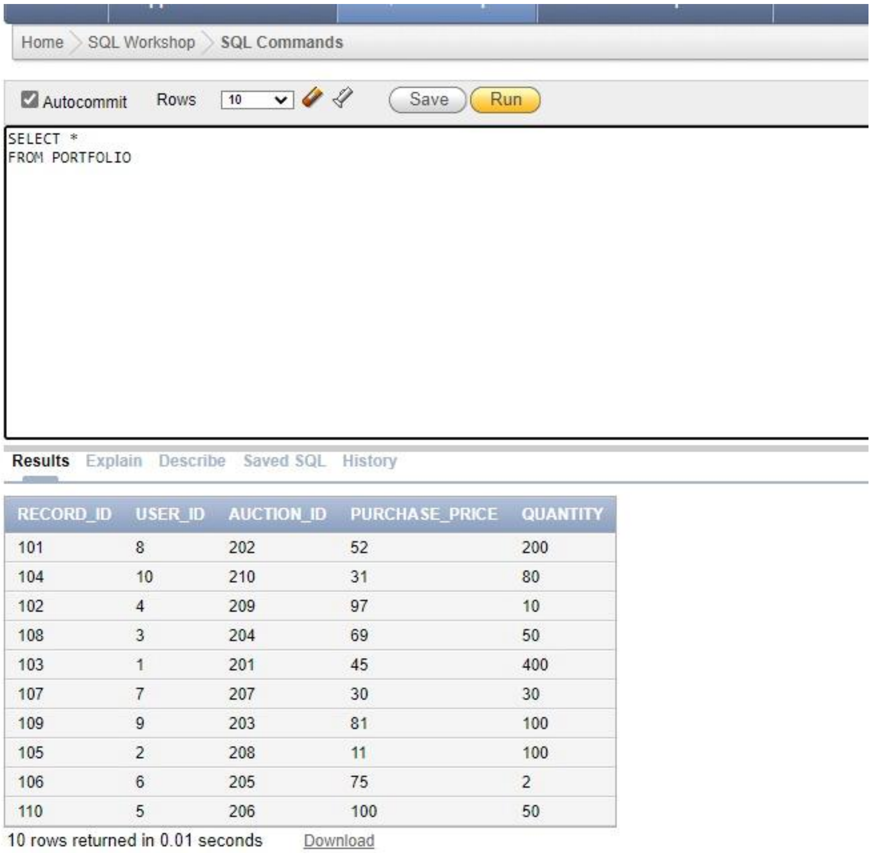
AUCTION_ID	AUCTION_CODE	STOCK_NAME	AUCTION_LIST_DATE
206	578	Ace Chemicals	09/17/2022
207	596	Daily Planet	09/17/2022
208	536	Galaxy Communications	09/17/2022
209	515	Kord Industries	09/17/2022
210	552	Gotham Times	09/17/2022
201	501	Queen Consolidated	09/17/2022
203	523	Wayne Enterprises	09/17/2022
202	511	HIVE	09/17/2022
204	509	LexCorp	09/17/2022
205	549	Palmer Technologies	09/17/2022

10 rows returned in 0.01 seconds

Portfolio

```
Insert into Portfolio
values
(101, 008, 202, 51.80, 200);

Insert into Portfolio
values
(104, 010, 210, 31.20, 80);

Insert into Portfolio
values
(102, 004, 209, 97.30, 10);

Insert into Portfolio
values
(108, 003, 204, 68.90, 50);

Insert into Portfolio
values
(103, 001, 201, 45.20, 400);

Insert into Portfolio
values
(107, 007, 207, 29.70, 30);

Insert into Portfolio
values
(109, 009, 203, 81.20, 100);

Insert into Portfolio
values
(105, 002, 208, 11.20, 100);
```

```
Insert into Portfolio
values
(106, 006, 205, 74.50, 2);

Insert into Portfolio
values
(110, 005, 206, 100, 50);
```



```
SELECT *
FROM PORTFOLIO
```

RECORD_ID	USER_ID	AUCTION_ID	PURCHASE_PRICE	QUANTITY
101	8	202	52	200
104	10	210	31	80
102	4	209	97	10
108	3	204	69	50
103	1	201	45	400
107	7	207	30	30
109	9	203	81	100
105	2	208	11	100
106	6	205	75	2
110	5	206	100	50

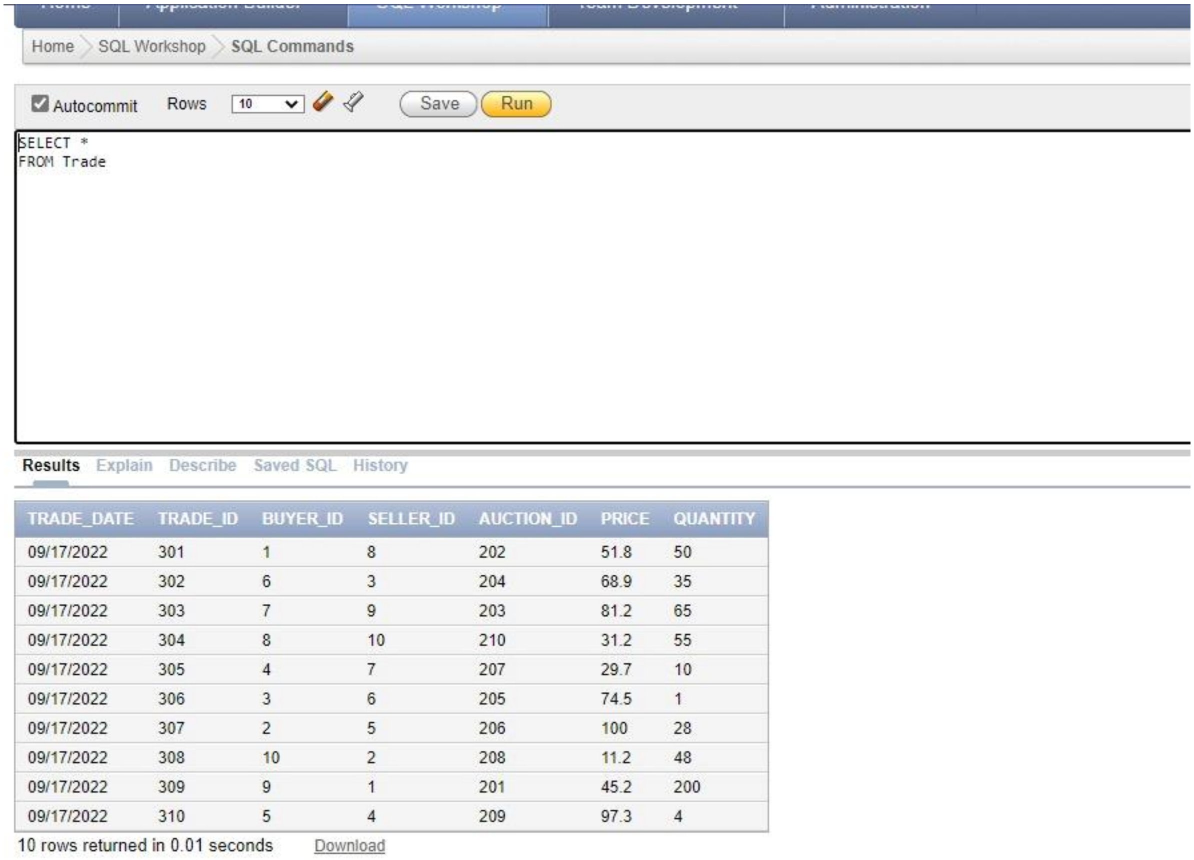
10 rows returned in 0.01 seconds

Trade

```
Insert into Trade
values
('09.17.2022', 301, 001, 008, 202, 51.80, 50);

Insert into Trade
values
('09.17.2022', 302, 006, 003, 204, 68.90, 35);

Insert into Trade
values
('09.17.2022', 303, 007, 009, 203, 81.20, 65);

Insert into Trade
values
('09.17.2022', 304, 008, 010, 210, 31.20, 55);

Insert into Trade
values
('09.17.2022', 305, 004, 007, 207, 29.70, 10);

Insert into Trade
values
('09.17.2022', 306, 003, 006, 205, 74.50, 1);

Insert into Trade
values
('09.17.2022', 307, 002, 005, 206, 100, 28);

Insert into Trade
values
('09.17.2022', 308, 010, 002, 208, 11.20, 48);
```

Insert into Trade
values
('09.17.2022', 309, 009, 001, 201, 45.20, 200);

Insert into Trade
values
('09.17.2022', 310, 005, 004, 209, 97.30, 4);



```
SELECT *
FROM Trade
```

TRADE_DATE	TRADE_ID	BUYER_ID	SELLER_ID	AUCTION_ID	PRICE	QUANTITY
09/17/2022	301	1	8	202	51.8	50
09/17/2022	302	6	3	204	68.9	35
09/17/2022	303	7	9	203	81.2	65
09/17/2022	304	8	10	210	31.2	55
09/17/2022	305	4	7	207	29.7	10
09/17/2022	306	3	6	205	74.5	1
09/17/2022	307	2	5	206	100	28
09/17/2022	308	10	2	208	11.2	48
09/17/2022	309	9	1	201	45.2	200
09/17/2022	310	5	4	209	97.3	4

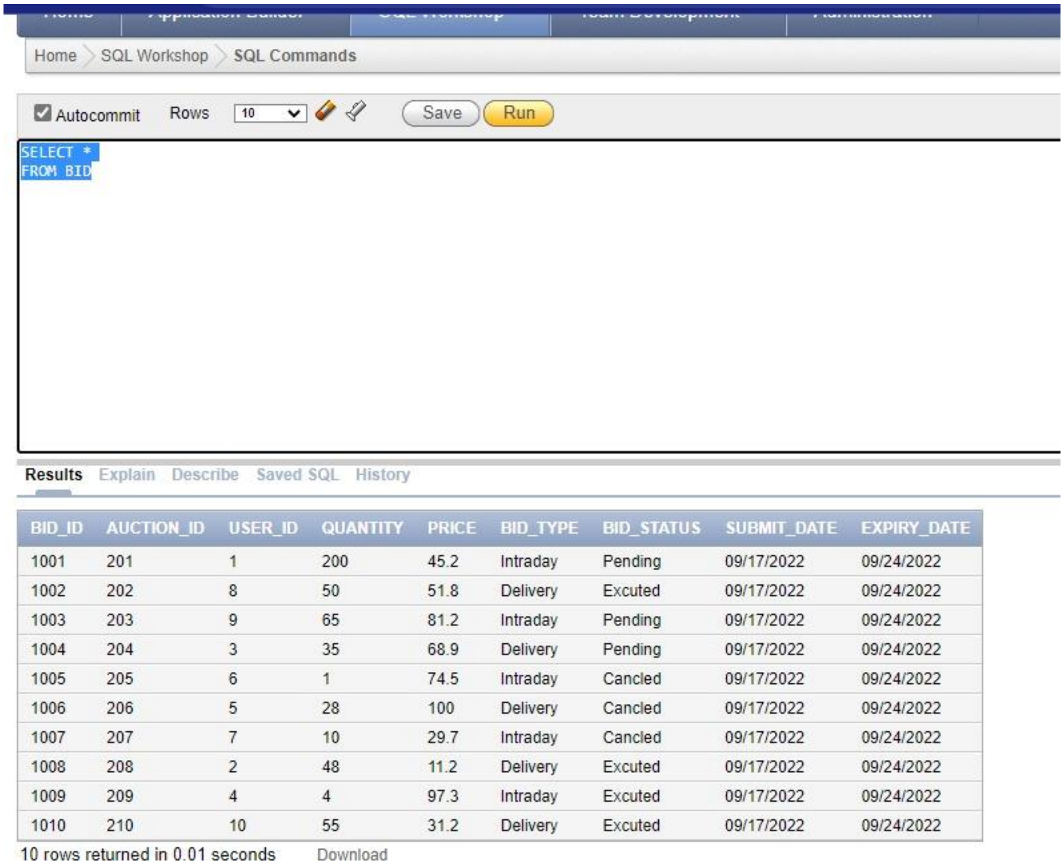
10 rows returned in 0.01 seconds

Bid

```
Insert into Bid
values
(1001, 201, 001, 200, 45.20, 'Intraday', 'Pending', '09.17.2022', '09.24.2022');

Insert into Bid
values
(1002, 202, 008, 50, 51.80, 'Delivery', 'Excuted', '09.17.2022', '09.24.2022');

Insert into Bid
values
(1003, 203, 009, 65, 81.20, 'Intraday', 'Pending', '09.17.2022', '09.24.2022');

Insert into Bid
values
(1004, 204, 003, 35, 68.90, 'Delivery', 'Pending', '09.17.2022', '09.24.2022');

Insert into Bid
values
(1005, 205, 006, 1, 74.50, 'Intraday', 'Cancled', '09.17.2022', '09.24.2022');

Insert into Bid
values
(1006, 206, 005, 28, 100, 'Delivery', 'Cancled', '09.17.2022', '09.24.2022');

Insert into Bid
values
(1007, 207, 007, 10, 29.70, 'Intraday', 'Cancled', '09.17.2022', '09.24.2022');

Insert into Bid
values
(1008, 208, 002, 48, 11.20, 'Delivery', 'Excuted', '09.17.2022', '09.24.2022');
```

Insert into Bid
values
(1009, 209, 004, 4, 97.30, 'Intraday', 'Excuted', '09.17.2022', '09.24.2022');

Insert into Bid
values
(1010, 210, 010, 55, 31.20, 'Delivery', 'Excuted', '09.17.2022', '09.24.2022');



```
SELECT *
FROM BID
```

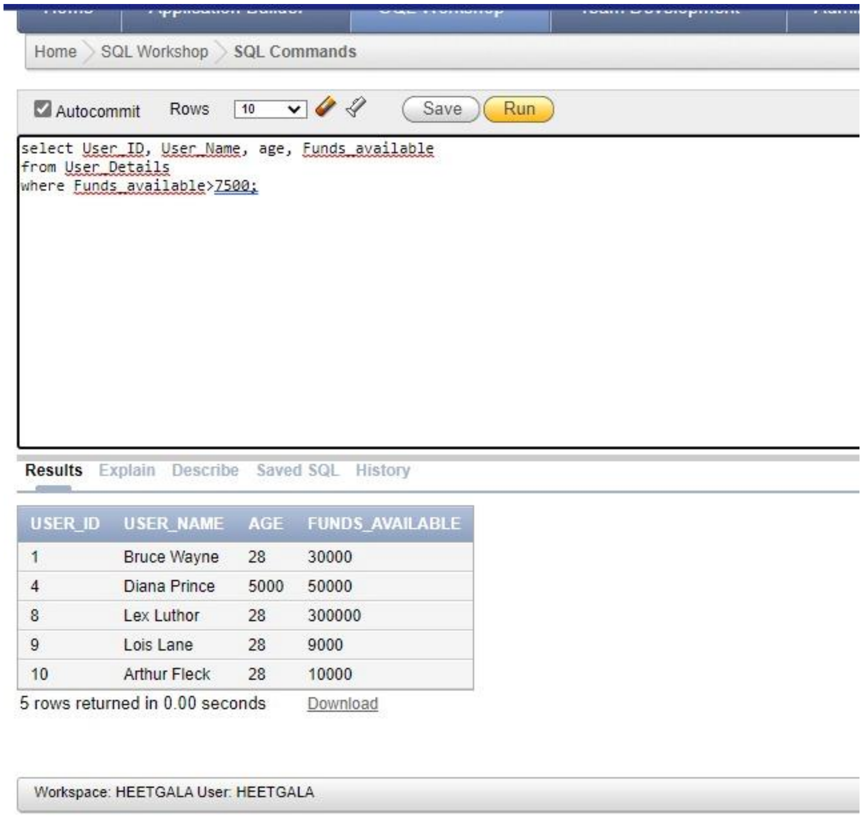
BID_ID	AUCTION_ID	USER_ID	QUANTITY	PRICE	BID_TYPE	BID_STATUS	SUBMIT_DATE	EXPIRY_DATE
1001	201	1	200	45.2	Intraday	Pending	09/17/2022	09/24/2022
1002	202	8	50	51.8	Delivery	Excuted	09/17/2022	09/24/2022
1003	203	9	65	81.2	Intraday	Pending	09/17/2022	09/24/2022
1004	204	3	35	68.9	Delivery	Pending	09/17/2022	09/24/2022
1005	205	6	1	74.5	Intraday	Cancled	09/17/2022	09/24/2022
1006	206	5	28	100	Delivery	Cancled	09/17/2022	09/24/2022
1007	207	7	10	29.7	Intraday	Cancled	09/17/2022	09/24/2022
1008	208	2	48	11.2	Delivery	Excuted	09/17/2022	09/24/2022
1009	209	4	4	97.3	Intraday	Excuted	09/17/2022	09/24/2022
1010	210	10	55	31.2	Delivery	Excuted	09/17/2022	09/24/2022

10 rows returned in 0.01 seconds

- # SQL Queries

1. **Select user-id, name, age and funds available of all the users who have more than 7500 funds available**

select User_ID, User_Name, age, Funds_available
from User_Details
where Funds_available>7500;



```
select User_ID, User_Name, age, Funds_available
from User_Details
where Funds_available>7500;
```

USER_ID	USER_NAME	AGE	FUNDS_AVAILABLE
1	Bruce Wayne	28	30000
4	Diana Prince	5000	50000
8	Lex Luthor	28	300000
9	Lois Lane	28	9000
10	Arthur Fleck	28	10000

5 rows returned in 0.00 seconds

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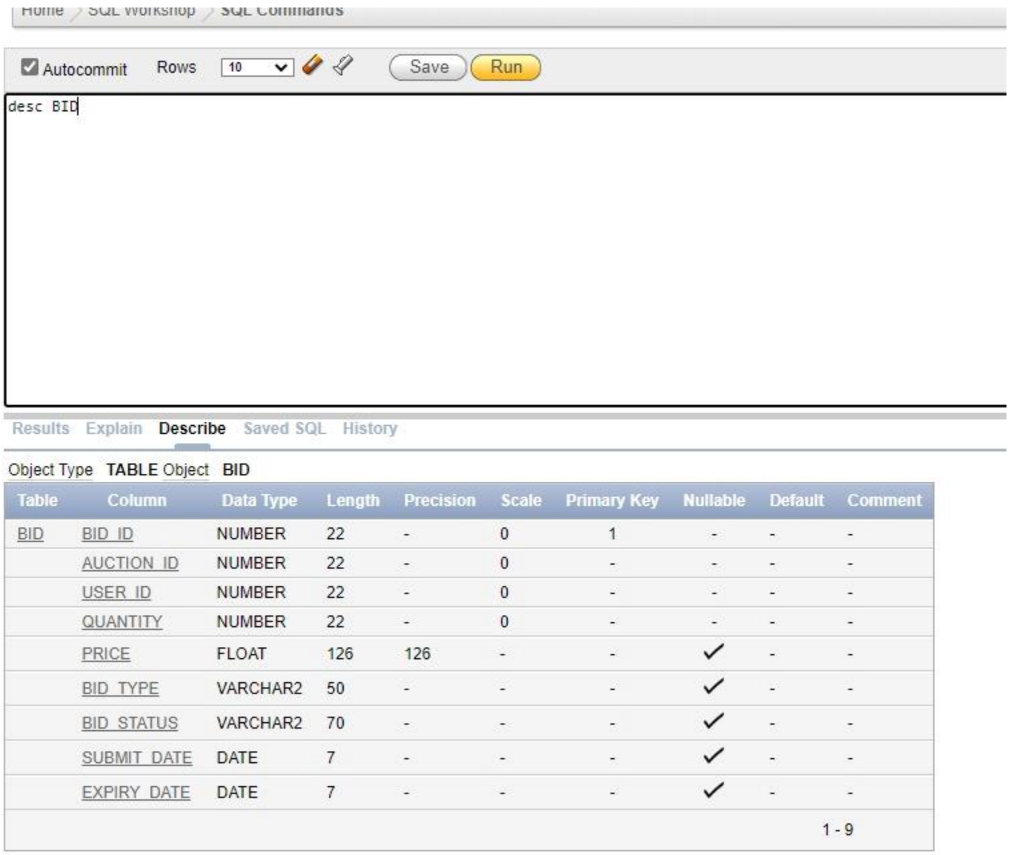
2. Show the structure of Bid table

desc BID



☑ Autocommit Rows 10

```
desc BID
```

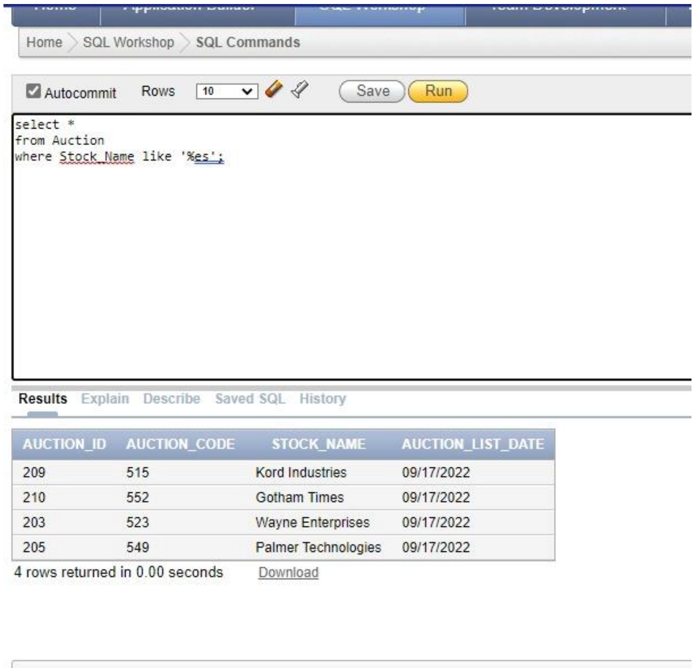
Object Type TABLE Object BID

Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
BID	BID_ID	NUMBER	22	-	0	1	-	-	-
	AUCTION_ID	NUMBER	22	-	0	-	-	-	-
	USER_ID	NUMBER	22	-	0	-	-	-	-
	QUANTITY	NUMBER	22	-	0	-	-	-	-
	PRICE	FLOAT	126	126	-	-	✓	-	-
	BID_TYPE	VARCHAR2	50	-	-	-	✓	-	-
	BID_STATUS	VARCHAR2	70	-	-	-	✓	-	-
	SUBMIT_DATE	DATE	7	-	-	-	✓	-	-
	EXPIRY_DATE	DATE	7	-	-	-	✓	-	-

1 - 9

3. **Show all the details of Stocks whose names end with "es"**

   select *
   from Auction
   where Stock_Name like '%es';



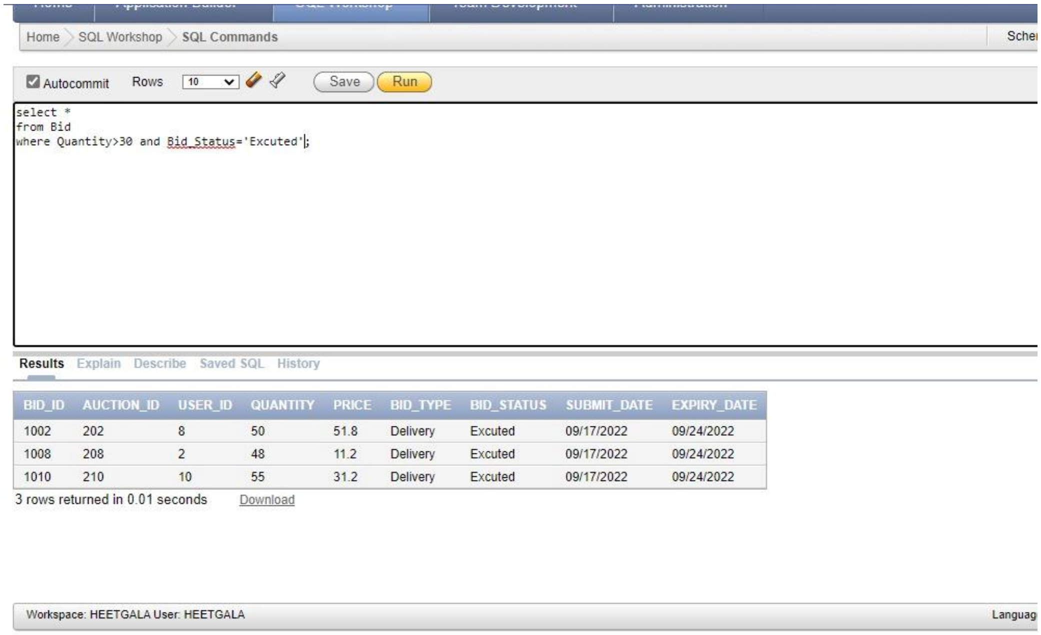
```
select *
from Auction
where Stock_Name like '%es';
```

AUCTION_ID	AUCTION_CODE	STOCK_NAME	AUCTION_LIST_DATE
209	515	Kord Industries	09/17/2022
210	552	Gotham Times	09/17/2022
203	523	Wayne Enterprises	09/17/2022
205	549	Palmer Technologies	09/17/2022

4 rows returned in 0.00 seconds

4. **Show the bids that have been executed and where the quantity is greater than 30**

   select *
   from Bid
   where Quantity>30 and Bid_Status='Excuted';



```
select *
from Bid
where Quantity>30 and Bid_Status='Excuted';
```

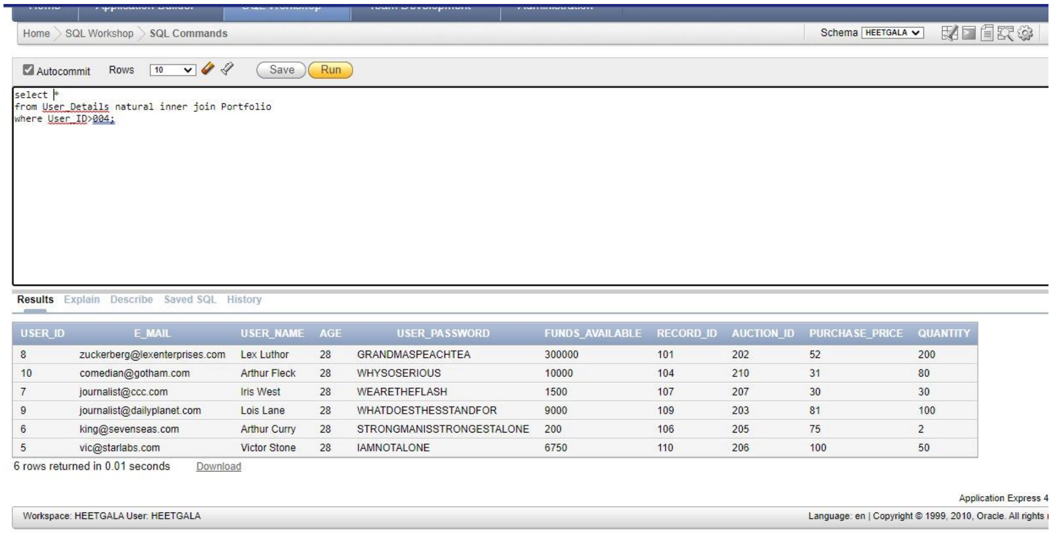
BID_ID	AUCTION_ID	USER_ID	QUANTITY	PRICE	BID_TYPE	BID_STATUS	SUBMIT_DATE	EXPIRY_DATE
1002	202	8	50	51.8	Delivery	Excuted	09/17/2022	09/24/2022
1008	208	2	48	11.2	Delivery	Excuted	09/17/2022	09/24/2022
1010	210	10	55	31.2	Delivery	Excuted	09/17/2022	09/24/2022

3 rows returned in 0.01 seconds

Workspace: HEETGALA User: HEETGALA

5. **Show the details of the users and their portfolios if their user ids are greater than 004**

select *
from User_Details natural inner join Portfolio
where User_ID>004;



```
select *
from User_Details natural inner join Portfolio
where User_ID>004;
```

USER_ID	E_MAIL	USER_NAME	AGE	USER_PASSWORD	FUNDS_AVAILABLE	RECORD_ID	AUCTION_ID	PURCHASE_PRICE	QUANTITY
8	zuckerberg@lexenterprises.com	Lex Luthor	28	GRANDMASPEACHTEA	300000	101	202	52	200
10	comedian@gotham.com	Arthur Fleck	28	WHYSOSERIOUS	10000	104	210	31	80
7	journalist@ccc.com	Iris West	28	WEARETHEFLASH	1500	107	207	30	30
9	journalist@dailyplanet.com	Lois Lane	28	WHATDOESTHESSTANDFOR	9000	109	203	81	100
6	king@sevenseas.com	Arthur Curry	28	STRONGMANISSTRONGESTALONE	200	106	205	75	2
5	vic@starlabs.com	Victor Stone	28	IAMNOTALONE	6750	110	206	100	50

6 rows returned in 0.01 seconds

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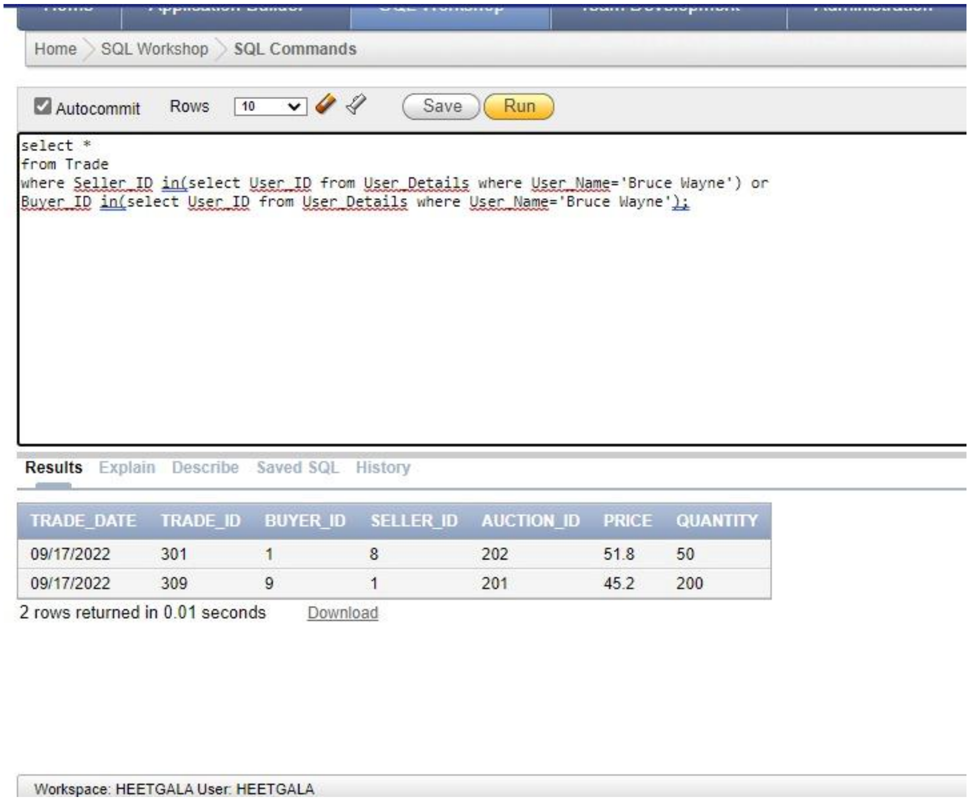
Language: en | Copyright © 1999, 2010, Oracle. All rights

6. **Show the trade details where the user Bruce Wayne bought or sold any stocks**

```
select *
from Trade
where Seller_ID in(select User_ID from User_Details where User_Name='Bruce
Wayne') or
Buyer_ID in(select User_ID from User_Details where User_Name='Bruce Wayne');
```



```
select *
from Trade
where Seller_ID in(select User_ID from User_Details where User_Name='Bruce Wayne') or
Buyer_ID in(select User_ID from User_Details where User_Name='Bruce Wayne');
```

TRADE_DATE	TRADE_ID	BUYER_ID	SELLER_ID	AUCTION_ID	PRICE	QUANTITY
09/17/2022	301	1	8	202	51.8	50
09/17/2022	309	9	1	201	45.2	200

2 rows returned in 0.01 seconds Download

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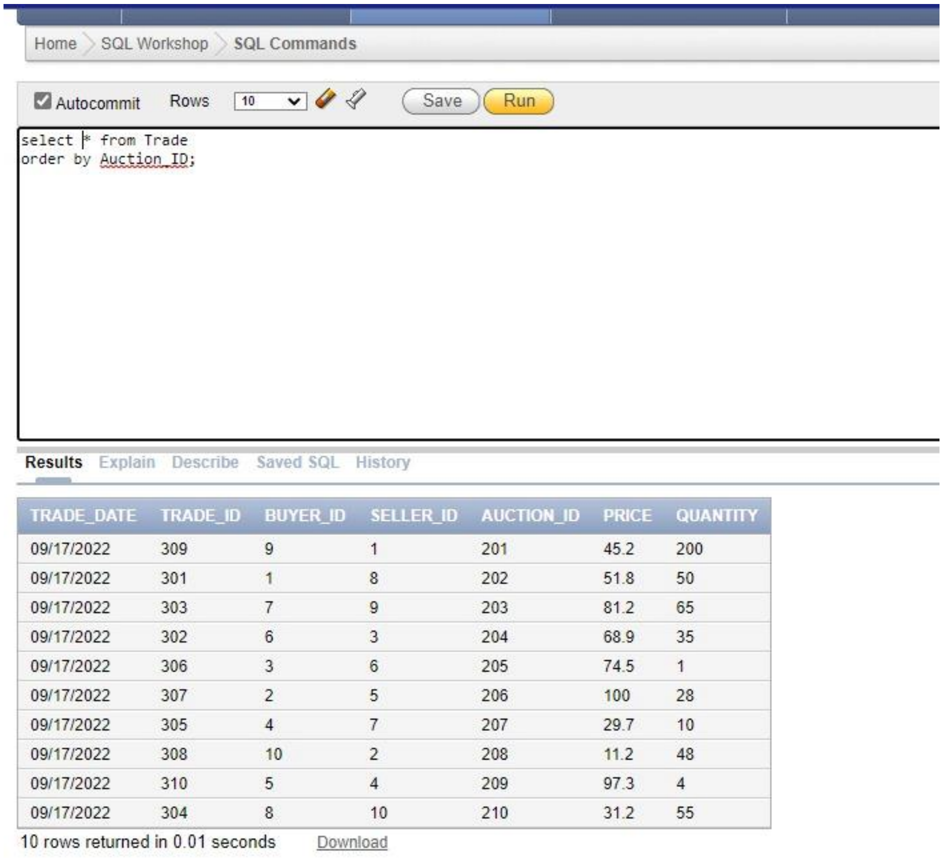
7. **Show all the details of trade ordered by their Auction IDS**

```
select * from Trade
order by Auction_ID;
```


Home > SQL Workshop > SQL Commands
☑ Autocommit
Rows 10
Save
Run
Results Explain Describe Saved SQL History
Download

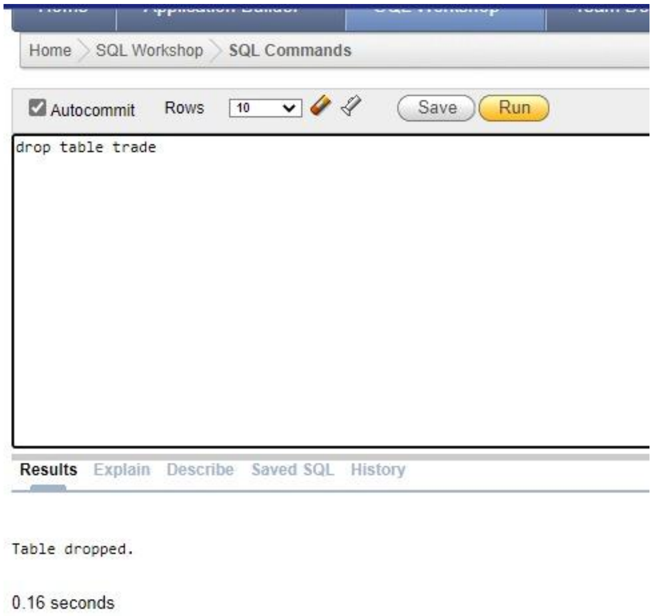
```
select * from Trade
order by Auction_ID;
```

TRADE_DATE	TRADE_ID	BUYER_ID	SELLER_ID	AUCTION_ID	PRICE	QUANTITY
09/17/2022	309	9	1	201	45.2	200
09/17/2022	301	1	8	202	51.8	50
09/17/2022	303	7	9	203	81.2	65
09/17/2022	302	6	3	204	68.9	35
09/17/2022	306	3	6	205	74.5	1
09/17/2022	307	2	5	206	100	28
09/17/2022	305	4	7	207	29.7	10
09/17/2022	308	10	2	208	11.2	48
09/17/2022	310	5	4	209	97.3	4
09/17/2022	304	8	10	210	31.2	55

10 rows returned in 0.01 seconds

8. Drop the table trade

drop table trade



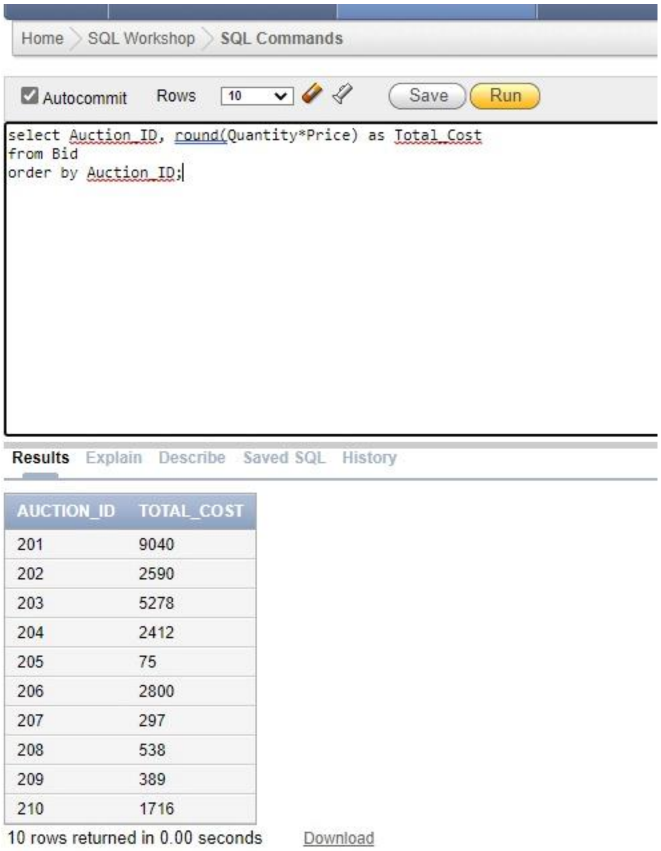
```
drop table trade
```

```
Table dropped.

0.16 seconds
```

9. **Show the total money being spent in buying each stock**

   select Auction_ID, round(Quantity*Price) as Total_Cost
   from Bid
   order by Auction_ID;



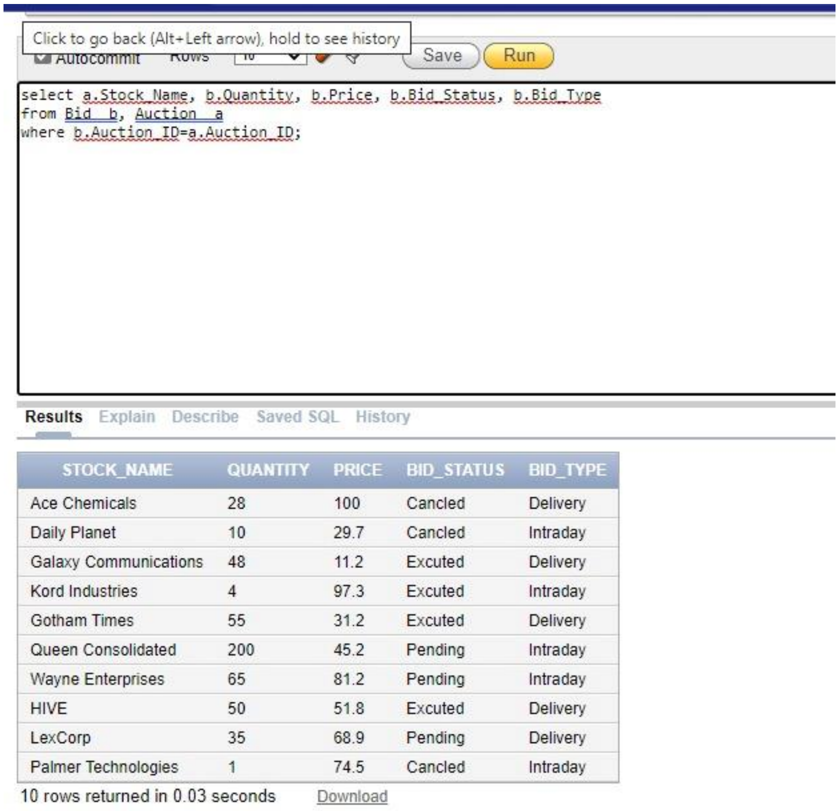
```
select Auction_ID, round(Quantity*Price) as Total_Cost
from Bid
order by Auction_ID;
```

AUCTION_ID	TOTAL_COST
201	9040
202	2590
203	5278
204	2412
205	75
206	2800
207	297
208	538
209	389
210	1716

10 rows returned in 0.00 seconds

10. Show the Stock Name, Bid Staus, Type, Quantity and Price

```
select a.Stock_Name, b.Quantity, b.Price, b.Bid_Status, b.Bid_Type
from Bid  b, Auction  a
where b.Auction_ID=a.Auction_ID;
```



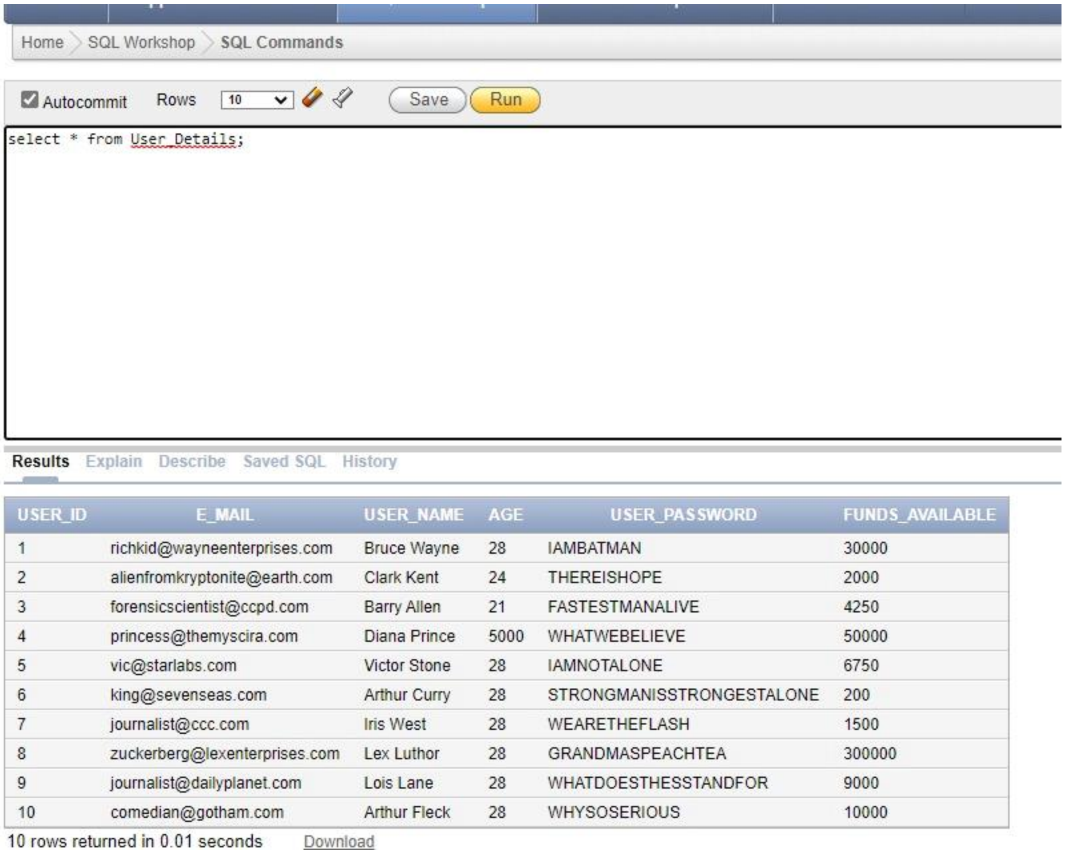
```
select a.Stock_Name, b.Quantity, b.Price, b.Bid_Status, b.Bid_Type
from Bid  b, Auction  a
where b.Auction_ID=a.Auction_ID;
```

STOCK_NAME	QUANTITY	PRICE	BID_STATUS	BID_TYPE
Ace Chemicals	28	100	Cancled	Delivery
Daily Planet	10	29.7	Cancled	Intraday
Galaxy Communications	48	11.2	Excuted	Delivery
Kord Industries	4	97.3	Excuted	Intraday
Gotham Times	55	31.2	Excuted	Delivery
Queen Consolidated	200	45.2	Pending	Intraday
Wayne Enterprises	65	81.2	Pending	Intraday
HIVE	50	51.8	Excuted	Delivery
LexCorp	35	68.9	Pending	Delivery
Palmer Technologies	1	74.5	Cancled	Intraday

10 rows returned in 0.03 seconds

11. Show everything from User Details

select * from User_Details;



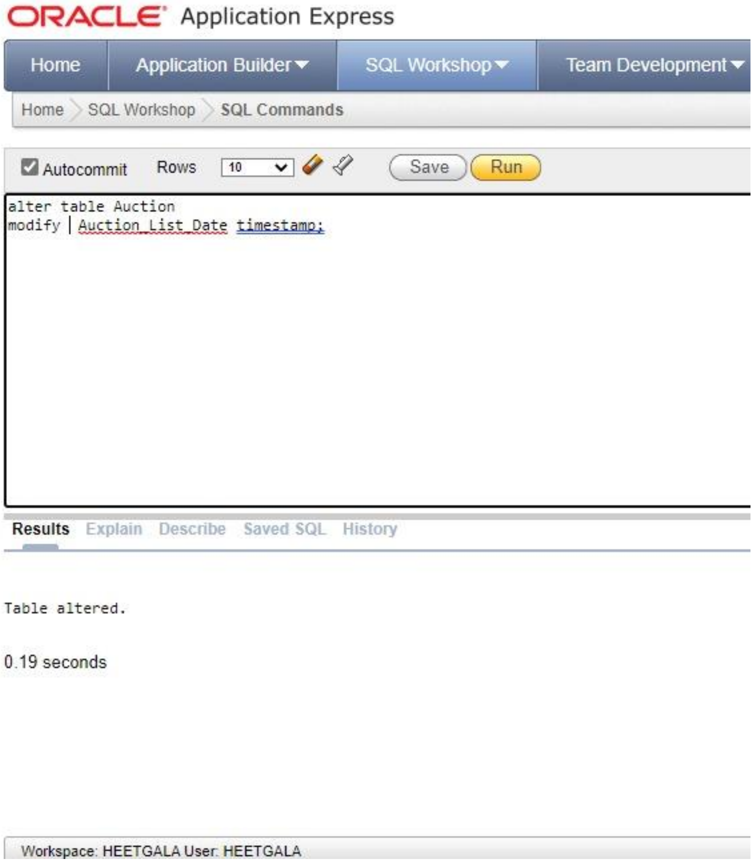
```
select * from User_Details;
```

USER_ID	E_MAIL	USER_NAME	AGE	USER_PASSWORD	FUNDS_AVAILABLE
1	richkid@wayneenterprises.com	Bruce Wayne	28	IAMBATMAN	30000
2	alienfromkryptonite@earth.com	Clark Kent	24	THEREISHOPE	2000
3	forensicscientist@ccpd.com	Barry Allen	21	FASTESTMANALIVE	4250
4	princess@themyscira.com	Diana Prince	5000	WHATWEBELIEVE	50000
5	vic@starlabs.com	Victor Stone	28	IAMNOTALONE	6750
6	king@sevenseas.com	Arthur Curry	28	STRONGMANISSTRONGESTALONE	200
7	journalist@ccc.com	Iris West	28	WEARETHEFLASH	1500
8	zuckerberg@lexenterprises.com	Lex Luthor	28	GRANDMASPEACHTEA	300000
9	journalist@dailyplanet.com	Lois Lane	28	WHATDOESTHESSTANDFOR	9000
10	comedian@gotham.com	Arthur Fleck	28	WHYSOSERIOUS	10000

10 rows returned in 0.01 seconds

12. Change data type of Auction List date from date to datetime

alter table Auction
modify Auction_List_Date timestamp;

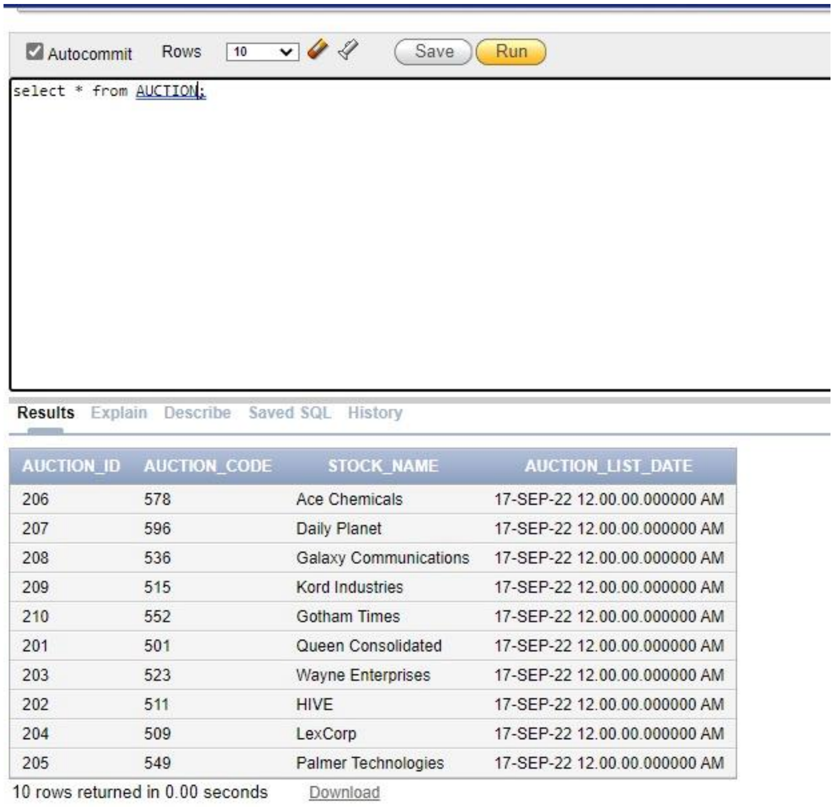


```
alter table Auction
modify Auction_List_Date timestamp;
```

```
Table altered.

0.19 seconds
```

Workspace: HEETGALA User: HEETGALA



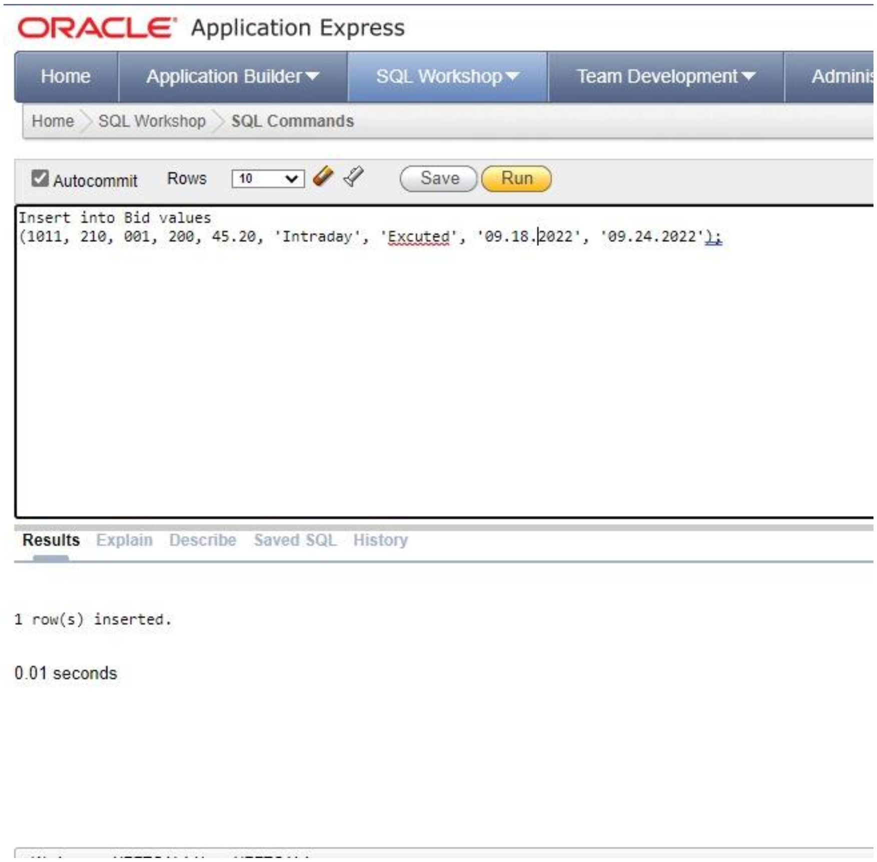
```
select * from AUCTION;
```

AUCTION_ID	AUCTION_CODE	STOCK_NAME	AUCTION_LIST_DATE
206	578	Ace Chemicals	17-SEP-22 12.00.00.000000 AM
207	596	Daily Planet	17-SEP-22 12.00.00.000000 AM
208	536	Galaxy Communications	17-SEP-22 12.00.00.000000 AM
209	515	Kord Industries	17-SEP-22 12.00.00.000000 AM
210	552	Gotham Times	17-SEP-22 12.00.00.000000 AM
201	501	Queen Consolidated	17-SEP-22 12.00.00.000000 AM
203	523	Wayne Enterprises	17-SEP-22 12.00.00.000000 AM
202	511	HIVE	17-SEP-22 12.00.00.000000 AM
204	509	LexCorp	17-SEP-22 12.00.00.000000 AM
205	549	Palmer Technologies	17-SEP-22 12.00.00.000000 AM

10 rows returned in 0.00 seconds

13. Insert a tuple in Bid with Submit_Date=2022-09-18

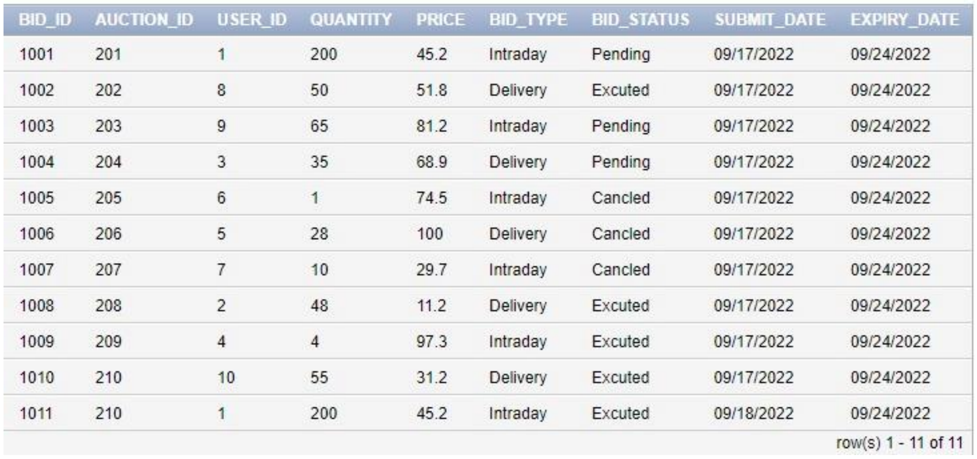
Insert into Bid values
(1011, 210, 001, 200, 45.20, 'Intraday', 'Excuted', '09.18.2022', '09.24.2022');



```
Insert into Bid values
(1011, 210, 001, 200, 45.20, 'Intraday', 'Excuted', '09.18.2022', '09.24.2022');
```

```
1 row(s) inserted.
```

0.01 seconds

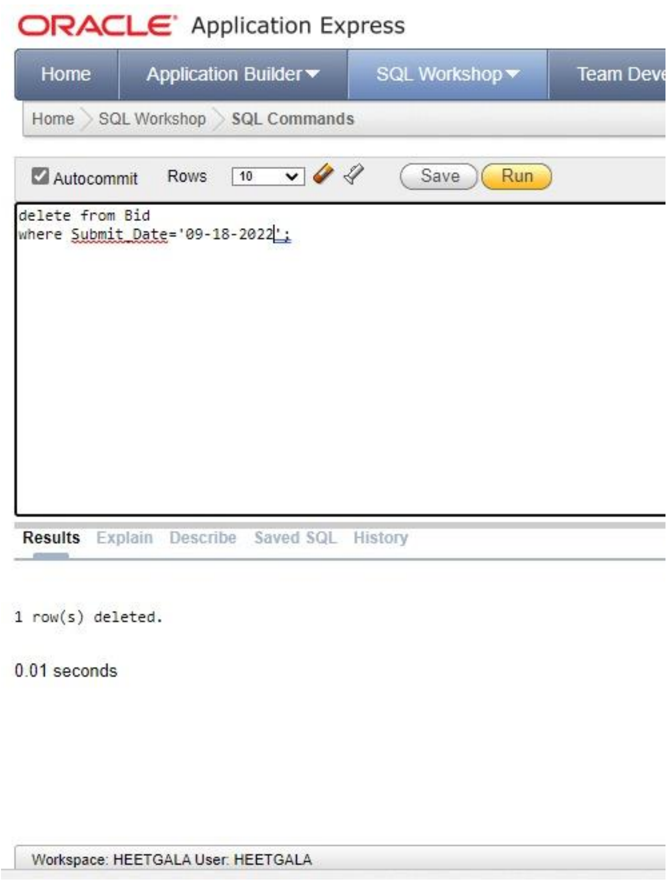


BID_ID	AUCTION_ID	USER_ID	QUANTITY	PRICE	BID_TYPE	BID_STATUS	SUBMIT_DATE	EXPIRY_DATE
1001	201	1	200	45.2	Intraday	Pending	09/17/2022	09/24/2022
1002	202	8	50	51.8	Delivery	Excuted	09/17/2022	09/24/2022
1003	203	9	65	81.2	Intraday	Pending	09/17/2022	09/24/2022
1004	204	3	35	68.9	Delivery	Pending	09/17/2022	09/24/2022
1005	205	6	1	74.5	Intraday	Cancled	09/17/2022	09/24/2022
1006	206	5	28	100	Delivery	Cancled	09/17/2022	09/24/2022
1007	207	7	10	29.7	Intraday	Cancled	09/17/2022	09/24/2022
1008	208	2	48	11.2	Delivery	Excuted	09/17/2022	09/24/2022
1009	209	4	4	97.3	Intraday	Excuted	09/17/2022	09/24/2022
1010	210	10	55	31.2	Delivery	Excuted	09/17/2022	09/24/2022
1011	210	1	200	45.2	Intraday	Excuted	09/18/2022	09/24/2022

row(s) 1 - 11 of 11

14. Delete the tuple that you added

```
delete from Bid
where Submit_Date='09-18-2022';
```

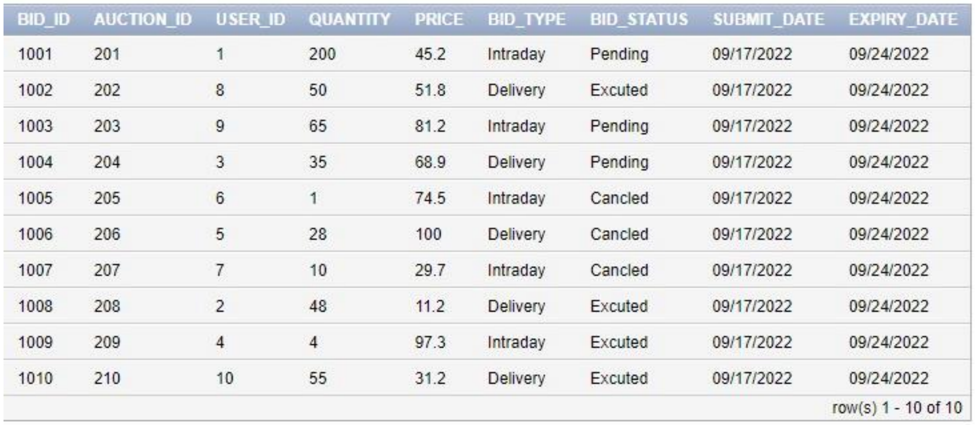


```
delete from Bid
where Submit_Date='09-18-2022';
```

```
1 row(s) deleted.
```

0.01 seconds

Workspace: HEETGALA User: HEETGALA

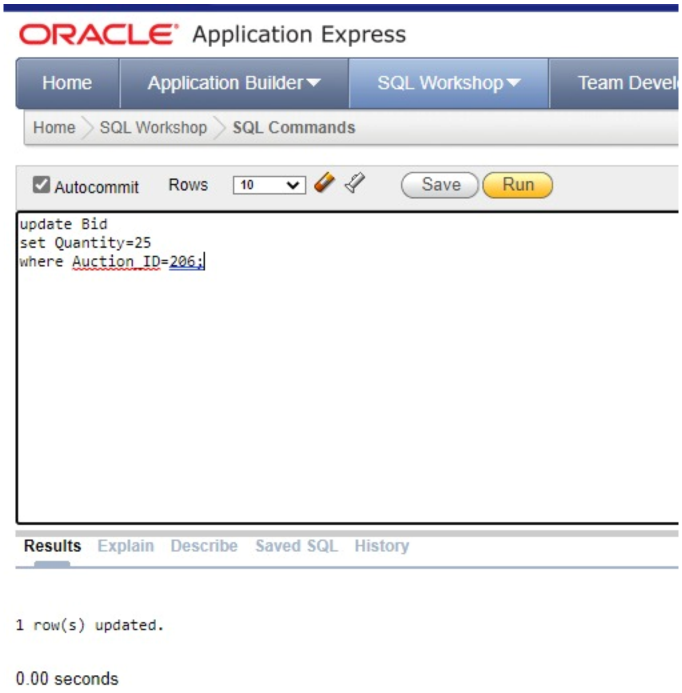


BID_ID	AUCTION_ID	USER_ID	QUANTITY	PRICE	BID_TYPE	BID_STATUS	SUBMIT_DATE	EXPIRY_DATE
1001	201	1	200	45.2	Intraday	Pending	09/17/2022	09/24/2022
1002	202	8	50	51.8	Delivery	Excuted	09/17/2022	09/24/2022
1003	203	9	65	81.2	Intraday	Pending	09/17/2022	09/24/2022
1004	204	3	35	68.9	Delivery	Pending	09/17/2022	09/24/2022
1005	205	6	1	74.5	Intraday	Cancled	09/17/2022	09/24/2022
1006	206	5	28	100	Delivery	Cancled	09/17/2022	09/24/2022
1007	207	7	10	29.7	Intraday	Cancled	09/17/2022	09/24/2022
1008	208	2	48	11.2	Delivery	Excuted	09/17/2022	09/24/2022
1009	209	4	4	97.3	Intraday	Excuted	09/17/2022	09/24/2022
1010	210	10	55	31.2	Delivery	Excuted	09/17/2022	09/24/2022

row(s) 1 - 10 of 10

15. Set quantity to 25 where the auction id is 206 in the Bid table

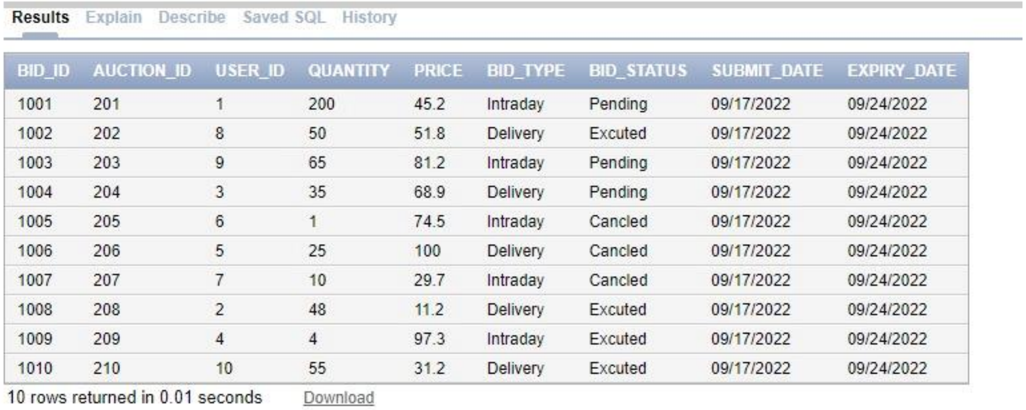
```
update Bid
set Quantity=25
where Auction_ID=206;
```



```
update Bid
set Quantity=25
where Auction_ID=206;
```

```
1 row(s) updated.
```

0.00 seconds

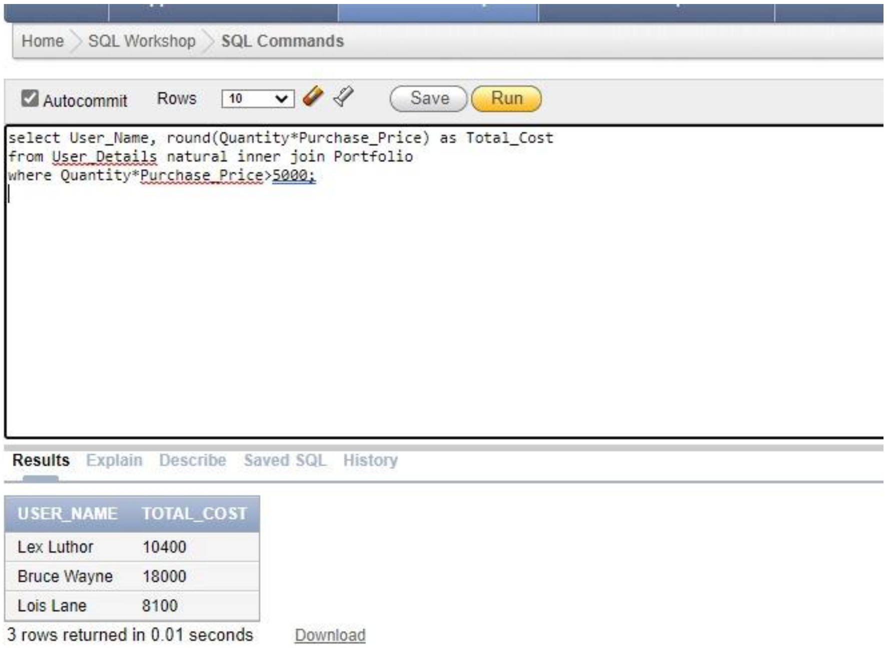


BID_ID	AUCTION_ID	USER_ID	QUANTITY	PRICE	BID_TYPE	BID_STATUS	SUBMIT_DATE	EXPIRY_DATE
1001	201	1	200	45.2	Intraday	Pending	09/17/2022	09/24/2022
1002	202	8	50	51.8	Delivery	Excuted	09/17/2022	09/24/2022
1003	203	9	65	81.2	Intraday	Pending	09/17/2022	09/24/2022
1004	204	3	35	68.9	Delivery	Pending	09/17/2022	09/24/2022
1005	205	6	1	74.5	Intraday	Cancled	09/17/2022	09/24/2022
1006	206	5	25	100	Delivery	Cancled	09/17/2022	09/24/2022
1007	207	7	10	29.7	Intraday	Cancled	09/17/2022	09/24/2022
1008	208	2	48	11.2	Delivery	Excuted	09/17/2022	09/24/2022
1009	209	4	4	97.3	Intraday	Excuted	09/17/2022	09/24/2022
1010	210	10	55	31.2	Delivery	Excuted	09/17/2022	09/24/2022

10 rows returned in 0.01 seconds Download

16.

select User_Name, round(Quantity*Purchase_Price) as Total_Cost
from User_Details natural inner join Portfolio
where Quantity*Purchase_Price>5000;



```
select User_Name, round(Quantity*Purchase_Price) as Total_Cost
from User_Details natural inner join Portfolio
where Quantity*Purchase_Price>5000;
```

USER_NAME	TOTAL_COST
Lex Luthor	10400
Bruce Wayne	18000
Lois Lane	8100

3 rows returned in 0.01 seconds

6. Project demonstration

- ORACLE (SQL) was used

7. Learning from the Project

- **How has this project helped you?**
  We have learned more about ORACLE(SQL), databases in general, and the breadth of their applications thanks to this project. We had the chance to learn how to build databases and tables, as well as how to fill them with information so that we may later execute queries on them.
- **What new aspects did you learn?**

The relevance of database management systems, the value of data and how crucial it is to handle it responsibly. About how to correctly design tables and execute SQL queries, we learned a lot.

8. Challenges Faced

The difficulty we encountered was figuring out how these various tables, each of which had multiple candidate keys and foreign keys, would link to one another, keep track of all the data that was shared throughout the databases, and how that data would be used in the queries.

9. Conclusion

- What are the key takeaways from the project?

Effective methods of data storage are necessary given the daily increase in data. The significance of database management systems is growing daily, and they are of utmost importance. Database creation and interaction are made easy with ORACLE.