AMERICAN INTERNATIONAL UNIVERSITY-BANGLADESH

(AIUB)

FACULTY OF SCIENCE AND TECNOLOGY

DEPARTMENT OF ENGINEERING

INTRODUCTION TO DATABASE

SPRING 2022-2023

SECTION: I

GROUP: 04

PROJECT NAME:

FRUIT BUSINESS.

Supervised By:

Nusrat Jahan Anannya

Submitted By:

NAME: SABBIR AHMMED SHUVO

ID: 22-47181-1

CONTRIBUTION: 6. Constraint, 7. Joining.

NAME: MRIDUL KANTI KUNDU

ID: 22-47182-1

CONTRIBUTION: 3. Normalization, 4. Table Creation, 5. Data Insertion.

NAME: MD JAHIRUL ISLAM NAHID

ID: 22-47212-1

CONTRIBUTION: 1. Scenario of ER Diagram, 2. ER Diagram, 3. Normalization.

NAME: MD MAHADI AFROJ ADOR

ID: 22-48015-2

CONTRIBUTION: 8. Subquery, 9. View.

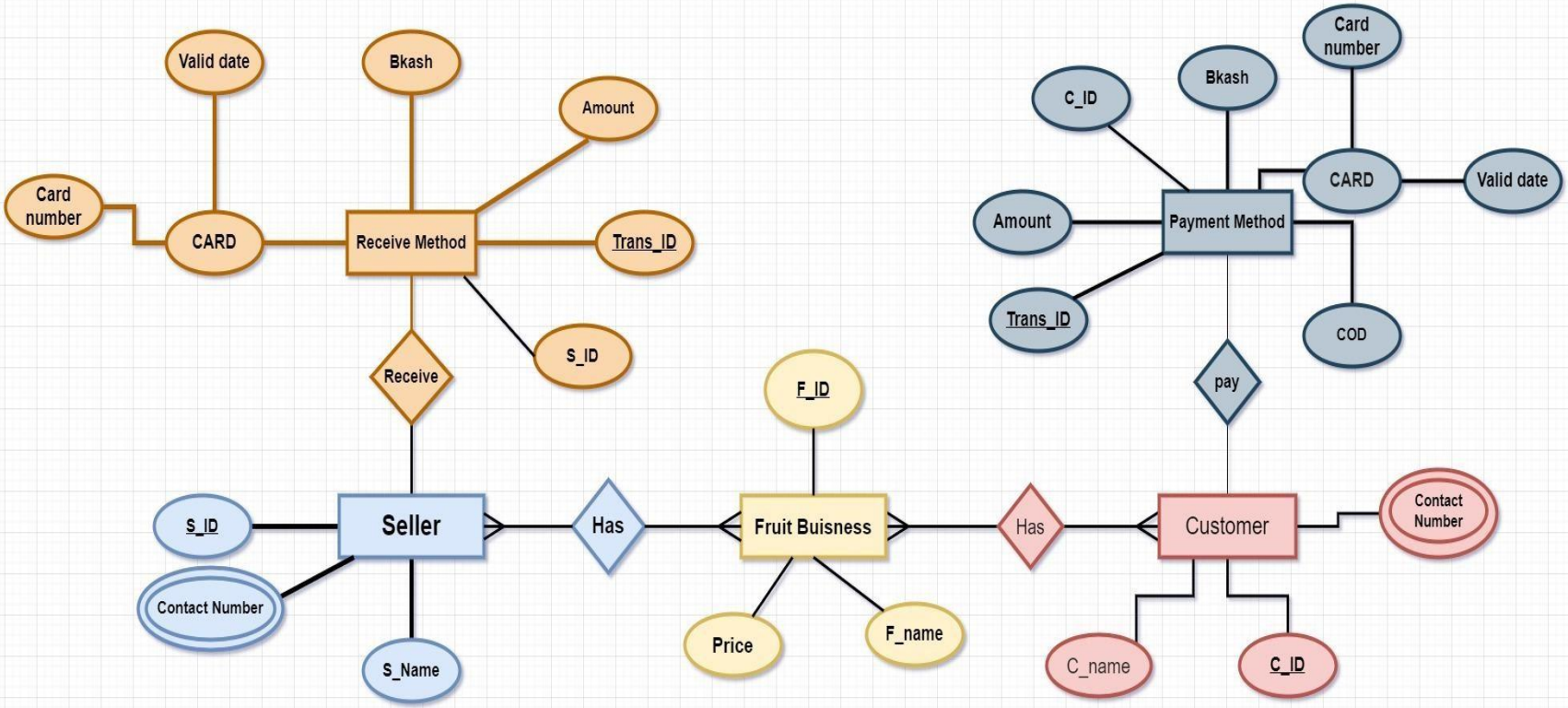
CONTAIN LIST

1. Scenario of ER Diagram

SCENARIO:

A system is decorated for fruit businesses to make people healthy and happy. The fruit business has two sides. One is the seller & other is customer. In this scenario there are also Seller, Fruit Business, Customer, Receive Method, Payment Method. The entity set seller has attributes of s_id, Contact Number, and s_Name. The customer must have c_name, c_id, and contact number. Customers must pay for buying fruits. There is one method for this condition is a payment method in which the total attributes are trans_ID, amount, Bkash, valid date, and card number. Business means a way of a platform of economic condition. The attributes are fruit business platform f_id, price, and f_name.seller is linked strongly with customers to the transaction system. The seller must be in relation with receive circumstances method to survive with the business.

ER Diagram:


Valid date
Bkash
Amount
Card number
CARD
Receive Method
Trans_ID
S_ID
Receive
Card number
Bkash
C_ID
CARD
Valid date
Amount
Payment Method
Trans_ID
COD
pay
F_ID
S_ID
Seller
Has
Fruit Buisness
Has
Customer
Contact Number
Contact Number
Price
F_name
C_name
C_ID
S_Name

NORMALIZATION

FRUIT BUSINESS HAS SELLER

UNF:

- 1st: SID , Contact Number, S_Name, FID ,Price, F_Name

1NF:

- 1st: SID, Contact Number, S_Name, FID ,Price, F_Name

2NF:

- 1st :Fid , F_Name, Price
- 2nd:SID ,S_Name
- 3rd:SID , contactNumber
- 4th:contact Number , S_name
- 5th: SID, FID

3NF:

- 1st :Fid , F_Name
- 2nd: SID , S_Name
- 3rd:SID , contactNumber
- 4th:contactNumber , S_name
- 5th: SID, FID
- 6th:FID , Price

FRUIT BUSINESS HAS CUSTOMER:

UNF:

- 1st**:** FID , Price, F_Name, C_name, C_ID, Contact Number

1NF:

- 1st**:** FID , Price, F_Name, C_name, CID , Contact Number

2NF:

- 1st **:** CID , Contact Number
- 2nd: C_name, CID
- 3rd: Contact Number , C_name
- 4th: FID , Price, F_Name
- 5th: FID , CID

3NF:

- 1st : CID , Contact Number
- 2nd: C_name, CID
- 3rd: Contact Number , C_name
- 4th: FID ,Price
- 5th: FID ,F_Name
- 6th: FID ,CID

CUSTOMER PAY PAYMENT METHOD:

UNF:

- 1st: C_name,C_ID, Contact Number, Trans_ID , Amount, Bkash, Card number, Valid date

1NF:

- 1st: C_name,C_ID,Contact Number, Trans_ID ,Amount,Bkash,Card number,Valid date

2NF:

- 1st : CID , Contact Number
- 2nd: C_name, CID
- 3rd: Contact Number , C_name
- 4th: TransId , Amount, Card Number, valid date, COD
- 5th: CID , TransId

3NF:

- 1st : CID , Contact Number
- 2nd: C_name, CID
- 3rd: Contact Number , C_name
- 4th: TransId , Amount

- 5^{th}: TransId , COD
- **6^{th}:** Card Number, valid date
- **7^{th}:** CID , TransId

SELLER RECEIVE METHOD:

UNF:

- 1^{st}: SID , Contact Number,S_Name, Trans_ID ,Amount,Bkash,Card number,Valid date

1NF:

- 1^{st}: SID , Contact Number ,S_Name, Trans_ID ,Amount,Bkash,Card number,Valid date

2NF:

- 1^{st} : SID , Contact Number
- 2^{nd}: SID ,S_name
- 3^{rd}: Contact Number ,S_name

- 4th: TransId ,Amount,Card Number,valid date,COD
- 5th: CID ,TransId

3NF:

- 1st : SID , Contact Number
- 2nd: SID ,S_name
- 3rd: Contact Number , S_name
- 4th: TransId ,Amount
- 5th: TransId ,COD
- 6th: Card Number,valid date
- 7th: CID ,TransId

FINAL TABLE:

1st :Fid , F_Name
2nd: SID , S_Name
3rd:SID , contactNumber
4th: contactNumber , S_name
5th: SID, FID
6th:FID , Price
7th: CID , Contact Number

8th: C_name, CID

9th: Contact Number , C_name

10th:FID , CID

11th: TransId , Amount

12th:TransId , COD

13th:Card Number, valid date

14th:CID , TransId

Table Creation:

Fruit Buisness:

create table Fruit_buisness (F_ID number(2) primary key, F_name varchar2(32), Price number(11));

ORACLE Database Express Edition

User: SCOTT

Home > SQL > SQL Commands

Autocommit Display 10

```
create table Fruit_buisness(F_ID number(2) primary key, F_name varchar2(32),Price number(11));

describe Fruit_buisness;
```

Results Explain Describe Saved SQL History

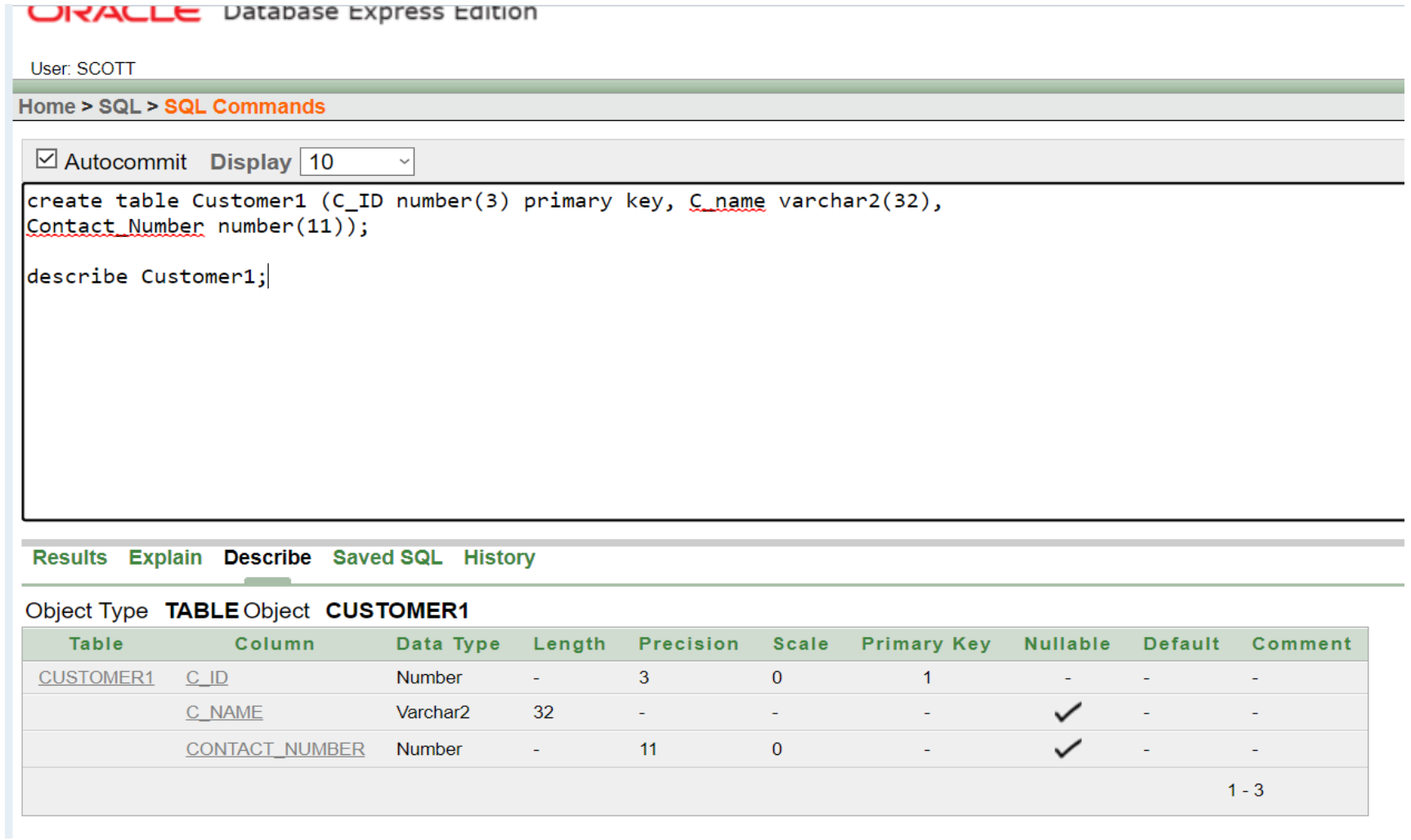
Object Type **TABLE** Object **FRUIT_BUISNESS**

Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
FRUIT_BUISNESS	F_ID	Number	-	2	0	1	-	-	-
	F_NAME	Varchar2	32	-	-	-	✓	-	-
	PRICE	Number	-	11	0	-	✓	-	-

1 - 3

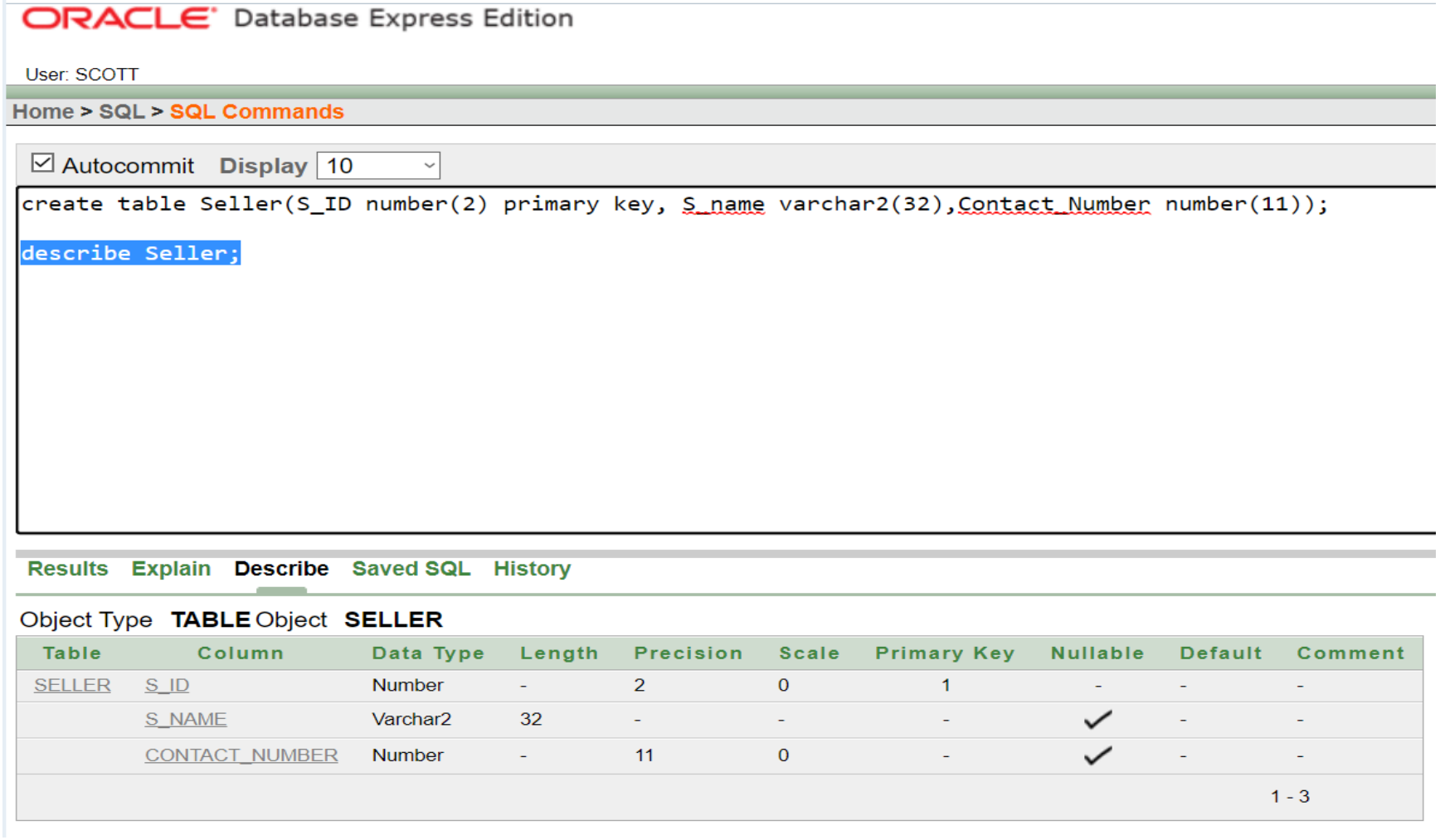
Customer1:

create table Customer1 (C_ID number(2) primary key, C_name varchar2(32), Contact_Number number(11));



Seller:

create table Seller(S_ID number(2) primary key, S_name varchar2(32), Contact_Number number(11));



Payment Method:

create table Payment_method(Trans_ID number(7) primary key, Card_Number Number(14), Vaild date, Bash number(11),Amount number(5) default(0));
Alter table payment_method add(C_id Number(3));

ORACLE Database Express Edition

User: SCOTT

Home > SQL > SQL Commands

Autocommit Display 10

```
create table Payment_method(Trans_ID number(7) primary key, Card_Number
Number(14), Vaild date, Bkash number(11),Amount number(5) default(0));
Alter table payment_method add(C_id Number(3));

describe Payment_method;
```

Results Explain Describe Saved SQL History

Object Type **TABLE** Object **PAYMENT_METHOD**

Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
PAYMENT_METHOD	TRANS_ID	Number	-	7	0	1	-	-	-
	CARD_NUMBER	Number	-	14	0	-	✓	-	-
	VAILD	Date	7	-	-	-	✓	-	-
	BKASH	Number	-	11	0	-	✓	-	-
	AMOUNT	Number	-	5	0	-	✓	(0)	-
	C_ID	Number	-	3	0	-	✓	-	-

1 - 6

Receive Method:

create table Receive_method(Trans_ID number(7) primary key, Card_Number Number(14), Vaild date, Bkash number(11),Amount number(5) default(0));
Alter table Receive_method add(S_id Number(3));

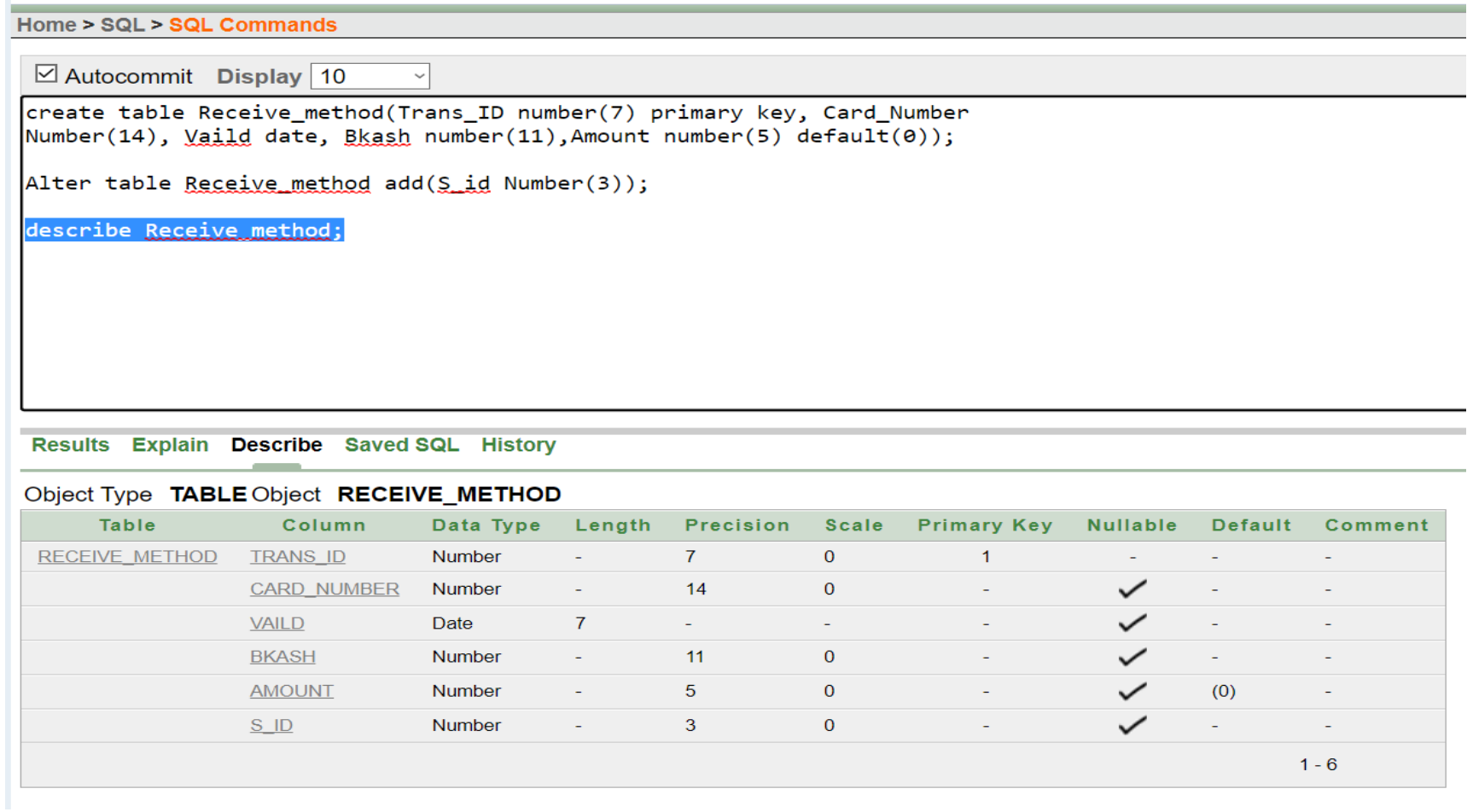


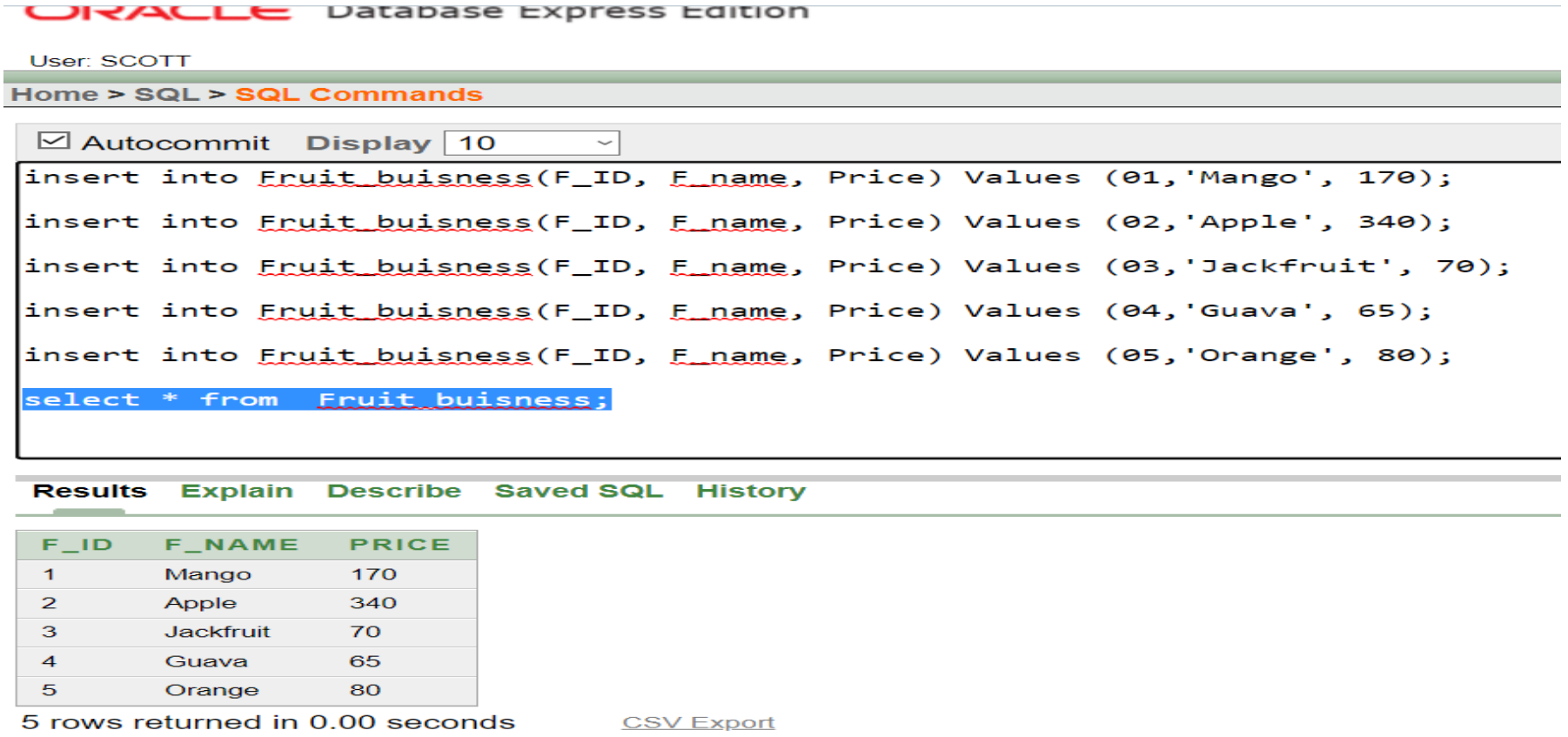
Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
RECEIVE_METHOD	TRANS_ID	Number	-	7	0	1	-	-	-
	CARD_NUMBER	Number	-	14	0	-	✓	-	-
	VAILD	Date	7	-	-	-	✓	-	-
	BKASH	Number	-	11	0	-	✓	-	-
	AMOUNT	Number	-	5	0	-	✓	(0)	-
	S_ID	Number	-	3	0	-	✓	-	-

1 - 6

DATA INSERTION:

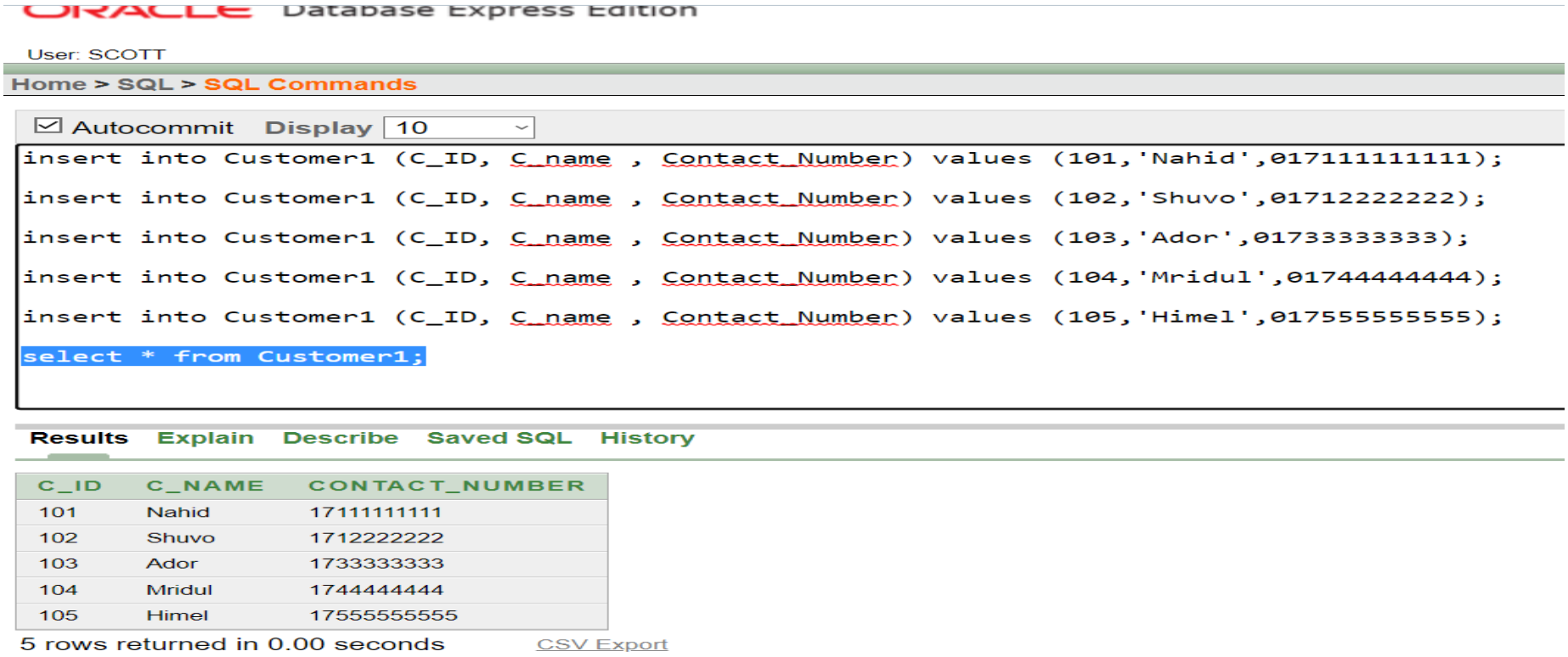
Fruit Buisness:

```
insert into Fruit_buisness(F_ID, F_name, Price) Values (01,'Mango', 170);
insert into Fruit_buisness(F_ID, F_name, Price) Values (02,'Apple', 340);
insert into Fruit_buisness(F_ID, F_name, Price) Values (03,'Jackfruit', 70);
insert into Fruit_buisness(F_ID, F_name, Price) Values (04,'Guava', 65);
insert into Fruit_buisness(F_ID, F_name, Price) Values (05,'Orange', 80);
```



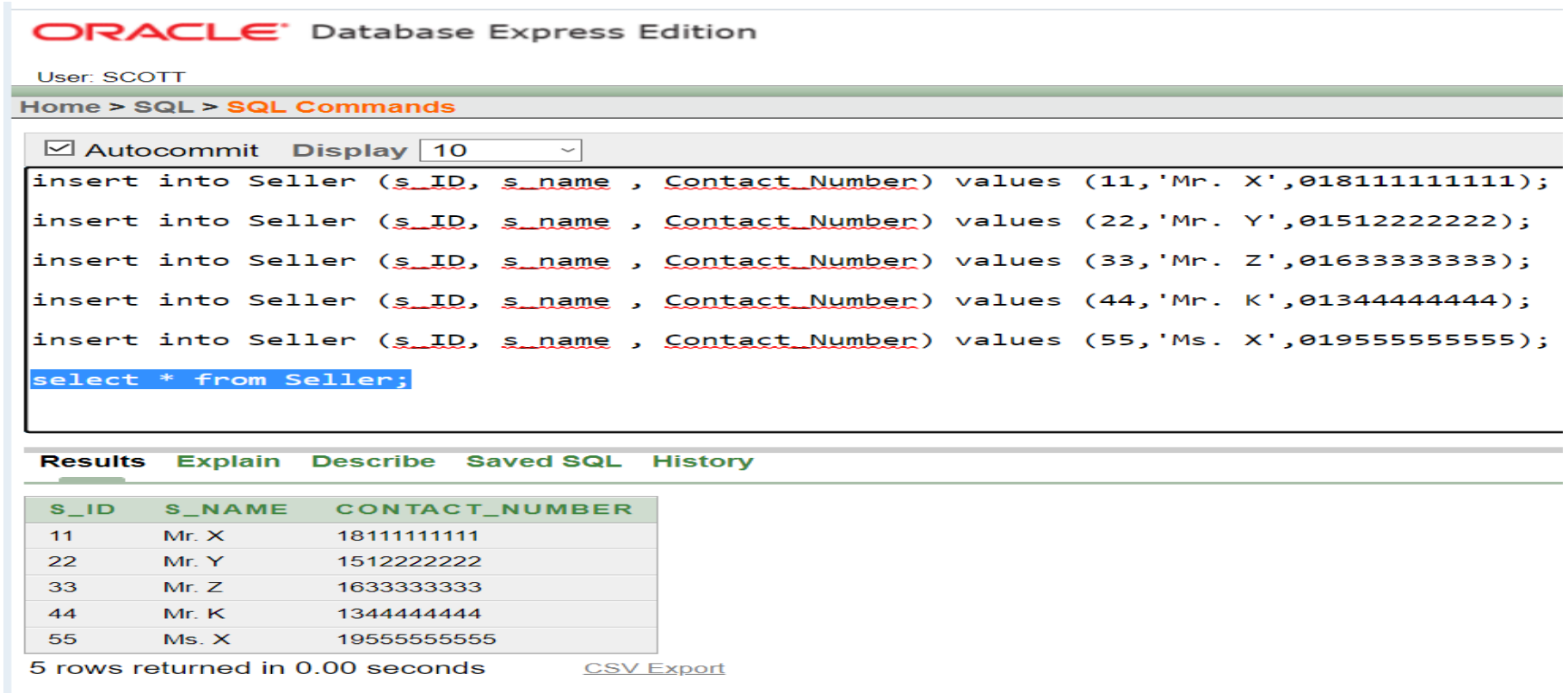
Customer:

```
insert into Customer1 (C_ID, C_name , Contact_Number) values (101,'Nahid',017111111111);
insert into Customer1 (C_ID, C_name , Contact_Number) values (102,'Shuvo',01712222222);
insert into Customer1 (C_ID, C_name , Contact_Number) values (103,'Ador',01733333333);
insert into Customer1 (C_ID, C_name , Contact_Number) values (104,'Mridul',01744444444);
insert into Customer1 (C_ID, C_name , Contact_Number) values (105,'Himel',017555555555);
```



Seller:

```
insert into Seller (s_ID, s_name , Contact_Number) values (11,'Mr. X',018111111111);
insert into Seller (s_ID, s_name , Contact_Number) values (22,'Mr. Y',01512222222);
insert into Seller (s_ID, s_name , Contact_Number) values (33,'Mr. Z',01633333333);
insert into Seller (s_ID, s_name , Contact_Number) values (44,'Mr. K',01344444444);
insert into Seller (s_ID, s_name , Contact_Number) values (55,'Ms. X',019555555555);
```



Payment_method:

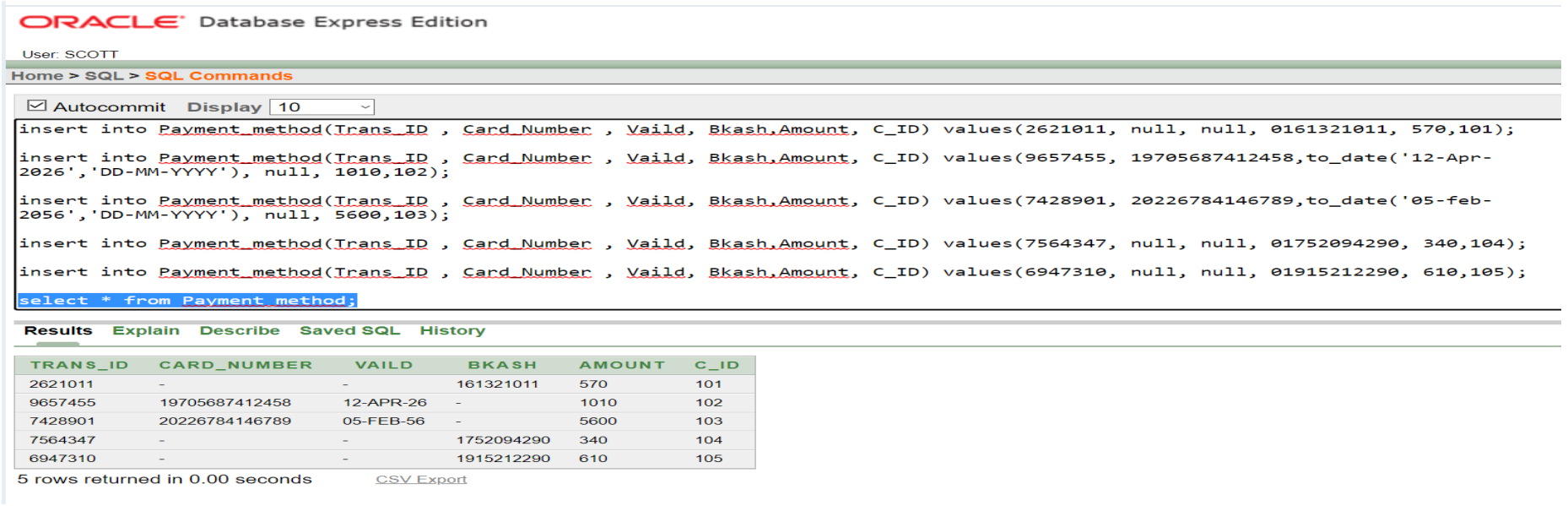
insert into Payment_method (Trans_ID, Card_Number , Vaild, Bkash,Amount, C_ID) values(2621011, null, null, 0161321011, 570,101);

insert into Payment_method (Trans_ID, Card_Number , Vaild, Bkash,Amount, C_ID) values(9657455, 19705687412458,to_date('12-Apr-2026','DD-MM-YYYY'), null, 1010,102);

insert into Payment_method(Trans_ID , Card_Number , Vaild, Bkash,Amount, C_ID) values(7428901, 20226784146789,to_date('05-feb-2056','DD-MM-YYYY'), null, 5600,103);

insert into Payment_method (Trans_ID , Card_Number , Vaild, Bkash,Amount, C_ID) values(7564347, null, null, 01752094290, 340,104);

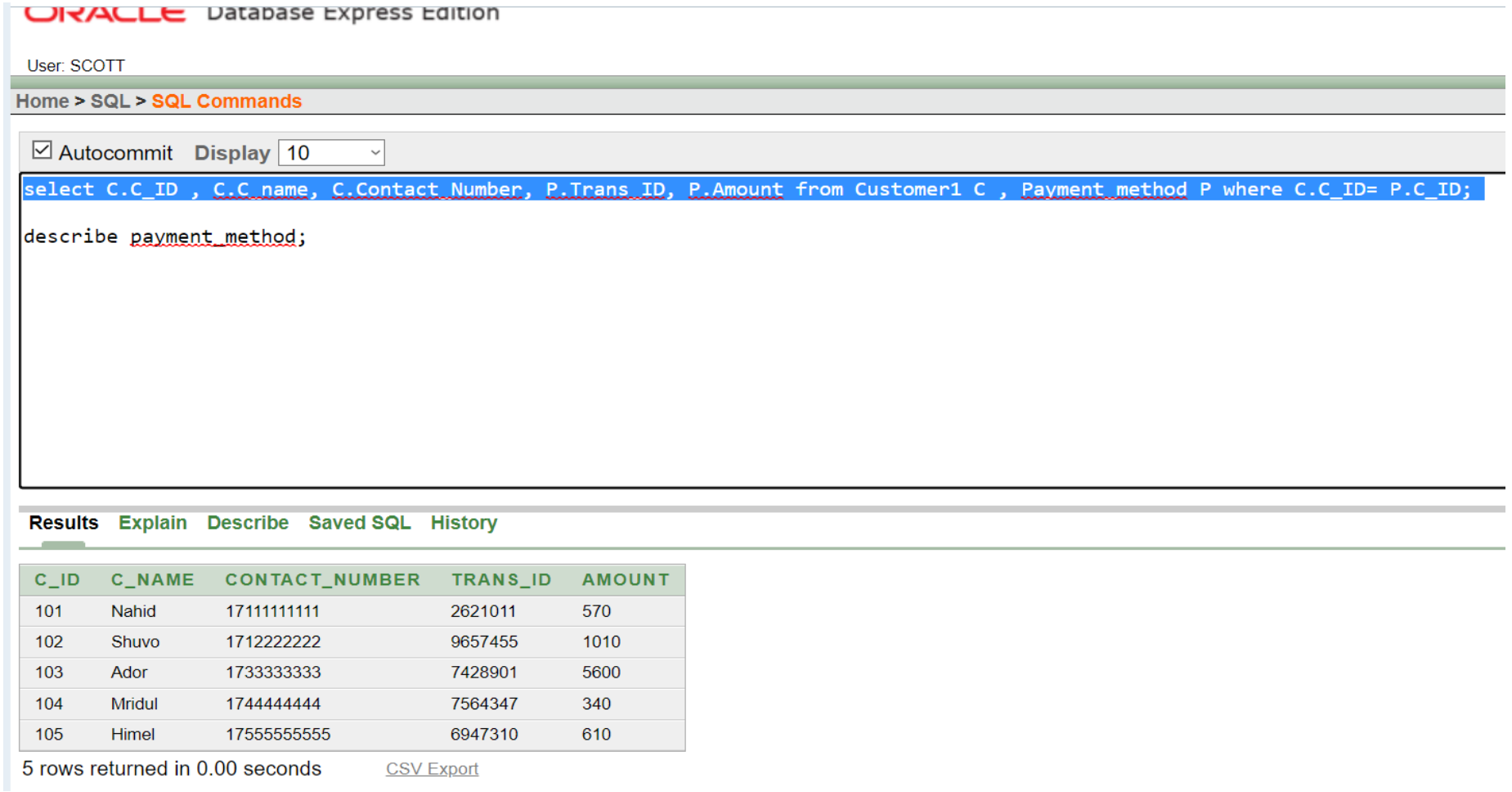
insert into Payment_method(Trans_ID , Card_Number , Vaild, Bkash,Amount, C_ID) values(6947310, null, null, 01915212290, 610,105);



Equijoin 1:

Q. Display all information between Customer and Payment Method?

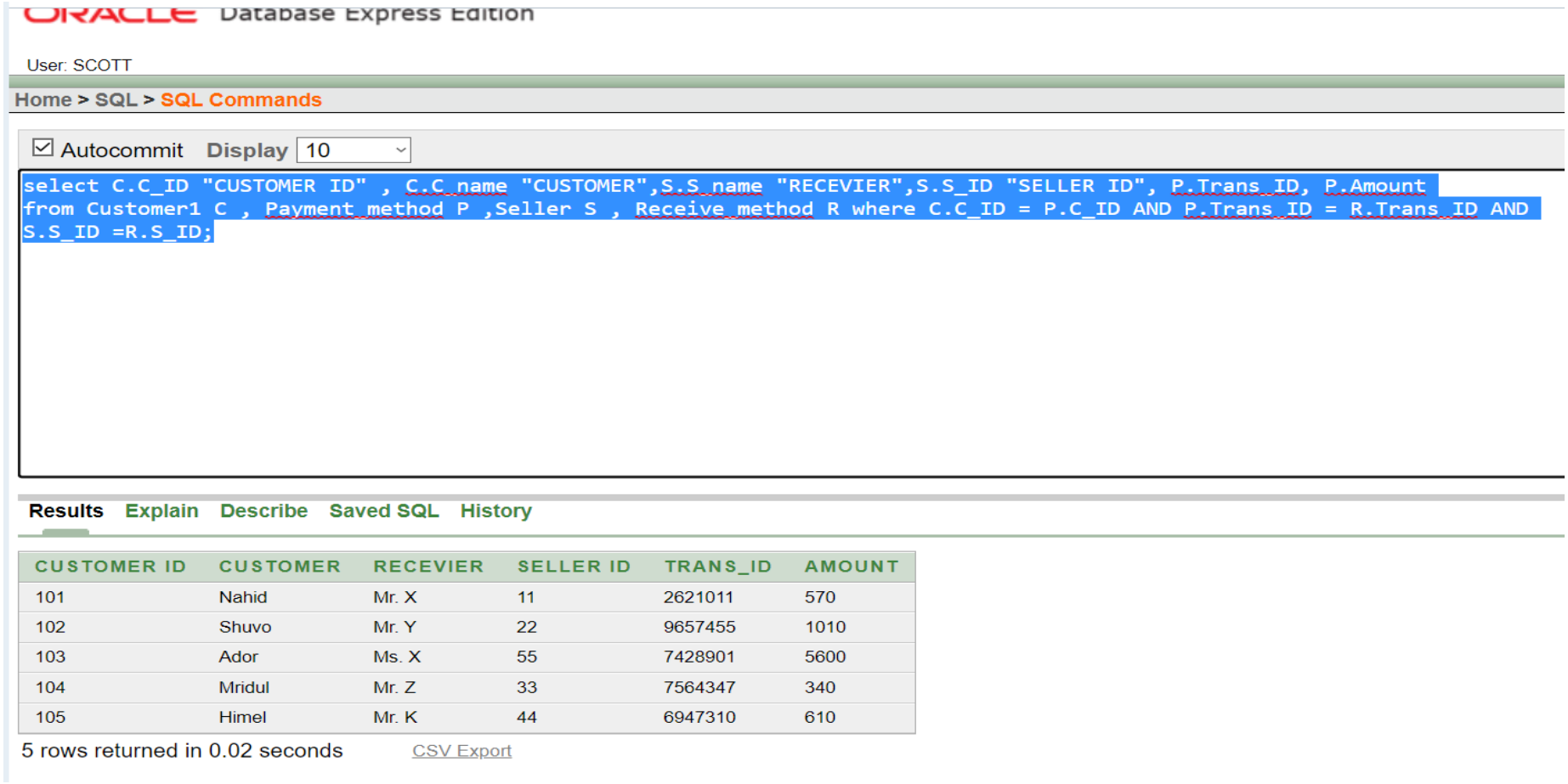
Ans: select C.C_ID , C.C_name, C.Contact_Number, P.Trans_ID, P.Amount from Customer C , Payment_method P where C.C_ID = P.C_ID;



Equijoin 2:

Q. Display all information between Customer and Seller?

Ans: select C.C_ID "CUSTOMER ID" , C.C_name "CUSTOMER",S.S_name "RECEVIER",S.S_ID "SELLER ID", P.Trans_ID, P.Amount from Customer C , Payment_method P ,Seller S , Receive_method R where C.C_ID = P.C_ID AND P.Trans_ID = R.Trans_ID AND S.S_ID =R.S_ID;



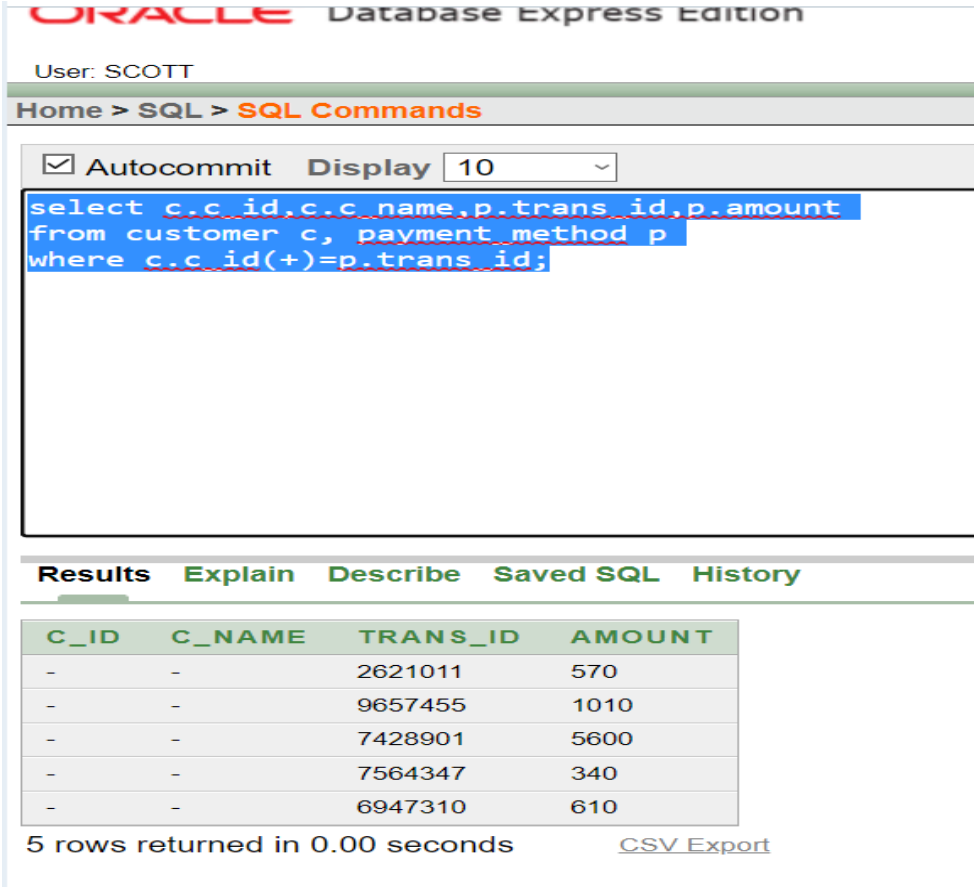
Outer join 1:

Q. Display all information between customer and payment method?

Ans: select c.c_id,c.c_name,p.trans_id,p.amount

from customer c, payment_method p

where c.c_id(+)=p.trans_id;



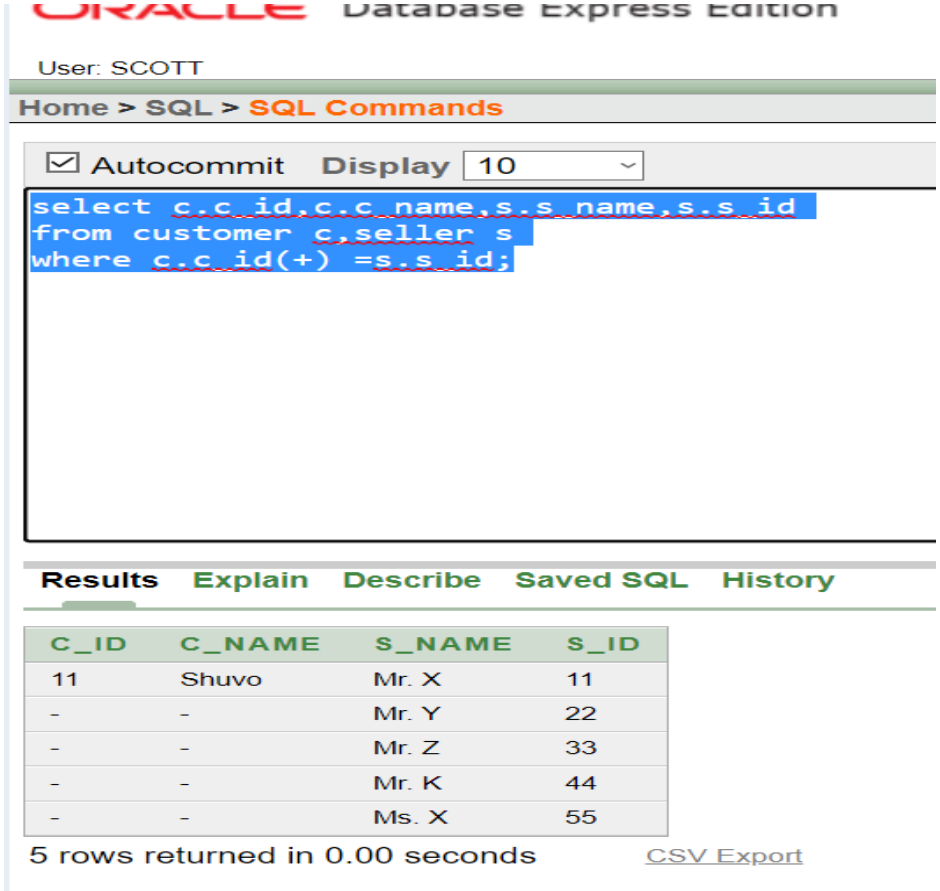
outerjoin 2:

Q. Display all information between Customer and Seller?

Ans: select c.c_id,c.c_name,s.s_name,s.s_id

from customer c,seller s

where c.c_id(+) =s.s_id;



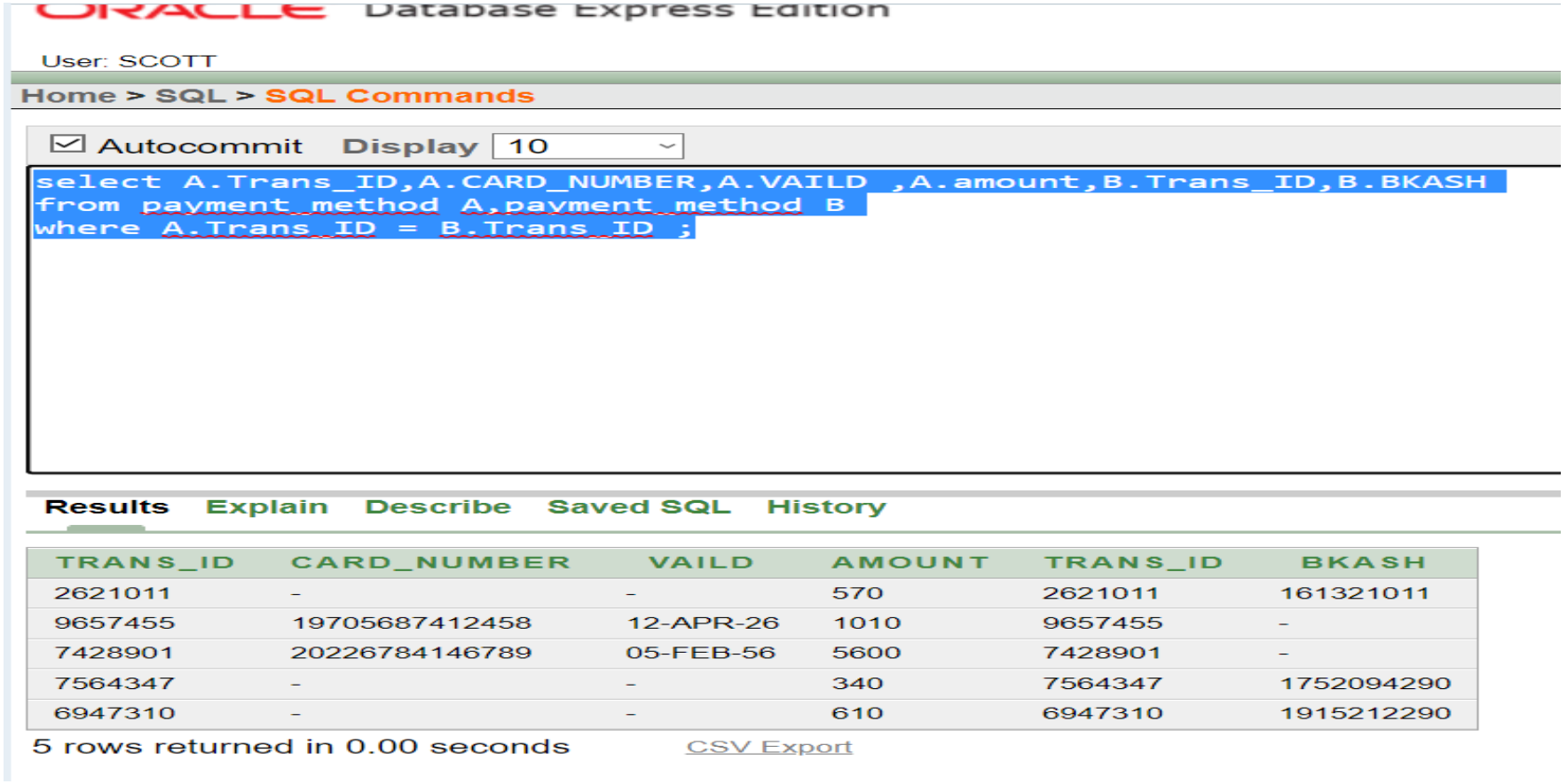
Selfjoin:

Q. Display Self-Join of Payment Method Table?

Ans: select A.Trans_ID,A.CARD_NUMBER,A.VAILD ,A.amount,B.Trans_ID,B.BKASH

from payment_method A,payment_method B

where A.Trans_ID = B.Trans_ID ;



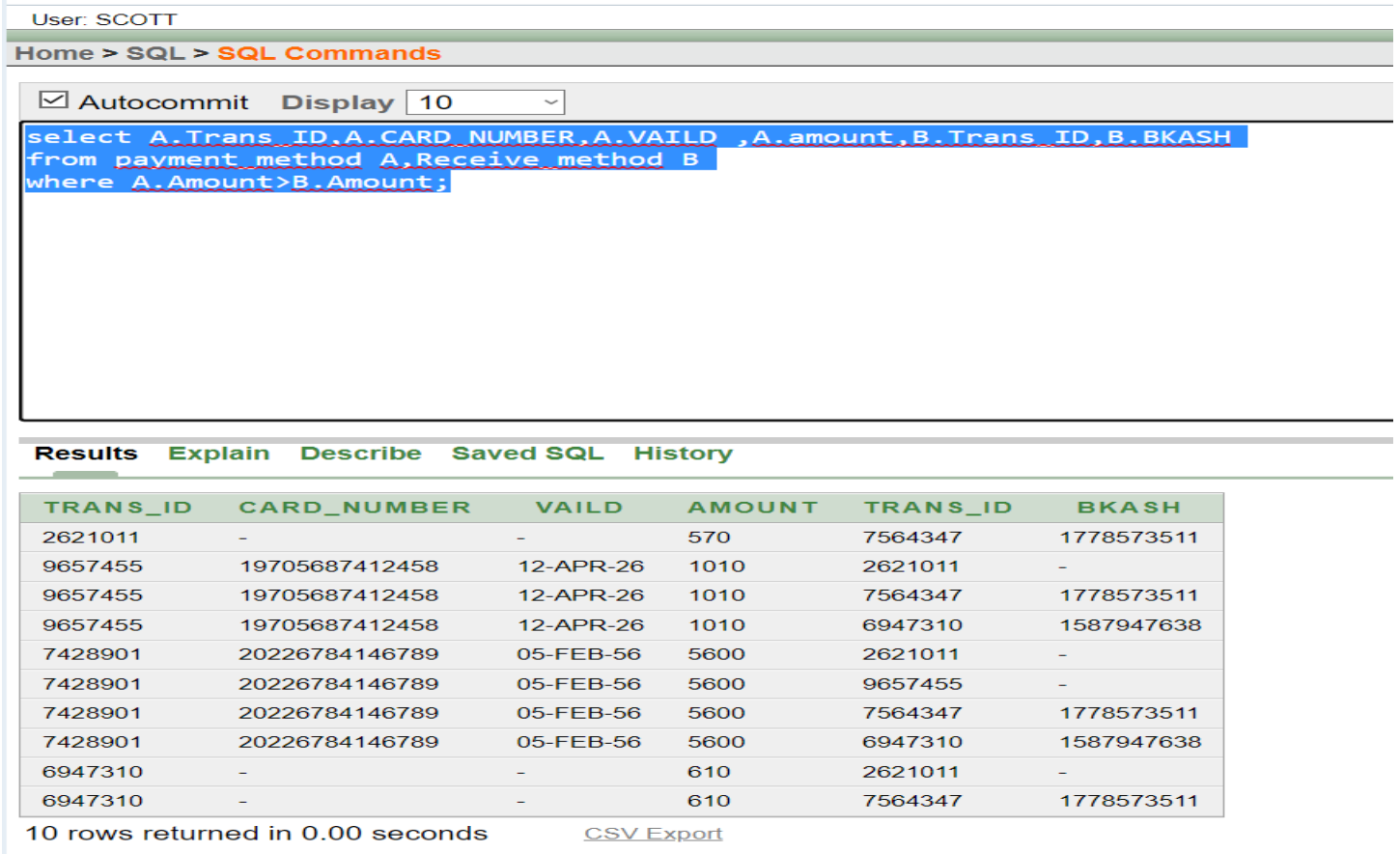
Non-EquiJOin:

Q. Display Self-Join of Payment Method Table?

Ans: select A.Trans_ID,A.CARD_NUMBER,A.VAILD ,A.amount,B.Trans_ID,B.BKASH

from payment_method A,Receive_method B

where A.Amount>B.Amount;



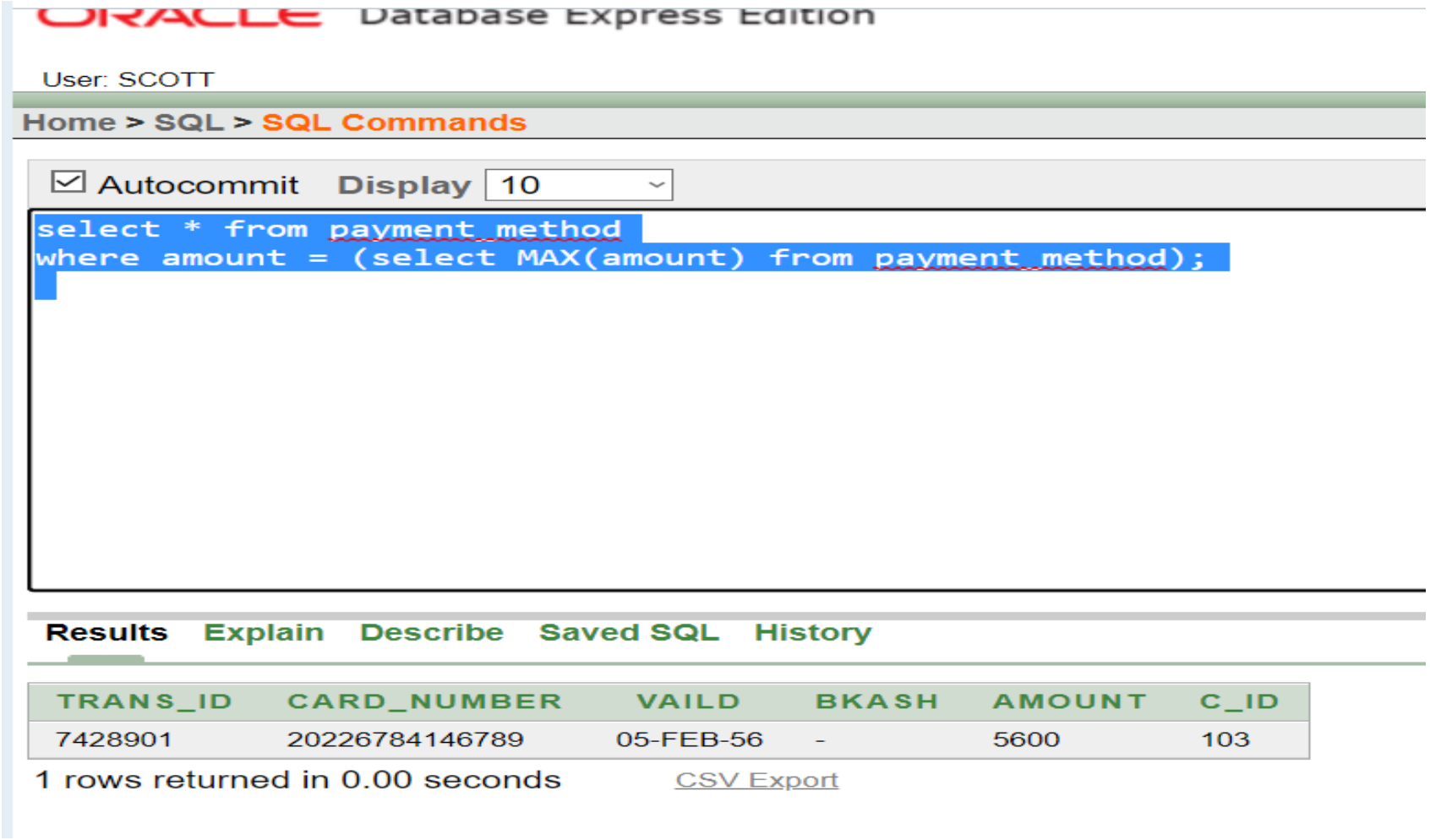
TRANS_ID	CARD_NUMBER	VAILD	AMOUNT	TRANS_ID	BKASH
2621011	-	-	570	7564347	1778573511
9657455	19705687412458	12-APR-26	1010	2621011	-
9657455	19705687412458	12-APR-26	1010	7564347	1778573511
9657455	19705687412458	12-APR-26	1010	6947310	1587947638
7428901	20226784146789	05-FEB-56	5600	2621011	-
7428901	20226784146789	05-FEB-56	5600	9657455	-
7428901	20226784146789	05-FEB-56	5600	7564347	1778573511
7428901	20226784146789	05-FEB-56	5600	6947310	1587947638
6947310	-	-	610	2621011	-
6947310	-	-	610	7564347	1778573511

10 rows returned in 0.00 seconds CSV Export

SUBQUERY NO 1:

Q: Display all who pays maximum amount of money?

Ans: select * from payment_method



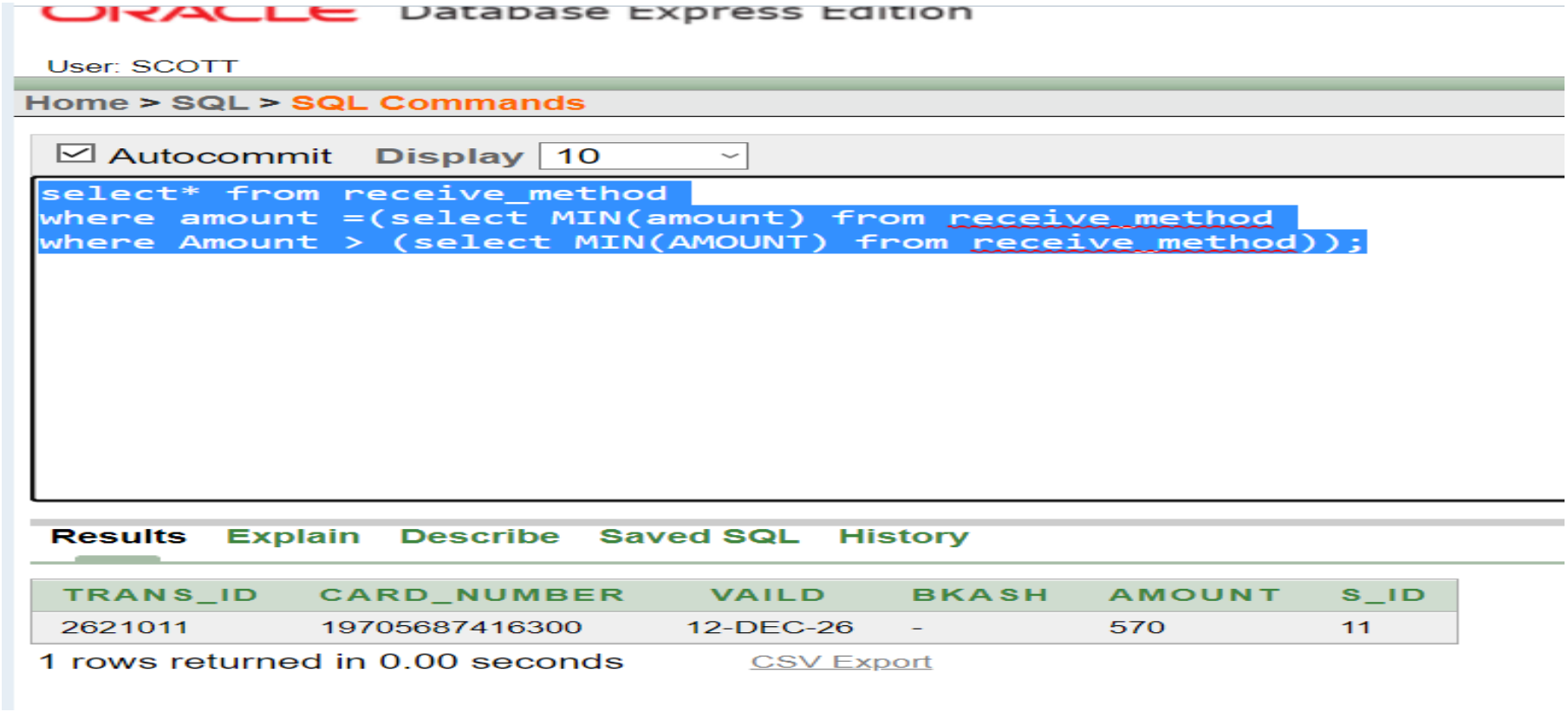
SubQuery N0. 2:

Q: Display all information who receive 2nd Minimum amount of money?

Ans: select* from receive_method

where amount =(select MIN(amount) from receive_method

where Amount > (select MIN(AMOUNT) from receive_method));

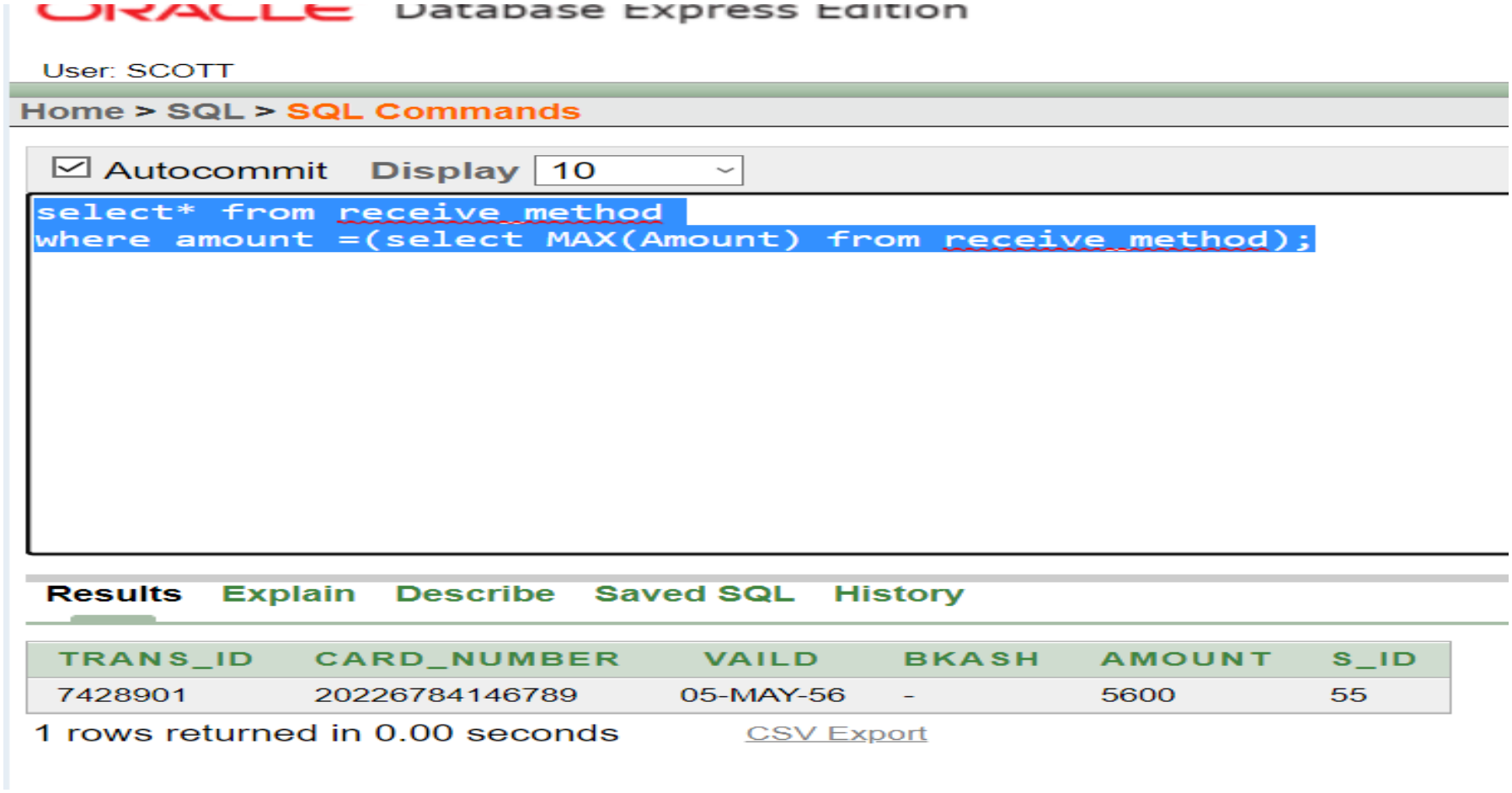


SubQuery N0. 3:

Q: Display all information who receive maximum amount of money?

Ans: select* from receive_method

where amount =(select MAX(Amount) from receive_method);



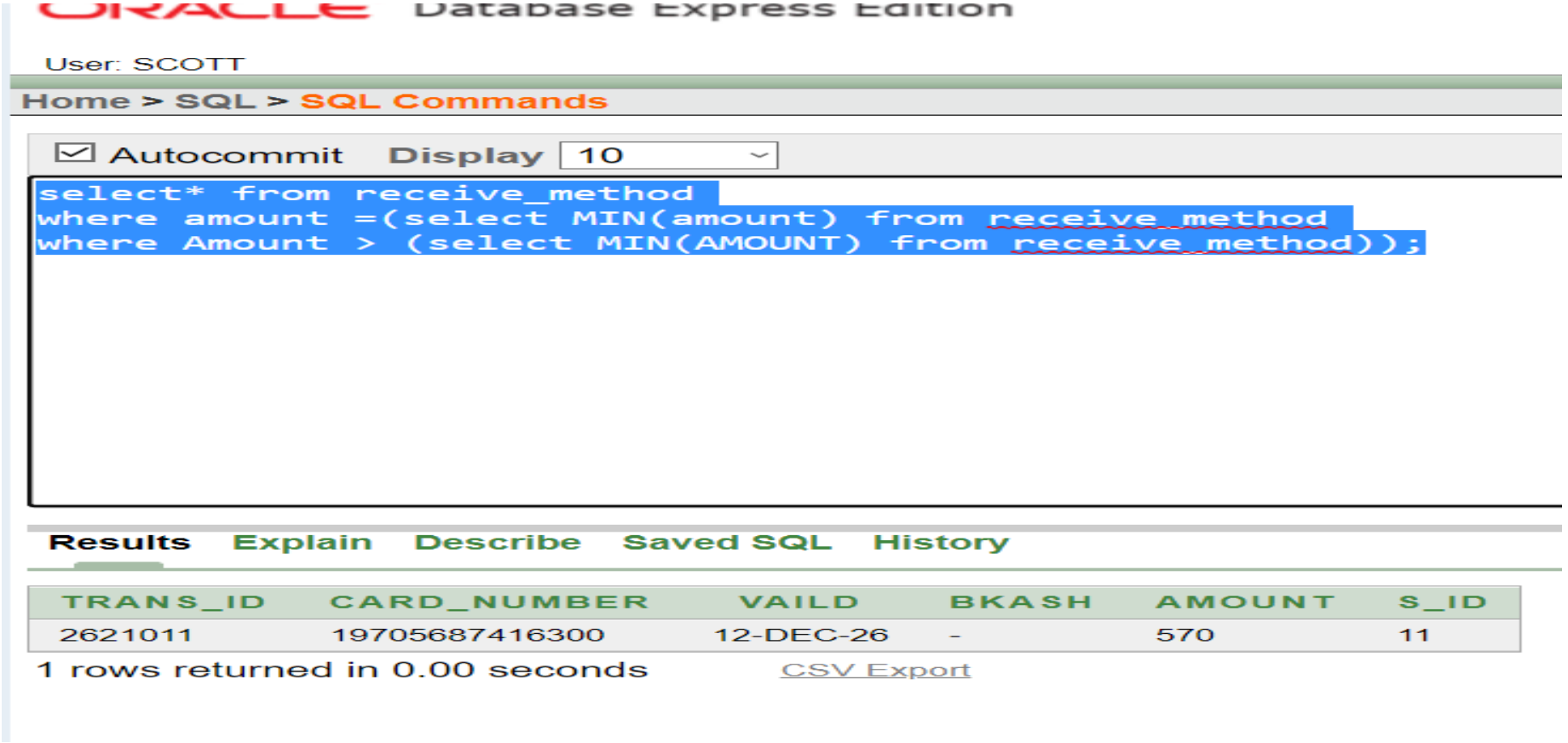
SubQuery N0. 4:

Q: Display all information who pays 2nd maximum amount of money?

Ans: select* from receive_method

where amount =(select MIN(amount) from receive_method

where Amount > (select MIN(AMOUNT) from receive_method));



:SIMPLE VIEW:

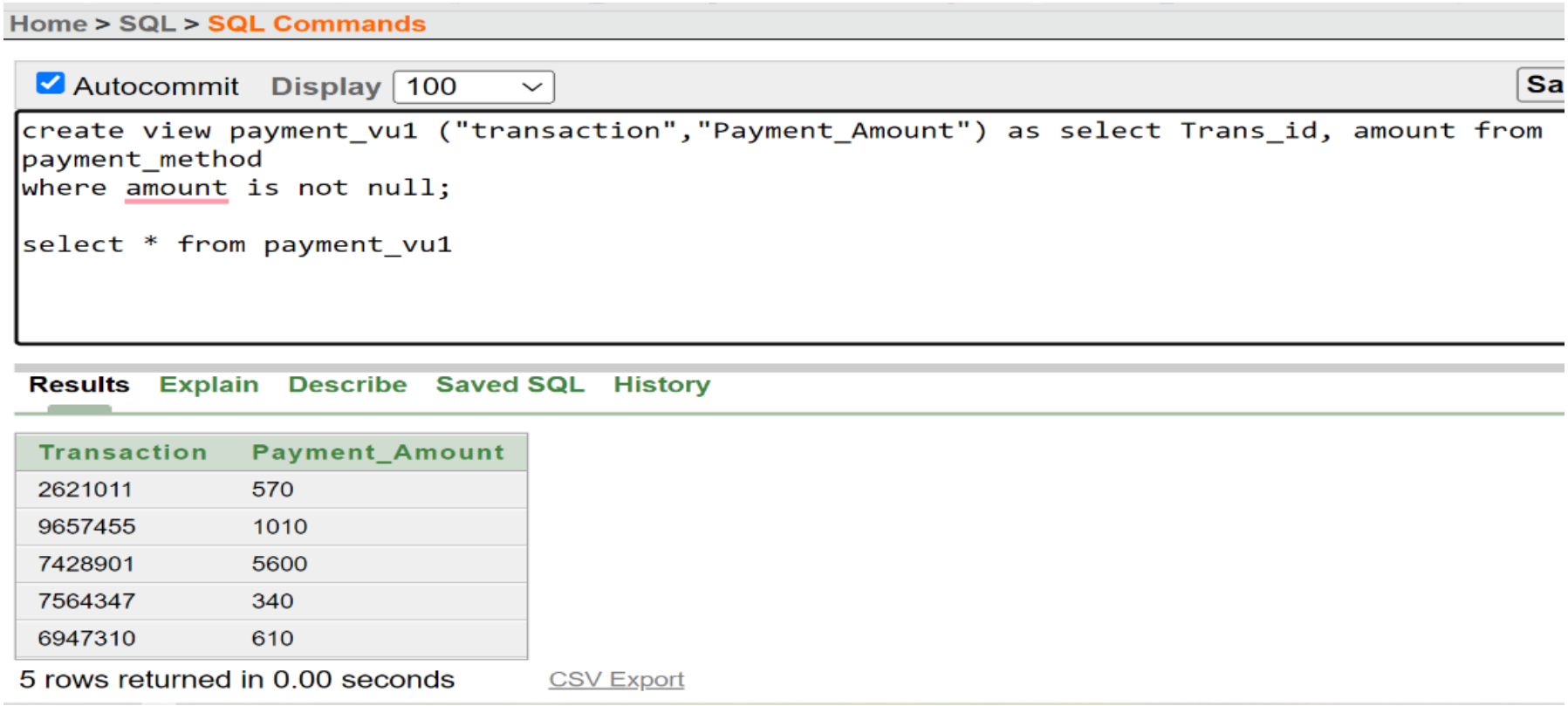
Q. Create a view of Transaction ID , Amount and show the table where Amount is not null?

A. create view payment_vu1 ("transaction","Payment_Amount") as select Trans_id, amount

From payment_method

where amount is not null;

select * from payment_vu1



Complex view:

Q. Create a Complex view of Customer Name , ID , Amount of payment , Transaction ID?

Ans: create View Paid (Name, Customer_ID,Taka,

transaction_ID) AS Select C.C_name,c.C_ID,P.Amount,P.Trans_ID from Customer C , Payment_method P where C.C_ID = P.C_ID;

Autocommit Display 100 Save

```
create View Paid (Name, Customer_ID,Taka,
transaction_ID) AS Select C.C_name,c.C_ID,P.Amount,P.Trans_ID from Customer C , Payment_method P
where C.C_ID = P.C_ID;

select* from Paid;
```

Results Explain Describe Saved SQL History

NAME	CUSTOMER_ID	TAKA	TRANSACTION_ID
Rahim	101	570	2621011
Karim	102	1010	9657455
Judu	103	5600	7428901
Kudu	104	340	7564347
Mohdu	105	610	6947310

5 rows returned in 0.02 seconds CSV Export

Constraint:

Payment_method:

Alter table payment_method modify amount not null;

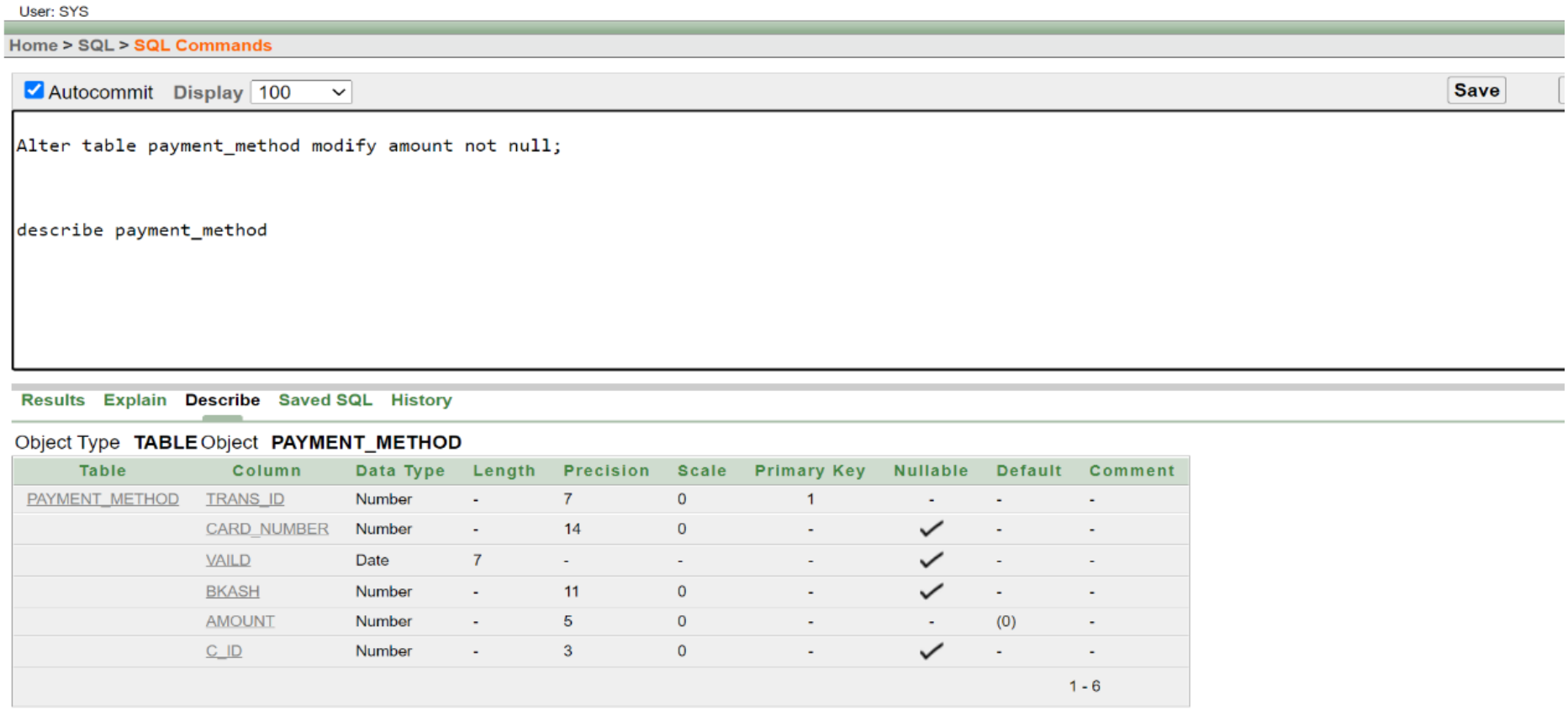


Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
PAYMENT_METHOD	TRANS_ID	Number	-	7	0	1	-	-	-
	CARD_NUMBER	Number	-	14	0	-	✓	-	-
	VAILD	Date	7	-	-	-	✓	-	-
	BKASH	Number	-	11	0	-	✓	-	-
	AMOUNT	Number	-	5	0	-	-	(0)	-
	C_ID	Number	-	3	0	-	✓	-	-

1 - 6

THANK YOU .