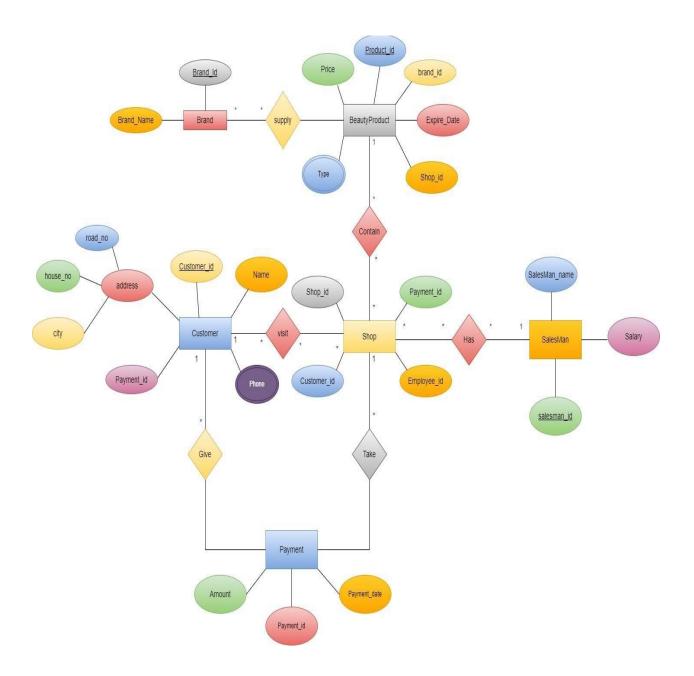
<u>Scenario</u>

Alice is the owner of a beauty product shop. She is looking for a way to better manage her shop. She decides to invest in an online beauty product shop management system. The system allows Alice to create and manage product listings, process payments, track inventory, and communicate with customers. Alice is able to easily upload product images, descriptions, and pricing information. She can also custom product categories, manage promotional discounts, and track customer orders. The system has a customer database. This will store all of the customer information such as name, email, phone number and purchase history, alice will also be able to keep track of any customer loyalty discounts that she offers. Next, Alice will set up an automated email system. This will allow her to send automated emails to customers whenever she has new products, promotions or special offers. It will also help her keep in touch with her customers and let them know when she is running any special events. Alice uses the system to create a customer loyalty program, which offers rewards for frequent customers. She also sets up automated shipping and billing systems, so customers can receive their products quickly and securely. The software can also be used to generate customer loyalty programs and promotions, as well as track customer details and feedback. In addition, the software can help streamline the purchase process, allowing customers to make purchases online, view product

details, and track order status. It can also help with managing product returns and exchanges, as well as generate invoices and receipts Alice also takes advantage of the system's analytics features, which provide her with valuable insights into customer behavior. She's able to use this information to optimize her marketing campaigns and better serve her customers. Alice sets up the system and enters her employee information, including their names, contact information, job titles, and hours worked. She is able to set up the system to automatically calculate each employee's wages and send out paychecks on the designated day. The system also allows Alice to easily track her employees' hours and make sure that they are not overworking themselves. She can also set up the system to alert her when an employee reaches a certain number of hours, so she can remind them to take a break or rotate them out. Alice is pleased with the system and finds it extremely helpful in managing her store's staff. She can now focus more on customer service and store operations, knowing that her employees' information and payroll are taken care of.. Alice is now able to manage her online beauty product shop more effectively and efficiently. She is able to provide her customers with a better shopping experience and increase sales.

ER Diagram



Normalization:

Relation Name: Customer--- 1----- visit -----*---Shop

UNF: customer id , name, phone, payment_id, city, house_no, road_no, shop_id, employee_id.

1NF: phone is a multivalued attribute here.

1st: phone, customer id, shop id, name, <a href="mailto:payment_id, city, house_no, road_no, employee_id.

2NF: name, phone, payment_id, city, house_no, road_no are partially depended because they depend on customer_id but not shop_id.

1st: <u>customer_id</u>, <u>phone</u>, name, payment_id, city, house_no, road_no.

2nd: shop_id (PK), customer_id (FK), employee_id, payment_id.

3NF: city and road_no depends on house_no which is a non key attribute.

1st: <u>customer id</u>, <u>phone</u>, name, payment_id.

2nd: shop_id, customer_id(FK), employee_id, payment_id.

3rd: <u>customer id</u>, <u>house no</u>, city, road_no.

Relation Name: Brand*...supply......* Beauty Product

UNF: <u>brand id</u>, brand_name, <u>product id</u>, expired_date, type, shop_id, price.

1NF: type is a multivalued attribute here.

1st: type, brand id, brand name, product id, expired date, shop id, price.

2NF: brand_name is partially depended because it depends on brand_id but not product_id.

1st: brand id, brand name.

2nd: <u>product_id</u>, <u>type</u>, brand_id(FK), expired_date, shop_id, price.

3NF: No transitive dependencies found.

Relation Name: Shop*.....contain......*....Beauty Product

UNF: shop_id, customer_id, employee_id, payment_id, product_id, brand_id, expired date, type, price.

1NF: type is a multivalued attribute here.

1st: shop_id, type, customer_id, employee_id, <a href="mailto:payment_id, product_id, <a href="mailto:brand_id, expired date, price.

2NF: brand_id, expired_date, type, price are partially depended because they depend on product_id but not shop_id.

1st: product id, type, brand_id, expired_date, shop_id (FK), price.

2nd: shop id, customer id, employee id, payment id.

3NF: No transitive dependencies found.

Relation Name: Customer.....1......give....*...... Payment

UNF: <u>customer id</u>, name, phone, city, house_no, road_no, <u>payment id</u>, payment_date, amount.

1NF: phone is a multivalued attribute here.

1st: phone, customer id, name, name, customer id, name, name, name, customer id, name, <a h

2NF: payment_date and amount are partially depended because they depend on payment id but not customer id.

1st: <u>customer_id</u>, <u>phone</u>, name, city, house_no, road_no, payment_id(FK).

2nd: <u>payment id</u>, amount, payment_date.

3NF: city and road_no depends on house_no which is a non key attribute.

1st: customer id, phone, name, payment id.

2nd: payment_date(FK).

3rd: <u>customer id</u>, <u>house no</u>, city, road_no.

Relation Name: Shop......1.....take.....*..... Payment

UNF: shop_id, customer_id, employee_id, payment_id, payment_date, amount.

1NF: no multivalued attribute found.

2NF: payment_date and amount are partially depended because they depend on payment id but not shop id.

1st: shop-id, customer_id, employee_id, payment_id(FK) .

2nd: <u>payment id</u>, amount, payment_date.

3NF: No transitive dependencies found.

Relation Name: Shop.....1.... has.....*..... salesman

UNF: <u>salesman_id</u>, salary, salesman_name, <u>shop_id</u>, customer_id, employee_id, <u>payment_id</u>,

1NF: no multivalued attribute found.

1st: <u>salesman_id</u>, salary, salesman_name<u>shop_id</u>, customer_id, employee_id, <u>payment_id</u>.

2NF: salesman_name, salary are partially depended because they depend on salesman id but not Shop id.

1st : salesman id ,shop_id(FK) salary, salesman_name.

2nd: employe id, shop id, employee_name, salesman_id

3NF: No transitive dependencies found.

Final Tables:

```
1st: customer_id (PK), phone (PK), name, payment_id (FK).

2nd: shop_id (PK), customer_id (FK), employee_id (FK), payment_id (FK).

3rd: customer_id (PK), house_no (PK), city, road_no.

4th: brand_id (PK), brand_name.

5th: product_id (PK), type (PK), brand_id (FK), expired_date, shop_id (FK), price. 6th: payment_id (PK), amount, payment_date.
```

7th: salesman_id (PK), salary, salesman_name.

Table Creation:

TABLE: PAYMENT

```
CREATE TABLE PAYMENT
(

PAYMENT_ID VARCHAR2(10),
AMOUNT DECIMAL(6,2),
PAYMENT_DATE DATE,
PRIMARY KEY(PAYMENT_ID)
);
DESC PAYMENT;
```

Results E	xplain Describe	Saved SQL	History						
Object Type	e TABLE Object	PAYMENT							
Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
PAYMENT	PAYMENT_ID	Varchar2	10	127	2	1		2	127
	AMOUNT	Number		6	2	-	/	8	(5)
	PAYMENT_DATE	Date	7	-	2	-	/	12	-
									1-3

TABLE: CUSTOMER

```
CREATE TABLE CUSTOMER
(

CUSTOMER_ID VARCHAR (10),
PHONE NUMBER (15),
NAME VARCHAR2(40),
PAYMENT_ID VARCHAR2(10),
PRIMARY KEY(CUSTOMER_ID)
);
DESC CUSTOMER;
```

Object Type	TABLE Object	CUSTOMER							
Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
CUSTOMER	CUSTOMER_ID	Varchar2	10		-	1	-	-	-
	PHONE	Number	-	15	0		~	-	•
	NAME	Varchar2	40	0	-	-	~	_	_
	PAYMENT_ID	Varchar2	10	-	-		~	-	-
									1 - 4

TABLE: CUSTOMER_ADDRESS

```
CREATE TABLE CUSTOMER_ADDRESS

(
    CUSTOMER_ID VARCHAR2(10),
    HOUSE_NO NUMBER (15),
    CITY VARCHAR2(40),
    ROAD_NO NUMBER (15),
    PRIMARY KEY (CUSTOMER_ID, HOUSE_NO)
);

DESC CUSTOMER_ADDRESS;
```

bject Type TABLE (Object CUSTO	MER_ADDRE	SS						
Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
CUSTOMER_ADDRESS	CUSTOMER_ID	Varchar2	10	-		1		-	-
	HOUSE_NO	Number	*	15	0	2	8	-	-
	CITY	Varchar2	40			2	/	97	
	ROAD NO	Number	*	15	0		/		

TABLE: BRAND

```
CREATE TABLE BRAND
(

BRAND_ID VARCHAR2(10),

BRAND_NAME VARCHAR2(40),

PRIMARY KEY(BRAND_ID)
);

DESC BRAND;
```

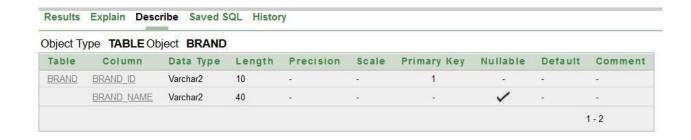


TABLE: SALESMAN

```
CREATE TABLE SALESMAN
(

SALESMAN_ID VARCHAR2(10),
SALARY DECIMAL (6,2),
SALESMAN_NAME VARCHAR2(40),
PRIMARY KEY(SALESMAN_ID)
);
```

DESC SALESMAN;



TABLE: SHOP

```
CREATE TABLE SHOP
(
SHOP_ID VARCHAR2(10),
CUSTOMER_ID VARCHAR2(10),
EMPLOYEE_ID VARCHAR2(10),
PAYMENT_ID VARCHAR2(10),
PRIMARY KEY(SHOP_ID)
)
DESC SHOP;
```

bject T	ype TABLE Ob	ject SHOP							
Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
SHOP	SHOP_ID	Varchar2	10		-2	1	-	B)	-
	CUSTOMER_ID	Varchar2	10			-	/	ē	-
	EMPLOYEE_ID	Varchar2	10	2	-		/	ė.	-
	PAYMENT ID	Varchar2	10				/		-

TABLE: BEAUTY_PRODUCT

```
CREATE TABLE BEAUTY_PRODUCT
(

PRODUCT_ID VARCHAR2(10),

TYPE VARCHAR2(40),

BRAND_ID VARCHAR2(10),

SHOP_ID VARCHAR2(10),

EXPIRED_DATE DATE,

PRICE DECIMAL (6,2),

PRIMARY KEY (PRODUCT_ID, TYPE)
);

DESC BEAUTY_PRODUCT;
```

Object Type TABL	EObject BEAL	JTY_PRODU	CT						
Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
BEAUTY_PRODUCT	PRODUCT_ID	Varchar2	10	3		1	-	-	
	TYPE	Varchar2	40	+		2	-		-
	BRAND_ID	Varchar2	10	2	-	2	/	-	2
	SHOP_ID	Varchar2	10	÷		*	/		÷
	EXPIRED_DATE	Date	7	S	1	2	/	0	e e
	<u>PRICE</u>	Number		6	2	*	/	5	+
									1 - 6

Data Insertion:

DATA INSERTION IN PAYMENT TABLE

INSERT INTO PAYMENT VALUES ('P-001', 560.50, TO_DATE ('19-1-2020', 'DD-MM-YYYY'));
INSERT INTO PAYMENT VALUES ('P-002', 700.00, TO_DATE ('25-3-2020', 'DD-MM-YYYY'));
INSERT INTO PAYMENT VALUES ('P-003', 420.69, TO_DATE ('4-6-2020', 'DD-MM-YYYY'));
INSERT INTO PAYMENT VALUES ('P-004', 959.00, TO_DATE ('22-8-2020', 'DD-MM-YYYY'));
INSERT INTO PAYMENT VALUES ('P-005', 1110.00, TO_DATE ('27-10-2020', 'DD-MM-YYYY'));

SELECT * FROM PAYMENT;

Results Expla	in Describe	Saved SQL Histor
PAYMENT_ID	AMOUNT	PAYMENT_DATE
P-001	560.5	19-JAN-20
P-002	700	25-MAR-20
P-003	420.69	04-JUN-20
P-004	959	22-AUG-20
P-005	1110	27-OCT-20

5 rows returned in 0.02 seconds

CSV Export

DATA INSERTION IN CUSTOMER TABLE

INSERT INTO CUSTOMER VALUES ('C-001', 01238746283, 'Asad', 'P-001');
INSERT INTO CUSTOMER VALUES ('C-002', 01562857365, 'Rongon', 'P-002');
INSERT INTO CUSTOMER VALUES ('C-003', 01468358638, 'Jim', 'P-003');
INSERT INTO CUSTOMER VALUES ('C-004', 01936473678, 'Sheam', 'P-004'); INSERT INTO CUSTOMER VALUES ('C-005', 01748368352, 'Omi', 'P-005');
SELECT * FROM CUSTOMER;

Results	Explain	Describe	Saved SQL	History
CUSTO	MER_ID	PHONE	NAME	PAYMENT_ID
C-001		1238746283	Asad	P-001
C-002		1562857365	Rongon	P-002
C-003		1468358638	Jim	P-003
C-004		1936473678	Sheam	P-004
C-005		1748368352	Omi	P-005

5 rows returned in 0.00 seconds

CSV Export

DATA INSERTION IN CUSTOMER ADDRESS TABLE

INSERT INTO CUSTOMER_ADDRESS VALUES ('C-001', 1342, 'Dhaka', 3); INSERT INTO CUSTOMER_ADDRESS VALUES ('C-002', 2411, 'Chittagong', 3); INSERT INTO CUSTOMER_ADDRESS VALUES ('C-003', 8432, 'Dhaka', 7); INSERT INTO CUSTOMER_ADDRESS VALUES ('C-004', 7326, 'Cumilla', 5); INSERT INTO CUSTOMER_ADDRESS VALUES ('C-005', 1514, 'Noakhali', 8);

SELECT * FROM CUSTOMER_ADDRESS;

Results Explain Describe Saved SQL History

CUSTOMER_ID	HOUSE_NO	CITY	ROAD_NO
C-001	1342	Dhaka	3
C-002	2411	Chittagong	3
C-003	8432	Dhaka	7
C-004	7326	Cumilla	5
C-005	1514	Noakhali	8

5 rows returned in 0.00 seconds

CSV Export

DATA INSERTION IN BRAND TABLE

INSERT INTO BRAND VALUES ('B-001', 'Dove');

INSERT INTO BRAND VALUES ('B-002', 'Lakme');

INSERT INTO BRAND VALUES ('B-003', 'Ponds');

INSERT INTO BRAND VALUES ('B-004', 'Body Shop');

INSERT INTO BRAND VALUES ('B-005', 'Mac');

SELECT * FROM BRAND;

Results	Explain	Describe	Saved SQL	History
BRAND	ID BR	AND_NAMI	E	
B-001	Dov	re		
B-002	Lak	me		
B-003	Por	nds		
B-004	Boo	dy Shop		
B-005	Ma	С		
rows re	turned in	0.00 secon	ds CS\	/ Export

DATA INSERTION IN SALESMAN TABLE

INSERT INTO SALESMAN VALUES ('S-001', 2550, 'Rita');

INSERT INTO SALESMAN VALUES ('S-002', 2366, 'Masum');

INSERT INTO SALESMAN VALUES ('S-003', 2222, 'Murad');

INSERT INTO SALESMAN VALUES ('S-004', 2266, 'Jim');

SELECT * FROM SALESMAN;

Results Explain	Describe	Saved SQL History
SALESMAN_ID	SALARY	SALESMAN_NAME
S-001	2550	Rita
S-002	2366	Masum
S-003	2222	Murad
S-004	2266	Jim

DATA INSERTION IN SHOP TABLE

INSERT INTO SHOP VALUES ('SHOP-001', 'C-001', 'E-001', 'P-001');
INSERT INTO SHOP VALUES ('SHOP-002', 'C-002', 'E-002', 'P-002');
INSERT INTO SHOP VALUES ('SHOP-003', 'C-003', 'E-003', 'P-003'); INSERT INTO SHOP VALUES ('SHOP-004', 'C-004', 'E-004', 'P-004');
INSERT INTO SHOP VALUES ('SHOP-005', 'C-005', 'E-005', 'P-005');

SELECT * FROM SHOP;

SHOP_ID	CUSTOMER_ID	EMPLOYEE_ID	PAYMENT_ID
SHOP-001	C-001	E-001	P-001
SHOP-002	C-002	E-002	P-002
SHOP-003	C-003	E-003	P-003
SHOP-004	C-004	E-004	P-004
SHOP-005	C-005	E-005	P-005

DATA INSERTION IN BEAUTY_PRODUCT TABLE

INSERT INTO BEAUTY_PRODUCT VALUES ('PRO-005', 'Soap', 'B-005', 'SHOP-005', TO_DATE ('2710-2031', 'DDMM-YYYY'), 1515);

INSERT INTO BEAUTY_PRODUCT VALUES ('PRO-004', 'Hair Color', 'B-004', 'SHOP-004', TO_DATE ('27-102031', 'DD-MM-YYYY'), 5955);

INSERT INTO BEAUTY_PRODUCT VALUES ('PRO-003', 'Shampoo', 'B-003', 'SHOP-003', TO_DATE ('27-102030', 'DD-MM-YYYY'), 7364);

INSERT INTO BEAUTY_PRODUCT VALUES ('PRO-001','Sebumb', 'B-002', 'SHOP-002', TO_DATE ('2710-2029', 'DD-MM-YYYY'),5463);

SELECT * FROM BEAUTY_PRODUCT;

esults Explain	Describe	Saved SQL	History		
PRODUCT_ID	TYPE	BRAND_ID	SHOP_ID	EXPIRED_DATE	PRICE
PRO-005	Soap	B-005	SHOP-005	27-OCT-31	1515
PRO-004	Hair Color	B-004	SHOP-004	27-OCT-31	5955
PRO-003	Shampoo	B-003	SHOP-003	27-OCT-30	7364
PRO-001	Sebumb	B-002	SHOP-002	27-OCT-29	5463

4 rows returned in 0.00 seconds

CSV Export

CONSTRAINT:

- 1. ALTER TABLE PAYMENT ADD CONSTRAINT PRIMARY KEY(PAYMENT ID) REFERANCE SHOP (PRODUCT);
- 2. ALTER TABLE CUSTOMER ADD CONSTRAINT PRIMARY KEY(CUSTOMER_ID) REFERANCE SHOP (PRODUCT_ID);
- 3. ALTER TABLE CUSTOMER_ADDRESS ADD CONSTRAINT PRIMARY KEY (CUSTOMER ID, HOUSE NO) REFERANCE SHOP (PRODUCT ID);
- 4. ALTER TABLE BRAND ADD CONSTRAINT PRIMARY KEY(BRAND_ID) REFERANCE BRAND (BRAND_NAME);
- 5.ALTER TABLE SALESMAN ADD CONSTRAINT PRIMARY KEY(SALESMAN_ID) REFERANCE CUSTOMER (CUSTOMER_ID);

- 6.ALTER TABLE SHOP ADD CONSTRAINT PRIMARY KEY(SHOP_ID) REFERANCE SHOP (SHOP_ID);
- 7. ALTER TABLE BEAUTY_PRODUCT ADD CONSTRAINT PRIMARY KEY (PRODUCT_ID, TYPE) REFERANCE BRAND (BRAND_ID);

JOINING TABLES

1. Write a query which will show the customer id, phone, name, city, house number.

SELECT

CUSTOMER.CUSTOMER_ID, CUSTOMER.PHONE, CUSTOMER.NAME, CUSTOME R_ADDRESS.CITY, CUSTOMER_ADDRESS.HOUSE_NO FROM CUSTOMER, CUSTOMER_ADDRESS WHERE CUSTOMER.CUSTOMER ID=CUSTOMER ADDRESS.CUSTOMER_ID;

Results Explain	Describe	Saved SQL	History	
CUSTOMER_ID	PHONE	NAME	CITY	. HOUSE_NO
C-001	1238746283	Asad	Dhaka	1342
C-002	1562857365	Rongon	Chittagong	2411
C-003	1468358638	Jim	Dhaka	8432
C-004	1936473678	Sheam	Cumilla	7326
C-005	1748368352	Omi	Noakhali	1514

5 rows returned in 0.03 seconds

CSV Export

2. Write a query which will show brand id, brand name, type, price.

SELECT BRAND.BRAND_ID, BRAND.BRAND_NAME, BEAUTY_PRODUCT.TYPE, BEAUTY_PRODUCT.PRICE
FROM BRAND, BEAUTY_PRODUCT
WHERE BRAND.BRAND_ID = BEAUTY_PRODUCT.BRAND_ID;

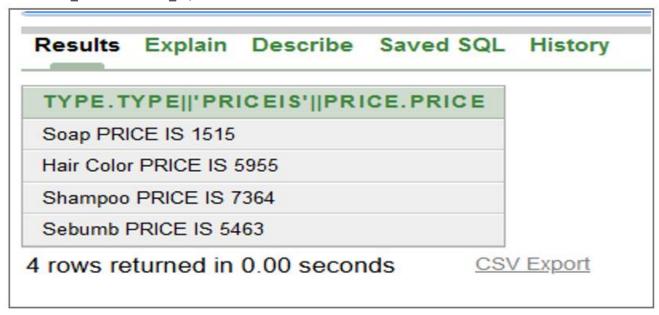
Results	Explain	Describe	Saved SQL	History
BRAND_	ID BR	RAND_NAME	TYPE	PRICE
B-002	Lak	cme	Sebumb	5463
B-003	Poi	nds	Shampoo	7364
B-004	Во	dy Shop	Hair Color	5955
B-005	Ma	С	Soap	1515

4 rows returned in 0.02 seconds

CSV Export

3. Write a query which will show product price.

SELECT TYPE.TYPE || 'PRICE IS' || PRICE.PRICE FROM BEAUTY_PRODUCT TYPE, BEAUTY_PRODUCT PRICE WHERE TYPE.SHOP_ID=PRICE.SHOP_ID;



SUB QUERY

1. Select all the customers who live in Dhaka.

SELECT CUSTOMER.NAME, CUSTOMER_ADDRESS.CITY from

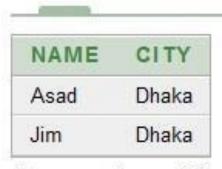
CUSTOMER, CUSTOMER_ADDRESS

WHERE CUSTOMER.CUSTOMER_ID = CUSTOMER_ADDRESS.CUSTOMER_ID AND

CUSTOMER.CUSTOMER_ID = ANY (SELECT CUSTOMER_ID

FROM CUSTOMER_ADDRESS

WHERE CITY = 'Dhaka');



2 rows returned in 0.00 seconds

CSV Export

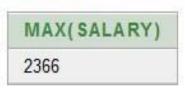
2. Select product id, type, brand id which price more than any payment amount.

SELECT PRODUCT_ID, TYPE, BRAND_ID
FROM BEAUTY_PRODUCT
WHERE PRICE > ANY (SELECT AMOUNT FROM PAYMENT);

Results Explain	Describe	Saved SQL	History
PRODUCT_ID	TYPE	BRAND_ID	
PRO-003	Shampoo	B-003	
PRO-004	Hair Color	B-004	
PRO-001	Sebumb	B-002	
PRO-005	Soap	B-005	

3. Display the first maximum salary from salesman.

SELECT MAX(SALARY)
FROM SALASMAN
WHERE SALARY < (SELECT MAX(SALARY)
FROM SALASMAN);



1 rows returned in 0.01 seconds

CSV Export

Group Function

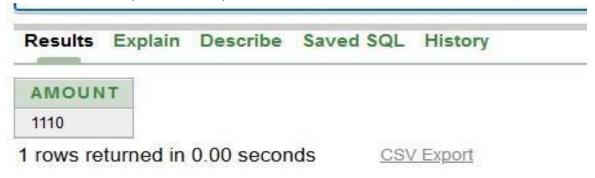
1. Write a query to find the average salary of Salesman.

SELECT AVG(SALARY) FROM SALESMAN;



2. Write a query to find the maximum payment.

SELECT MAX(AMOUNT) AS AMOUNT FROM PAYMENT;



VIEW

1. Create a view named special beauty product where breauty product price is more than 1000

CREATE VIEW SPECIAL_BEAUTY_PRODUCT AS SELECT PRODUCT_ID, TYPE, BRAND_ID, SHOP_ID, PRICE FROM BEAUTY_PRODUCT WHERE PRICE>1000;

PRODUCT_ID	TYPE	BRAND_ID	SHOP_ID	PRICE
PR0-005	Soap	B-005	SH0P-005	1515
PR0-004	Hair Color	B-004	SH0P-004	5955
PR0-003	Shampoo	B-003	SH0P-003	7364

2. Create a view named poor salesman who get salary less than 3000.

CREATE VIEW POOR_SALESMAN AS SELECT SALESMAN_ID, SALARY, SALESMAN_NAME FROM SALESMAN WHERE 3000>SALARY;

SALESMAN_ID	SALARY	SALESMAN_NAME
S-001	2550	Rita
S-002	2366	Masum
S-003	2222	Murad

OTHERS

1. Write a query to display the salesman name and salary whose name start with R or J.

SELECT SALESMAN_NAME, SALARY FROM SALESMAN WHERE SALESMAN_NAME LIKE ('R%') OR SALESMAN_NAME LIKE ('J%');



2.Write a query to find the product name and expired date which price more than 1000 and expired date 27-oct-31. SELECT TYPE, EXPIRED_DATE FROM BEAUTY_PRODUCT WHERE PRICE>1000 AND EXPIRED_DATE='27-OCT-31';

