AMERICAN INTERNATIONAL UNIVERSITY-BANGLADESH
Faculty of Science and Technology

Project Cover Page

Assignment Title:	Project on Art Gallery DBMS		
Assignment No:	N/A	Date of Submission:	11 December 2022
Course Title:	**INTRODUCTION TO DATABASE**		
Course Code:	**CSC 2108**	Section:	J
Semester:	Fall 2022-23	Course Teacher:	SIFAT RAHMAN AHONA

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Group Name/No.:   1

No	Name	ID	Program	Signature
1	SHAFI BIN MAHMUD	22-45994-1	BSc [CSE]	
2	FAISHAL UDDIN HIMEL	22-45996-1	BSc [CSE]	
3	MD. TAHSIN HASIB	22-46026-1	BSc [CSE]	
4	NISHAT TASNIM	22-46034-1	BSc [CSE]	
5			Choose an item.	
6			Choose an item.	
7			Choose an item.	
8			Choose an item.	
9			Choose an item.	
10			Choose an item.	

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FACULTYCOMMENTS	Marks Obtained	
	Total Marks	

CASE STUDY ON ART GALLERY:

Ahare Arts is an extravagant art gallery situated in Dhanmondi, Dhaka. Artists enlisted by the gallery can showcase their arts.
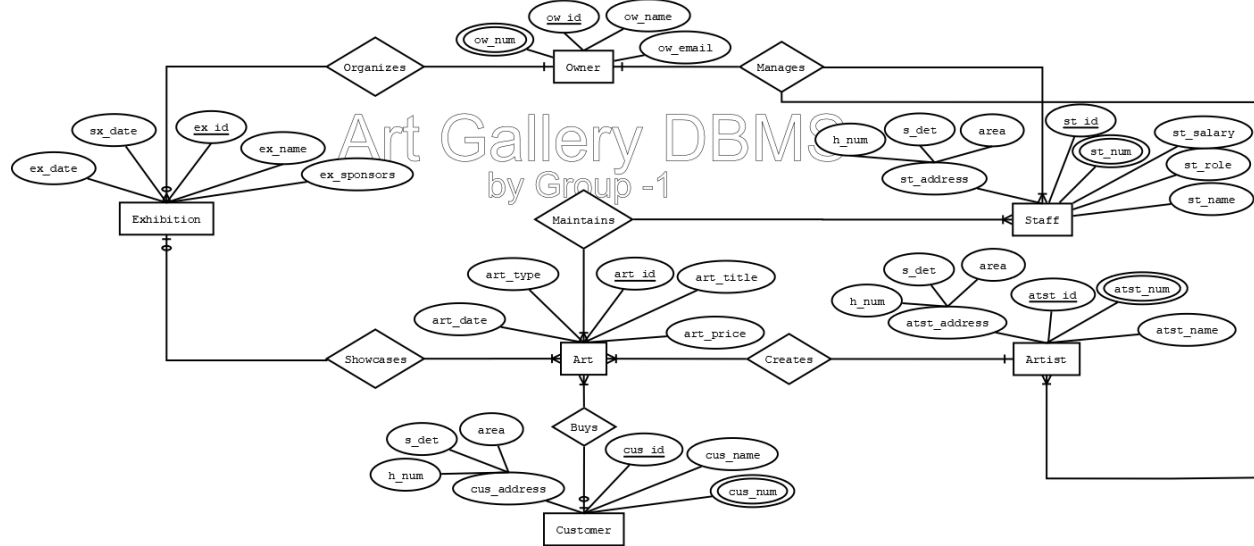
In the management system that shall be operated for it, artists are identified according to their <u>unique artist ID</u> and their names, addresses and phone numbers are also stored. Addresses are composed of house number, street details and area. The <u>unique art ID</u> of each individual art is stored in the database. The title of the art along with the date of completion of the art, type of the art and price of the art is also recorded. Artists must have created at least one art but an art can have only one artist.

The gallery administration consists of the owner and staffs. The owners have only their <u>unique owner ID</u>, name, email address and phone number stored and manages the artists and staffs of the gallery. The system records name, address, phone number, role, salary and the <u>unique staff ID</u> of each individual staff who works for the gallery. These addresses are also composed of house number, street details and area. Staffs look after and maintain the artistic integrity of the arts in the gallery through regular routine checks. Multiple staffs can maintain multiple arts. Once a routine check is successfully conducted, a routine check number is generated and recorded in the system.

The owner can organize exhibitions and arts are showcased at exhibitions. The owner may organize multiple exhibitions or may not organize any at all. Exhibitions must showcase at least one art but an art may not be showcased or can be showcased at one exhibition only. The <u>unique exhibition ID</u>, starting date, ending date, names of sponsors and the exhibition name is stored by the system.

Customers can buy the arts showcased. A receipt number is generated and stored once a customer buys an art. A customer can buy many arts but an art may not be bought or can be bought by one customer only. The <u>unique ID</u> of each customer and their name, address and phone number are also stored. The addresses of customers consist of house number, street details and area.

Art Gallery DBMS
by Group -1

Owner — ow_id, ow_name, ow_num, ow_email

Organizes (Owner — Exhibition)

Manages (Owner — Staff)

Exhibition — sx_date, ex_id, ex_name, ex_date, ex_sponsors

Staff — h_num, s_det, area, st_address, st_id, st_num, st_salary, st_role, st_name

Maintains (Exhibition — Staff)

Art — art_type, art_id, art_title, art_date, art_price

Artist — s_det, area, h_num, atst_address, atst_id, atst_num, atst_name

Showcases (Exhibition — Art)

Creates (Art — Artist)

Buys (Art — Customer)

Customer — s_det, area, h_num, cus_address, cus_id, cus_name, cus_num

INTRODUCTION TO DATABASE [J]

Normalization for Group 1's project on Art Gallery

NAME	SHAFI BIN MAHMUD	FAISHAL UDDIN HIMEL	MD. TAHSIN HASIB	NISHAT TASNIM
ID	22-45994-1	22-45996-1	22-46026-1	22-46034-1

- organizes (<u>ex_id,</u> ex_date, sx_date, ex_name, ex_sponsors, <u>ow_id</u>, ow_name, ow_num, ow_email)

  1NF: ow_num multivalued attribute

  2NF: <u>ex_id</u>, ex_date, sx_date, ex_name, ex_sponsors, ow_id

  <u>ow_id</u>, ow_name, ow_num, ow_email

  3NF: No transitive dependency

  <u>ex_id</u>, ex_date, sx_date, ex_name, ex_sponsors, ow_id

  <u>ow_id</u>, ow_name, ow_num, ow_email

  Table: <u>ex_id</u>, ex_date, sx_date, ex_name, ex_sponsors, ow_name

  <u>ow_id</u>, ow_name ow_num, ow_email

- showcases (<u>ex_id</u>, ex_date, sx_date, ex_name, ex_sponsors, <u>art_id</u>, art_type, art_date, art_title, art_price)

  1NF: No multivalued attribute

  2NF: <u>ex_id</u>, ex_date, sx_date, ex_name, ex_sponsors

  <u>art_id</u>, art_date, art_type, art_title, art_price, ex_id

  3NF: No transitive dependency

  <u>ex_id</u>, ex_date, sx_date, ex_name, ex_sponsors

  <u>art_id</u>, art_date, art_type, art_title, art_price, ex_id

  Table: <u>ex_id</u>, ex_date, sx_date, ex_name, ex_sponsors

  <u>art_id</u>, art_date, art_type, art_title, art_price, ex_id

- maintains (<u>art_id</u>, art_date, art_type, art_title, art_price, <u>st_id</u>, st_address, st_salary, st_num, st_role, st_name)

  1NF: st_num multivalued attribute

  2NF: <u>st_id</u>, st_address, st_salary, st_num, st_role, st_name

  <u>art_id</u>, art_date, art_type, art_title, art_price

  <u>artst_id</u>, art_id, st_id

  3NF: No transitive dependency

  <u>st_id</u>, st_address, st_salary, st_num, st_role, st_name

  <u>art_id</u>, art_date, art_type, art_title, art_price

  <u>artst_id</u>, art_id, st_id

  table: <u>st_id</u>, st_address, st_salary, st_num, st_role, st_name

  <u>art_id</u>, art_date, art_type, art_title, art_price

  <u>artst_id</u>, art_id, st_id

- buys (<u>art_id</u>, art_date, art_type, art_title, art_price, <u>cus_id</u>, cus_num, cus_address, cus_name)

  1NF: cus_num multivalued attribute

  2NF: <u>art_id</u>, art_date, art_type, art_title, art_price, cus_id

  <u>cus_id</u>, cus_num, cus_address, cus_name,

  3NF: No transitive dependency

  <u>art_id</u>, art_date, art_ type, art_title, art_price, cus_id

  <u>cus_id</u>, cus_num, cus_address, cus_name,

  Table: <u>art_id</u>, art_date, art_ type, art_title, art_price, cus_id

  <u>cus_id</u>, cus_num, cus_address, cus_name

- creates (<u>art_id</u>, art_date, art_type, art_title, art_price, <u>atst_id,</u> atst_address, atst_num, atst_name)

  1NF: atst_num multivalued attribute

  2NF: <u>art_id</u>, art_date, art_type, art_title, art_price, atst_id

             <u>atst_id,</u> atst_address, atst_num, atst_name

  3NF: No transitive dependency

             <u>art_id</u>, art_date, art_type, art_title, art_price, atst_id

             <u>atst_id,</u> atst_address, atst_num, atst_name

  Table: <u>art_id</u>, art_date, art_type, art_title, art_price, atst_id

             <u>atst_id</u>, atst_address, atst_num, atst_name

- manages (<u>ow_id</u>, ow_name, ow_num, ow_email, <u>st_id</u>, st_address, st_salary, st_num, st_role, st_name)

  1NF: ow_num multivalued attribute

  2NF: <u>ow_id</u>, ow_name, ow_num, ow_email

             <u>st_id</u>, st_address, st_salary, st_num, st_role, st_name, ow_id

  3NF: No transitive dependency

             <u>ow_id</u>, ow_name, ow_num, ow_email

             <u>st_id</u>, st_address, st_salary, st_num, st_role, st_name, ow_id

  Table: <u>ow_id,</u> ow_name, ow_num, ow_email

             <u>st_id</u>, st_address, st_salary, st_num, st_role, st_name, ow_id

- manages (ow_id, ow_name, ow_num, ow_email, <u>atst_id,</u> atst_address, atst_num, atst_name)

  1NF: ow_num, atst_num multivalued attribute

  2NF: <u>ow_id</u>, ow_name, ow_num, ow_email

         <u>atst_id,</u> atst_address, atst_num, atst_name, ow_id

  3NF: No transitive dependency

         <u>ow_id,</u> ow_name, ow_num, ow_email

         <u>atst_id,</u> atst_address, atst_num, atst_name, ow_name

  Table: <u>ow_id</u>, ow_name, ow_num, ow_email

         <u>atst_id</u>, atst_address, atst_num, atst_name

- <u>TOTAL TABLE:</u>
1. <u>ex_id</u>, ex_date, sx_date, ex_name, ex_sponsors, ow_id
2. <u>ow_id</u>, ow_name, ow_num, ow_email
3. <u>ex_id</u>, ex_date, sx_date, ex_name, ex_sponsors
4. <u>art_id</u>, art_date, art_type, art_title, art_price, ex_id
5. <u>st_id</u>, st_address, st_salary, st_num, st_role, st_name
6. <u>art_id</u>, art_date, art_type, art_title, art_price
7. <u>artst_id</u>, art_id, st_id
8. <u>art_id</u>, art_date, art_ type, art_title, art_price, cus_id
9. <u>cus_id</u>, cus_num, cus_address, cus_name
10. <u>art_id</u>, art_date, art_type, art_title, art_price, atst_id
11. <u>atst_id</u>, atst_address, atst_num, atst_name
12. <u>ow_id</u>, ow_name, ow_num, ow_email
13. <u>st_id</u>, st_address, st_salary, st_num, st_role, st_name, ow_id
14. <u>ow_id</u>, ow_name, ow_num, ow_email
15. <u>atst_id</u>, atst_address, atst_num, atst_name

- FINAL TABLE:
1. <u>ex_id</u>, ex_date, sx_date, ex_name, ex_sponsors, ow_id
2. <u>ow_id</u>, ow_name, ow_num, ow_email
3. <u>art_id</u>, art_date, art_type, art_title, art_price, ex_id
4. <u>artst_id</u>, art_id, st_id
5. <u>art_id</u>, art_date, art_ type, art_title, art_price, cus_id
6. <u>cus_id</u>, cus_num, cus_address, cus_name
7. <u>art_id</u>, art_date, art_type, art_title, art_price, atst_id
8. <u>atst_id</u>, atst_address, atst_num, atst_name
9. <u>st_id</u>, st_address, st_salary, st_num, st_role, st_name, ow_id

ORACLE Database Express Edition

User: AHARE

☑ Autocommit   Display [10 ▾]   Save   Run

```
select * from exhibitions


1.
create table owners (
    ow_id NUMBER(10) CONSTRAINT ow_id_pk PRIMARY KEY,
    ow_name VARCHAR2(20),
    ow_num NUMBER(11),
    ow_email VARCHAR2(20)
);
insert into owners values (101, 'Tahsan', 01497957686,'tahsin@gmail.com')
insert into owners values (102, 'Shafi', 01390889456,'shafi@outlook.com')
insert into owners values (103, 'Himalaya', 01395673823,'himalaya@yahoo.com')
insert into owners values (104, 'Faishal', 01334287452,'faishal@gmail.com')
insert into owners values (105, 'Towhid', 01983475239,'towhid@gmail.com')
select * from owners
```

Results   Explain   Describe   Saved SQL   History

OW_ID	OW_NAME	OW_NUM	OW_EMAIL
101	Tahsan	1497957686	tahsin@gmail.com
102	Shafi	1390889456	shafi@outlook.com
103	Himalaya	1395673823	himalaya@yahoo.com
104	Faishal	1334287452	faishal@gmail.com
105	Towhid	1983475239	towhid@gmail.com
106	Nishat	1589342353	nishat@abcmail.com
107	Joya	1482862342	joya@gmail.com
108	Nub	1872642874	nubmishal@gmail.com
109	Habibi	1682348234	habibi@gmail.com
110	Abdullah	1392452343	abdullah@hotmail.com

10 rows returned in 0.00 seconds   CSV Export

Language: en-us   Application Express 2.1.0.00.39

ORACLE Database Express Edition

User: AHARE

☑ Autocommit   Display [10 ▾]   Save   Run

```
5.
CREATE TABLE arts_customer (
    art_id NUMBER(10) CONSTRAINT art_customer_id_pk PRIMARY KEY,
    art_date VARCHAR2(20),
    art_type VARCHAR2(20),
    art_title VARCHAR2(20),
    art_price FLOAT,
    cus_id NUMBER(10) CONSTRAINT art_cus_id_fk REFERENCES customers(cus_id)
);
insert into arts_customer values (105,'01-SEP-15','Portrait', 'Blackout',13000.5,107)
insert into arts_customer values (202,'05-DEC-02','Oil', 'The Starry Night ',3500000.0,109)
insert into arts_customer values (303,'09-AUG-08','Oil', 'Dracontine',1200.5,301)
insert into arts_customer values (404,'10-JUL-09','Acrylic', 'Milkwood Arcade',10500.5,302)
insert into arts_customer values (505,'22-OCT-17','Portrait', 'Kirkconnrll Flow',150000.5,303)
select * from arts_customer

4.
```

Results   Explain   Describe   Saved SQL   History

ART_ID	ART_DATE	ART_TYPE	ART_TITLE	ART_PRICE	CUS_ID
105	01-SEP-15	Portrait	Blackout	13000.5	107
202	05-DEC-02	Oil	The Starry Night	3500000	109
303	09-AUG-08	Oil	Dracontine	1200.5	301
404	10-JUL-09	Acrylic	Milkwood Arcade	10500.5	302
505	22-OCT-17	Portrait	Kirkconnrll Flow	150000.5	303
101	14-AUG-01	Acrylic	Desert Spring	540.5	105
106	21-SEP-05	Acrylic	White flag	335.5	102
109	24-OCT-19	Acrylic	The Sistine Chapel	4900.5	309
110	30-AUG-22	Genre Painting	Quentin Metsys	550.5	330
506	11-DEC-20	Spray Paint	Essential Graphics	300.5	333

10 rows returned in 0.00 seconds   CSV Export

ORACLE Database Express Edition

Home   Logout   Help

User: AHARE

Home > SQL > SQL Commands

☑ Autocommit   Display [10 ▼]   Save   Run

```
select * from customers


7.
CREATE TABLE arts_artist (
    art_id NUMBER(10) CONSTRAINT arts_artists_id_pk PRIMARY KEY,
    art_date VARCHAR2(20),
    art_type VARCHAR2(20),
    art_title VARCHAR2(20),
    art_price FLOAT,
    atst_id NUMBER(10) CONSTRAINT atst_id_fk REFERENCES artists(atst_id)
);
insert into arts_artist values (101,'01-SEP-15','Portrait', 'Blackout',13000.5, 301)
insert into arts_artist values (102,'05-DEC-02','Oil', 'The Starry Night ',3500000.0, 105)
insert into arts_artist values (103,'09-AUG-08','Oil', 'Dracontine',1200.5, 103)
insert into arts_artist values (401,'10-JUL-09','Acrylic', 'Milkwood Arcade',10500.5, 109)
insert into arts_artist values (222,'22-OCT-17','Portrait', 'Kirkconnrll Flow',150000.5, 104)
select * from arts_artist
```

Results   Explain   Describe   Saved SQL   History

ART_ID	ART_DATE	ART_TYPE	ART_TITLE	ART_PRICE	ATST_ID
101	01-SEP-15	Portrait	Blackout	13000.5	301
102	05-DEC-02	Oil	The Starry Night	3500000	105
103	09-AUG-08	Oil	Dracontine	1200.5	103
401	10-JUL-09	Acrylic	Milkwood Arcade	10500.5	109
222	22-OCT-17	Portrait	Kirkconnrll Flow	150000.5	104
306	14-AUG-01	Acrylic	Desert Spring	540.5	101
507	21-SEP-05	Acrylic	White flag	335.5	106
908	24-OCT-19	Acrylic	The Sistine Chapel	4900.5	501
100	11-DEC-20	Spray Paint	Essential Graphics	300.5	401
110	30-AUG-22	Genre Painting	Quentin Metsys	550.5	501

10 rows returned in 0.01 seconds   CSV Export

Application Express 2.1.0.00.39

Language: en-us   Copyright © 1999, 2006, Oracle. All rights reserved.

SQL Commands   ×   +

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ORACLE Database Express Edition

Home   Logout   Help

User: AHARE

Home > SQL > SQL Commands

☑ Autocommit   Display [10 ▼]   Save   Run

```
3.
create table exhibitions (
    ex_id NUMBER(10) CONSTRAINT ex_id_pk PRIMARY KEY,
    ex_date VARCHAR2(20),
    sx_date VARCHAR2(20),
    ex_name VARCHAR2(20),
    ex_sponsors VARCHAR2(20),
    ow_id NUMBER(10) CONSTRAINT ow_name_fk REFERENCES owners(ow_id)
);
insert into exhibitions values (101,'17-SEP-2015','01-JUN-2015','The Art City','Adidas',101)
insert into exhibitions values (105,'01-JAN-2018','10-AUG-2017','Context House','Nike',102)
insert into exhibitions values (107,'19-DEC-2005','30-JUN-2005','Paper Threads','Victorias Secret', 103)
insert into exhibitions values (203,'12-JUL-2014','13-JAN-2014','Vivid Delight','Apple, Inc.',104)
insert into exhibitions values (204,'22-NOV-2006','23-SEP-2006','Artvago','DeLorean Company',105)
select * from exhibitions
```

Results   Explain   Describe   Saved SQL   History

EX_ID	EX_DATE	SX_DATE	EX_NAME	EX_SPONSORS	OW_ID
101	17-SEP-2015	01-JUN-2015	The Art City	Adidas	101
105	01-JAN-2018	10-AUG-2017	Context House	Nike	102
107	19-DEC-2005	30-JUN-2005	Paper Threads	Victorias Secret	103
203	12-JUL-2014	13-JAN-2014	Vivid Delight	Apple, Inc.	104
204	22-NOV-2006	23-SEP-2006	Artvago	DeLorean Company	105
205	15-FEB-2010	30-DEC-2009	ArtistMart	Nike	106
206	06-DEC-2023	15-JUL-2022	Astrophotography	Supreme	107
108	10-MAY-2021	10-JAN-2021	Weird Gallery	Redbull	108
109	08-DEC-2016	30-JUN-2016	Art Genics	Calvin Klein	109
208	20-DEC-2013	01-AUG-2013	Patronizing	Citigroup	110

10 rows returned in 0.00 seconds   CSV Export

☑ Autocommit   Display [10 ▼]   [Save] [Run]

```
insert into arts_customer values (505,'22-OCT-17','Portrait', 'Kirkconnrll Flow',150000.5,303)
select * from arts_customer


4.
CREATE TABLE customers (
    cus_id NUMBER(10) CONSTRAINT cus_id_pk PRIMARY KEY,
    cus_num NUMBER(11),
    cus_address VARCHAR2(20),
    cus_name VARCHAR2(20)
);
insert into customers values (107,01762014626,'Mirpur-14','Yasmin')
insert into customers values (109,01348553443,'Banasree','Tahsan')
insert into customers values (301,01641454788,'Kuril','Zerin')
insert into customers values (302,01582657791,'Jashimuddin Avenue','Jamal')
insert into customers values (303,01738874537,'Dhanmondi','Nur')
select * from customers
```

Results Explain Describe Saved SQL History

CUS_ID	CUS_NUM	CUS_ADDRESS	CUS_NAME
107	1762014626	Mirpur-14	Yasmin
109	1348553443	Banasree	Tahsan
301	1641454788	Kuril	Zerin
302	1582657791	Jashimuddin Avenue	Jamal
303	1738874537	Dhanmondi	Nur
105	1791586256	Banani	Marhaba
102	1802431027	Tejgaon	Shakib
309	1387922175	Rampura	Meraj
333	1825134890	Badda	Raian
330	1958663717	Kuril	Hridoy

10 rows returned in 0.00 seconds   CSV Export

SQL Commands   ×   +

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M Gmail ▶ YouTube 🌐 Maps

☑ Autocommit   Display [10 ▼]   [Save] [Run]

```
select * from owners

8.
CREATE TABLE arts_exhibition (
    art_id NUMBER(10) CONSTRAINT art_id_pk PRIMARY KEY,
    art_date VARCHAR2(20),
    art_type VARCHAR2(20),
    art_title VARCHAR2(20),
    art_price FLOAT,
    ex_id NUMBER(10) CONSTRAINT arts_ex_id_fk REFERENCES exhibitions(ex_id)
);
insert into arts_exhibition values (222,'01-SEP-15','Portrait', 'Blackout',13000.5,101)
insert into arts_exhibition values (333,'05-DEC-02','Oil', 'The Starry Night ',3500000.0,105)
insert into arts_exhibition values (101,'09-AUG-08','Oil', 'Dracontine',1200.5,107)
insert into arts_exhibition values (401,'10-JUL-09','Acrylic', 'Milkwood Arcade',10500.5,203)
insert into arts_exhibition values (105,'22-OCT-17','Portrait', 'Kirkconnrll Flow',150000.5,204)
select * from arts_exhibition
```

Results Explain Describe Saved SQL History

ART_ID	ART_DATE	ART_TYPE	ART_TITLE	ART_PRICE	EX_ID
222	01-SEP-15	Portrait	Blackout	13000.5	101
333	05-DEC-02	Oil	The Starry Night	3500000	105
101	09-AUG-08	Oil	Dracontine	1200.5	107
401	10-JUL-09	Acrylic	Milkwood Arcade	10500.5	203
105	22-OCT-17	Portrait	Kirkconnrll Flow	150000.5	204
108	14-AUG-01	Acrylic	Desert Spring	540.5	205
107	21-SEP-05	Acrylic	White flag	335.5	206
201	24-OCT-19	Acrylic	The Sistine Chapel	4900.5	108
750	11-DEC-20	Spray Paint	Essential Graphics	300.5	109
450	30-AUG-22	Genre Painting	Quentin Metsys	550.5	208

10 rows returned in 0.00 seconds   CSV Export

☑ Autocommit Display [10 ▼]   Save   Run

```
2.
CREATE TABLE staffs (
    st_id NUMBER(10) CONSTRAINT st_id_pk PRIMARY KEY,
    st_address VARCHAR2(20),
    st_salary FLOAT,
    st_num NUMBER(11),
    st_role VARCHAR2(20),
    st_name VARCHAR2(20),
    ow_id NUMBER(10) CONSTRAINT ow_id_fk REFERENCES owners(ow_id)
);
insert into staffs values (121,'Aftabanagar', 15000, 01827497171, 'Janitor', 'Harbor', 101)
insert into staffs values (102,'Mirpur', 15000, 01827532171, 'Janitor', 'Karim', 102)
insert into staffs values (122,'Savar', 15000, 01424297171, 'Janitor', 'Jannat', 103)
insert into staffs values (104,'Gazipur', 25000, 01827789671, 'Customer Service', 'Mahima', 104)
insert into staffs values (105,'Kalshi', 20000, 01827412371, 'Receptionist', 'Angel', 105)
select * from staffs
```

Results Explain Describe Saved SQL History

ST_ID	ST_ADDRESS	ST_SALARY	ST_NUM	ST_ROLE	ST_NAME	OW_ID
121	Aftabanagar	15000	1827497171	Janitor	Harbor	101
102	Mirpur	15000	1827532171	Janitor	Karim	102
122	Savar	15000	1424297171	Janitor	Jannat	103
104	Gazipur	25000	1827789671	Customer Service	Mahima	104
105	Kalshi	20000	1827412371	Receptionist	Angel	105
106	Bashundhara	30000	1827456971	Accountant	Mushfique	106
123	Aftabanagar	40000	1598497171	Marketing Manager	Saiful	107
124	Aftabanagar	25000	1845687171	Customer Service	Niloy	108
125	Banani	35000	1829865171	Sales Representative	Towhid	109
126	Uttara	50000	1827498945	Operations Manager	Mazid	110

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SQL Commands × +

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```
insert into arts_exhibition values (401,'10-JUL-09','Acrylic', 'Milkwood Arcade',10500.5,203)
insert into arts_exhibition values (105,'22-OCT-17','Portrait', 'Kirkconnrll Flow',150000.5,204)
select * from arts_exhibition


9.
CREATE table asa (
    atst_id NUMBER(10) CONSTRAINT atst_asa_id_pk PRIMARY KEY,
    art_id NUMBER(10) CONSTRAINT art_asa_id_fk REFERENCES arts_customer(art_id),
    st_id NUMBER(10) CONSTRAINT st_id_fk REFERENCES staffs(st_id)
);
insert into asa values (301, 105, 121)
insert into asa values (105, 202, 102)
insert into asa values (103, 303, 122)
insert into asa values (109, 404, 104)
insert into asa values (104, 505, 105)
select * from asa
```

Results Explain Describe Saved SQL History

ATST_ID	ART_ID	ST_ID
301	105	121
105	202	102
103	303	122
109	404	104
104	505	105
101	101	106
106	106	123
501	109	124
401	506	125
503	110	126

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Autocommit   Display 10

```
6.
CREATE TABLE artists (
    atst_id NUMBER(10) CONSTRAINT atst_id_pk PRIMARY KEY,
    atst_address VARCHAR2(20),
    atst_num NUMBER(11),
    atst_name VARCHAR2(20)
);
insert into artists values (301,'Aftabanagar',01987324379,'Shafi Bin Mahmud')
insert into artists values (105,'Bashundhara R/A',01987753274,'Nub Himel')
insert into artists values (103,'Mirpur-12',01987324372,'Pigachad Tahsin')
insert into artists values (109,'Kuratoli Camp',01987324372,'Nishat Tasnim')
insert into artists values (104,'Moddho Badda',01987324352,'Jio Jogodish')
select * from artists

2.
CREATE TABLE staffs (
```

Results Explain Describe Saved SQL History

ATST_ID	ATST_ADDRESS	ATST_NUM	ATST_NAME
301	Aftabanagar	1987324379	Shafi Bin Mahmud
105	Bashundhara R/A	1987753274	Nub Himel
103	Mirpur-12	1987324372	Pigachad Tahsin
109	Kuratoli Camp	1987324372	Nishat Tasnim
104	Moddho Badda	1987324352	Jio Jogodish
101	Notun Bazar	1287324382	Saiful Islam
106	Staff Quarter	1787324373	Khurshed
501	Kuril	1987324372	Mazid
401	Bashundhara R/A	1787377742	Reyna Rani
502	Bashundhara R/A	1487399972	Dadi Breem

10 rows returned in 0.00 seconds   CSV Export

☑ Autocommit Display [10 ▼]   [Save] [Run]

```
***Self-join

Q1. Display the name and ID of customers who live in the same area

SELECT A.cus_ID as Customer_ID, A.cus_name AS Customer_Name, B.cus_address
FROM Customers A, Customers B
WHERE A.cus_id <> B.cus_id
AND A.cus_address = B.cus_address

Q2. Display the name and ID of exhibitions with the same sponsors.

SELECT A.ex_id as Exhibition_ID, A.ex_name AS Exhibition_Name, B.ex_sponsors AS Sponsor
FROM Exhibitions A, Exhibitions B
WHERE A.ex_id <> B.ex_id
AND A.ex_sponsors = B.ex_sponsors
```

Results Explain Describe Saved SQL History

CUSTOMER_ID	CUSTOMER_NAME	CUS_ADDRESS
330	Hridoy	Kuril
301	Zerin	Kuril

2 rows returned in 0.00 seconds   CSV Export

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☑ Autocommit Display [10 ▼]   [Save] [Run]

```
--*** General Queries
--1. Display the exhibition name and sponsors detials from exhibition table
--2. Display staff id, staff name, staff address, salary from staffs table
--3. Find out the staffs name and salary who earns more than 15000.
--4. Display the exhibition names before the ex_date 13-jan-22.
--5. Find out the staffs whose role is a cleaner
1.
SELECT ex_name,
       ex_sponsors
FROM exhibitions
2.
SELECT st_id,
       st_name,
       st_address,
       st_salary
FROM staffs
3.
SELECT st_name,
```

Results Explain Describe Saved SQL History

EX_NAME	EX_SPONSORS
The Art City	Adidas
Context House	Nike
Paper Threads	Victorias Secret
Vivid Delight	Apple, Inc.
Artvago	DeLorean Company
ArtistMart	Nike
Astrophotography	Supreme
Weird Gallery	Redbull
Art Genics	Calvin Klein
Patronizing	Citigroup

10 rows returned in 0.01 seconds   CSV Export

Autocommit Display [10 v]   Save   Run

```
***subqieries
--1. Display the name and salary for all staffs who earn more than staff number 122 (staffs table).

SELECT st_name, st_salary
FROM staffs
WHERE st_salary > ANY (
    SELECT st_salary
    FROM staffs
    WHERE st_id = 122
)
--2. Display name, number from artists where the atst_address is  'Bashundhara R/A'
SELECT atst_name, atst_num
FROM artists
WHERE atst_address IN (
    SELECT atst_address
    FROM artists
    WHERE atst_address = 'Bashundhara R/A'
)
```

Results Explain Describe Saved SQL History

ST_NAME	ST_SALARY
Mahima	25000
Angel	20000
Mushfique	30000
Saiful	40000
Niloy	25000
Towhid	35000
Mazid	50000

7 rows returned in 0.00 seconds   CSV Export

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Autocommit Display [10 v]   Save   Run

```
--*** Single row

--1. show the sponsors and their length from exhibitions
SELECT ex_sponsors, LENGTH (ex_sponsors)
FROM exhibitions


--2. concat ex_name and ex_sponsors from exhibitions
SELECT CONCAT (ex_name, ex_sponsors)
FROM exhibitions

--3. use substring range for 1 to 3 from customers where cus_name is "Zerin"
SELECT SUBSTR ('Zerin', 1 ,3)
FROM customers
WHERE cus_name = 'Zerin'

--4. Show the name of all the customers and their IDs in upper case form
```

Results Explain Describe Saved SQL History

EX_SPONSORS	LENGTH(EX_SPONSORS)
Adidas	6
Nike	4
Victorias Secret	16
Apple, Inc.	11
DeLorean Company	16
Nike	4
Supreme	7
Redbull	7
Calvin Klein	12
Citigroup	9

10 rows returned in 0.00 seconds   CSV Export

☑ Autocommit **Display** [10 ▾]   Save Run

```
***Non equijoin

Q1. Display the ID, title, price of arts which have a art ID between 65 and 200


SELECT art_id AS ID, art_title AS TITLE, art_price AS PRICE FROM arts_artist WHERE art_id BETWEEN 65 AND 200



Q2. Display the name, ID, role and salary of those staffs who have a ID between 103 and 108



SELECT st_ID, st_name, st_role, st_salary FROM staffs WHERE st_id BETWEEN 103 AND 108
```

Results Explain Describe Saved SQL History

ID	TITLE	PRICE
101	Blackout	13000.5
102	The Starry Night	3500000
103	Dracontine	1200.5
100	Essential Graphics	300.5
110	Quentin Metsys	550.5

5 rows returned in 0.00 seconds   CSV Export

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SQL Commands × +

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```
*** Group by clause
1. Write a query to get the min salary of the staffs with the same job.
2. Write a query to get the staff_role and the total salary payable in each role.
3. Write a query to list the number of unique roles available in the staffs table.
4. Write a query to get the maximum salary of an staff working as a 'Janitor'.
5. Write a query to get the minimum price of arts where type is 'Oil'.
1.
SELECT min(st_salary), st_role
FROM staffs
group by st_role
2.
SELECT sum(st_salary), st_role
FROM staffs
group by st_role
3.
select count(distinct(st_role))
from staffs
```

Results Explain Describe Saved SQL History

MIN(ST_SALARY)	ST_ROLE
15000	Janitor
35000	Sales Representative
25000	Customer Service
20000	Receptionist
30000	Accountant
40000	Marketing Manager
50000	Operations Manager

7 rows returned in 0.00 seconds   CSV Export

Application Express 2.1.0.00.39

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☑ Autocommit Display [10 ▼]   [Save] [Run]

```
--*** Views
--1. Create a view displaying ex_id, ex_sponsors, ex_date from exhibitions table

CREATE VIEW view1
AS
SELECT ex_id, ex_sponsors, ex_date
FROM exhibitions
select *
from view1
--*** Sequence
--1. Create a sequence of ow_id


CREATE SEQUENCE owsec
START WITH 101
INCREMENT BY 1
MAXVALUE 110
***subqieries
```

Results Explain Describe Saved SQL History

EX_ID	EX_SPONSORS	EX_DATE
101	Adidas	17-SEP-2015
105	Nike	01-JAN-2018
107	Victorias Secret	19-DEC-2005
203	Apple, Inc.	12-JUL-2014
204	DeLorean Company	22-NOV-2006
205	Nike	15-FEB-2010
206	Supreme	06-DEC-2023
108	Redbull	10-MAY-2021
109	Calvin Klein	08-DEC-2016
208	Citigroup	20-DEC-2013

10 rows returned in 0.00 seconds   CSV Export

SQL Commands   ✕   +

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☑ Autocommit Display [10 ▼]   [Save] [Run]

```
--*** Equijoin
--1. Display the ex_name, ex_sponsors, ow_name, ow_email of all the owners
1.
select E.ex_name,
        E.ex_sponsors,
        O.ow_name,
        O.ow_email
FROM exhibitions E, owners O
where E.ow id = O.ow id
--2. Display the owner name, number and their staffs name and id

SELECT O.ow_name,
        O.ow_num,
        S.st_name,
        S.st_id
FROM owners O, staffs S
where O.ow_id = S.ow_id
```

Results Explain Describe Saved SQL History

EX_NAME	EX_SPONSORS	OW_NAME	OW_EMAIL
The Art City	Adidas	Tahsan	tahsin@gmail.com
Context House	Nike	Shafi	shafi@outlook.com
Paper Threads	Victorias Secret	Himalaya	himalaya@yahoo.com
Vivid Delight	Apple, Inc.	Faishal	faishal@gmail.com
Artvago	DeLorean Company	Towhid	towhid@gmail.com
ArtistMart	Nike	Nishat	nishat@abcmail.com
Astrophotography	Supreme	Joya	joya@gmail.com
Weird Gallery	Redbull	Nub	nubmishal@gmail.com
Art Genics	Calvin Klein	Habibi	habibi@gmail.com
Patronizing	Citigroup	Abdullah	abdullah@hotmail.com

10 rows returned in 0.00 seconds   CSV Export

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☑ Autocommit   Display [10 ▾]   Save   Run

```
*** Outerjoin
--1. Display art_title, date, id, artist_id, artist_name of all artists


SELECT A.art_title,
       A.art_date,
       A.art_id,
       AT.atst_id,
       AT.atst_name
FROM arts_artist A, artists AT
WHERE A.atst_id (+) = AT.atst_id


SELECT E.ex_date,
       E.ex_name,
       O.ow_name
FROM exhibitions E, owners O
WHERE E.ow_id(+) = O.ow_id
```

Results Explain Describe Saved SQL History

ART_TITLE	ART_DATE	ART_ID	ATST_ID	ATST_NAME
Blackout	01-SEP-15	101	301	Shafi Bin Mahmud
The Starry Night	05-DEC-02	102	105	Nub Himel
Dracontine	09-AUG-08	103	103	Pigachad Tahsin
Milkwood Arcade	10-JUL-09	401	109	Nishat Tasnim
Kirkconnrll Flow	22-OCT-17	222	104	Jio Jogodish
Desert Spring	14-AUG-01	306	101	Saiful Islam
White flag	21-SEP-05	507	106	Khurshed
The Sistine Chapel	24-OCT-19	908	501	Mazid
Essential Graphics	11-DEC-20	100	401	Reyna Rani
Quentin Metsys	30-AUG-22	110	501	Mazid

More than 10 rows available. Increase rows selector to view more rows.

10 rows returned in 0.00 seconds   CSV Export

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☑ Autocommit   Display [10 ▾]   Save   Run

```
--*** Constraints

--1. Set constraint not null on the arts_price of arts_customer table.
--2. Make email unique of owners.


1.
ALTER TABLE arts_customers
MODIFY arts_price FLOAT NOT NULL


2.
ALTER TABLE owners
ADD CONSTRAINT owner_UNIQUE_EMAIL UNIQUE(ow_email)
```

Results Explain Describe Saved SQL History

Table altered.

0.05 seconds