



**EAST WEST UNIVERSITY**

Department of Computer Science and Engineering

Course Title: Database Systems

Course code: CSE302

**Lab no: 02**

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## Lab Task # 01 (Schema Definition):

```
CREATE TABLE account2022160356(  
    account_no CHAR(5),  
    balance NUMBER NOT NULL CHECK(balance>=0),  
    PRIMARY KEY(account_no)  
);
```

Object Type	TABLE ?	Object	ACCOUNT2022160356 ?						
Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
ACCOUNT2022160356	ACCOUNT_NO	CHAR	5	-	-	1	-	-	-
	BALANCE	NUMBER	22	-	-	-	-	-	-

```
CREATE TABLE customer2022160356(  
    customer_no CHAR(5),  
    customer_name VARCHAR2(20) NOT NULL,  
    customer_city VARCHAR2(10),  
    PRIMARY KEY(customer_no)  
);
```

Object Type	TABLE ?	Object	CUSTOMER2022160356 ?						
Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
CUSTOMER2022160356	CUSTOMER_NO	CHAR	5	-	-	1	-	-	-
	CUSTOMER_NAME	VARCHAR2	20	-	-	-	-	-	-
	CUSTOMER_CITY	VARCHAR2	10	-	-	-	✓	-	-

```
CREATE TABLE depositor2022160356(  
    account_no CHAR(5),  
    customer_no CHAR(5),  
    PRIMARY KEY(account_no,customer_no)  
);
```

Object Type	TABLE ?	Object	DEPOSITOR2022160356 ?						
Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
DEPOSITOR2022160356	ACCOUNT_NO	CHAR	5	-	-	1	-	-	-
	CUSTOMER_NO	CHAR	5	-	-	2	-	-	-

## Lab Task # 02 (Schema Modification):

i. Write SQL statement to add a new attribute 'date\_of\_birth' (date type) in customer table.

```
ALTER TABLE customer2022160356 ADD date_of_birth DATE;
```

Object Type	TABLE ?	Object	CUSTOMER2022160356 ?						
Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
CUSTOMER2022160356	CUSTOMER_NO	CHAR	5	-	-	1	-	-	-
	CUSTOMER_NAME	VARCHAR2	20	-	-	-	-	-	-
	CUSTOMER_CITY	VARCHAR2	10	-	-	-	✓	-	-
	DATE_OF_BIRTH	DATE	7	-	-	-	✓	-	-

ii. Write SQL statement to drop the attribute 'date\_of\_birth' from customer table.

```
ALTER TABLE customer2022160356 DROP COLUMN date_of_birth;
```

Object Type	TABLE ?	Object	CUSTOMER2022160356 ?						
Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
CUSTOMER2022160356	CUSTOMER_NO	CHAR	5	-	-	1	-	-	-
	CUSTOMER_NAME	VARCHAR2	20	-	-	-	-	-	-
	CUSTOMER_CITY	VARCHAR2	10	-	-	-	✓	-	-

iii. Write SQL statement to rename the attribute account\_no, customer\_no from depositor table to a\_no and c\_no, respectively.

```
ALTER TABLE depositor2022160356 RENAME COLUMN account_no TO a_no;  
ALTER TABLE depositor2022160356 RENAME COLUMN customer_no TO c_no;
```

Object Type	TABLE ?	Object	DEPOSITOR2022160356 ?						
Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
DEPOSITOR2022160356	A_NO	CHAR	5	-	-	1	-	-	-
	C_NO	CHAR	5	-	-	2	-	-	-

iv. Write SQL statements to add two foreign key constraints 'depositor\_fk1' and 'depositor\_fk2' which identifies a\_no and c\_no as a foreign key.

```
ALTER TABLE depositor2022160356 ADD CONSTRAINT depositor_fk1 FOREIGN KEY(a_no) REFERENCES account2022160356;  
ALTER TABLE depositor2022160356 ADD CONSTRAINT depositor_fk2 FOREIGN KEY(c_no) REFERENCES customer2022160356;
```

Object Type <b>TABLE</b> ?		Object <b>DEPOSITOR2022160356</b> ?							
Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
DEPOSITOR2022160356	A_NO	CHAR	5	-	-	1	-	-	-
	C_NO	CHAR	5	-	-	2	-	-	-

### Lab Task # 03 (Inserting Records into Tables):

```
INSERT INTO account2022160356 VALUES('A-101',12000);
INSERT INTO account2022160356 VALUES('A-102',6000);
INSERT INTO account2022160356 VALUES('A-103',2500);
```

ACCOUNT_NO	BALANCE
A-101	12000
A-102	6000
A-103	2500

3 rows returned in 0.01 seconds [Download](#)

```
INSERT INTO customer2022160356 VALUES('C-101','Alice','Dhaka');
INSERT INTO customer2022160356 VALUES('C-102','Annie','Dhaka');
INSERT INTO customer2022160356 VALUES('C-103','Bob','Chittagong');
INSERT INTO customer2022160356 VALUES('C-104','Charile','Khulna');
```

CUSTOMER_NO	CUSTOMER_NAME	CUSTOMER_CITY
C-102	Annie	Dhaka
C-104	Charile	Khulna
C-101	Alice	Dhaka
C-103	Bob	Chittagong

4 rows returned in 0.01 seconds [Download](#)

```
INSERT INTO depositor2022160356 VALUES('A-101','C-101');
INSERT INTO depositor2022160356 VALUES('A-103','C-102');
INSERT INTO depositor2022160356 VALUES('A-103','C-104');
INSERT INTO depositor2022160356 VALUES('A-102','C-103');
```

A_NO	C_NO
A-101	C-101
A-102	C-103
A-103	C-102
A-103	C-104

4 rows returned in 0.00 seconds [Download](#)

### Lab Task # 04 (Queries):

- Display customer name and customer city only.

```
SELECT customer_name,customer_city FROM customer2022160356;
```

CUSTOMER_NAME	CUSTOMER_CITY
Annie	Dhaka
Charlie	Khulna
Alice	Dhaka
Bob	Chittagong

4 rows returned in 0.01 seconds [Download](#)

ii. Display the unique customer city. No repetitions are allowed.

```
SELECT DISTINCT customer_city FROM customer2022160356;
```

CUSTOMER_CITY
Chittagong
Dhaka
Khulna

3 rows returned in 0.01 seconds [Download](#)

iii. Find account numbers with balance more than 7000.

```
SELECT account_no FROM account2022160356 WHERE balance>7000;
```

ACCOUNT_NO
A-101

1 rows returned in 0.01 seconds [Download](#)

iv. Find customer number and customer name who live in Khulna.

```
SELECT customer_no,customer_name FROM customer2022160356 WHERE customer_city='Khulna';
```

CUSTOMER_NO	CUSTOMER_NAME
C-104	Charlie

1 rows returned in 0.00 seconds [Download](#)

v. Find customer number and customer name who do not live in Dhaka.

```
SELECT customer_no,customer_name FROM customer2022160356 WHERE NOT customer_city='Dhaka';
```

CUSTOMER_NO	CUSTOMER_NAME
C-104	Charlie
C-105	Bob

2 rows returned in 0.00 seconds [Download](#)

vi. Find customer name and customer city who have accounts with balance more than 7000.

```
SELECT customer2022160356.customer_no,customer2022160356.customer_name
FROM customer2022160356,account2022160356,depositor2022160356
WHERE customer2022160356.customer_no=depositor2022160356.c_no AND
depositor2022160356.a_no=account2022160356.account_no AND
account2022160356.balance>7000;
```

CUSTOMER_NO	CUSTOMER_NAME
C-101	Alice

1 rows returned in 0.03 seconds [Download](#)

vii. Find customer name and customer city who have accounts with balance more than 7000 and do not live in Khulna.

```
SELECT customer2022160356.customer_no,customer2022160356.customer_name
FROM customer2022160356,account2022160356,depositor2022160356
WHERE customer2022160356.customer_no=depositor2022160356.c_no AND
depositor2022160356.a_no=account2022160356.account_no AND
account2022160356.balance>7000 AND
NOT customer2022160356.customer_city='Khulna';
```

CUSTOMER_NO	CUSTOMER_NAME
C-101	Alice

1 rows returned in 0.02 seconds [Download](#)

viii. Find account number and balance for those accounts which belong to a customer with id 'C-102'.

```
SELECT account2022160356.account_no,account2022160356.balance
FROM customer2022160356,account2022160356,depositor2022160356
WHERE customer2022160356.customer_no=depositor2022160356.c_no AND
depositor2022160356.a_no=account2022160356.account_no AND
customer2022160356.customer_no='C-102';
```

ACCOUNT_NO	BALANCE
A-105	2500

1 rows returned in 0.02 seconds [Download](#)

ix. Find all account number and balance for those accounts which belong to customers of Dhaka and Khulna city.

```
SELECT account2022160356.account_no,account2022160356.balance
FROM customer2022160356,account2022160356,depositor2022160356
WHERE customer2022160356.customer_no=depositor2022160356.c_no AND
depositor2022160356.a_no=account2022160356.account_no AND
customer2022160356.customer_city IN('Dhaka','Khulna');
```

ACCOUNT_NO	BALANCE
A-103	2500
A-103	2500
A-101	12000

3 rows returned in 0.02 seconds [Download](#)

x. Find the customer who have no accounts. [Result of this query will be empty for this dataset. However, you must write the correct SQL]

```
SELECT customer2022160356.*
FROM customer2022160356,account2022160356,depositor2022160356
WHERE customer2022160356.customer_no=depositor2022160356.c_no AND
depositor2022160356.a_no=account2022160356.account_no AND
customer2022160356.customer_no IS NULL;
```

no data found