



OCTOBER 6, 2024

HOMEWORK 3 A

CS 457 B

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20281 - SFBU

1.

```

1 CREATE TABLE customers (
2     Cust_id CHAR(6) PRIMARY KEY,
3     name VARCHAR(30) NOT NULL,
4     order_name VARCHAR(15) NOT NULL,
5     Invoice_date DATE NOT NULL,
6     Payment_date DATE NOT NULL,
7     CONSTRAINT chk_dates CHECK (Invoice_date <= Payment_date)
8 );
9
10 INSERT INTO customers (Cust_id, name, order_name, Invoice_date, Payment_date)
11 VALUES
12 ('CUST01', 'John Doe', 'Order1', '2023-09-01', '2023-09-05'),
13 ('CUST02', 'Jane Smith', 'Order2', '2023-08-10', '2023-08-15'),
14 ('CUST03', 'Bob Johnson', 'Order3', '2023-07-12', '2023-07-12'),
15 ('CUST04', 'Alice White', 'Order4', '2023-06-20', '2023-06-25'),
16 ('CUST05', 'Michael Brown', 'Order5', '2023-05-15', '2023-05-18'),
17 ('CUST06', 'Chris Green', 'Order6', '2023-04-11', '2023-04-12'),
18 ('CUST07', 'Nancy Black', 'Order7', '2023-03-03', '2023-03-08'),
19 ('CUST08', 'Paul Blue', 'Order8', '2023-02-07', '2023-02-10'),
20 ('CUST09', 'Emily Pink', 'Order9', '2023-01-15', '2023-01-20'),
21 ('CUST10', 'David Orange', 'Order10', '2023-10-01', '2023-10-04');

```

* Cust_id char(6) ▲▼	* name varchar(30) ▲▼	* order_name varchar(15) ▲▼	* Invoice_date date ▲▼	* Payment_date date ▲▼
CUST01	John Doe	Order1	2023-09-01	2023-09-05
CUST02	Jane Smith	Order2	2023-08-10	2023-08-15
CUST03	Bob Johnson	Order3	2023-07-12	2023-07-12
CUST04	Alice White	Order4	2023-06-20	2023-06-25
CUST05	Michael Brown	Order5	2023-05-15	2023-05-18
CUST06	Chris Green	Order6	2023-04-11	2023-04-12
CUST07	Nancy Black	Order7	2023-03-03	2023-03-08
CUST08	Paul Blue	Order8	2023-02-07	2023-02-10
CUST09	Emily Pink	Order9	2023-01-15	2023-01-20
CUST10	David Orange	Order10	2023-10-01	2023-10-04

2. .



```

1 CREATE TABLE employee_wk4 (
2     SSN CHAR(9) PRIMARY KEY,
3     name VARCHAR(30) NOT NULL,
4     dept VARCHAR(15) NOT NULL,
5     proj VARCHAR(15) NOT NULL,
6     salary NUMERIC(10, 2) NOT NULL
7 );
8
9 INSERT INTO employee_wk4 (SSN, name, dept, proj, salary)
10 VALUES
11 ('123456789', 'John Doe', 'HR', 'Project1', 50000.00),
12 ('234567890', 'Jane Smith', 'IT', 'Project2', 60000.50),
13 ('345678901', 'Bob Johnson', 'Finance', 'Project3', 70000.25),
14 ('456789012', 'Alice White', 'Development', 'Project4', 55000.75),
15 ('567890123', 'Michael Brown', 'Marketing', 'Project5', 48000.00),
16 ('678901234', 'Chris Green', 'Sales', 'Project6', 63000.10),
17 ('789012345', 'Nancy Black', 'Legal', 'Project7', 51000.20),
18 ('890123456', 'Paul Blue', 'IT', 'Project8', 57000.40),
19 ('901234567', 'Emily Pink', 'Development', 'Project9', 68000.30),
20 ('012345678', 'David Orange', 'HR', 'Project10', 59000.60);

```

* SSN char(9)	* name varchar(30)	* dept varchar(15)	* proj varchar(15)	* salary decimal(10,2)
012345678	David Orange	HR	Project10	59000.60
123456789	John Doe	HR	Project1	50000.00
234567890	Jane Smith	IT	Project2	60000.50
345678901	Bob Johnson	Finance	Project3	70000.25
456789012	Alice White	Development	Project4	55000.75
567890123	Michael Brown	Marketing	Project5	48000.00
678901234	Chris Green	Sales	Project6	63000.10
789012345	Nancy Black	Legal	Project7	51000.20
890123456	Paul Blue	IT	Project8	57000.40
901234567	Emily Pink	Development	Project9	68000.30

3. .

```

1  INSERT INTO customers (Cust_id, name, order_name, Invoice_date, Payment_date)
2  VALUES
3  ('CUST01', 'John Doe', 'Order1', '2023-09-01', '2023-09-05'),
4  ('CUST02', 'Jane Smith', 'Order2', '2023-08-10', '2023-08-15'),
5  ('CUST03', 'Bob Johnson', 'Order3', '2023-07-12', '2023-07-12'),
6  ('CUST04', 'Alice White', 'Order4', '2023-06-20', '2023-06-25'),
7  ('CUST05', 'Michael Brown', 'Order5', '2023-05-15', '2023-05-18'),
8  ('CUST06', 'Chris Green', 'Order6', '2023-04-11', '2023-04-12'),
9  ('CUST07', 'Nancy Black', 'Order7', '2023-03-03', '2023-03-08'),
10 ('CUST08', 'Paul Blue', 'Order8', '2023-02-07', '2023-02-10'),
11 ('CUST09', 'Emily Pink', 'Order9', '2023-01-15', '2023-01-20'),
12 ('CUST10', 'David Orange', 'Order10', '2023-10-01', '2023-10-04');
13
14 -- 4. Alter the table to add the customer_phone column
15 ALTER TABLE customers ADD customer_phone CHAR(12);
16
17 -- 5. Update the existing records with US phone numbers
18 UPDATE customers
19 SET customer_phone = '123-456-7890' WHERE Cust_id = 'CUST01';
20 UPDATE customers
21 SET customer_phone = '234-567-8901' WHERE Cust_id = 'CUST02';
22 UPDATE customers
23 SET customer_phone = '345-678-9012' WHERE Cust_id = 'CUST03';
24 UPDATE customers
25 SET customer_phone = '456-789-0123' WHERE Cust_id = 'CUST04';
26 UPDATE customers
27 SET customer_phone = '567-890-1234' WHERE Cust_id = 'CUST05';
28 UPDATE customers
29 SET customer_phone = '678-901-2345' WHERE Cust_id = 'CUST06';
30 UPDATE customers
31 SET customer_phone = '789-012-3456' WHERE Cust_id = 'CUST07';
32 UPDATE customers
33 SET customer_phone = '890-123-4567' WHERE Cust_id = 'CUST08';
34 UPDATE customers
35 SET customer_phone = '901-234-5678' WHERE Cust_id = 'CUST09';
36 UPDATE customers
37 SET customer_phone = '012-345-6789' WHERE Cust_id = 'CUST10';

```

* Cust_id char(6)	* name varchar(30)	* order_name varchar(15)	* Invoice_date date	* Payment_date date	customer_phone char(12)
CUST01	John Doe	Order1	2023-09-01	2023-09-05	123-456-7890
CUST02	Jane Smith	Order2	2023-08-10	2023-08-15	234-567-8901
CUST03	Bob Johnson	Order3	2023-07-12	2023-07-12	345-678-9012
CUST04	Alice White	Order4	2023-06-20	2023-06-25	456-789-0123
CUST05	Michael Brown	Order5	2023-05-15	2023-05-18	567-890-1234
CUST06	Chris Green	Order6	2023-04-11	2023-04-12	678-901-2345
CUST07	Nancy Black	Order7	2023-03-03	2023-03-08	789-012-3456
CUST08	Paul Blue	Order8	2023-02-07	2023-02-10	890-123-4567
CUST09	Emily Pink	Order9	2023-01-15	2023-01-20	901-234-5678
CUST10	David Orange	Order10	2023-10-01	2023-10-04	012-345-6789

4. . **CREATE** VIEW developer **AS SELECT** name, proj **FROM** employee_wk4 **WHERE** dept = "Development";

* name varchar(30)	* proj varchar(15)
Alice White	Project4
Emily Pink	Project9

5. .



```

1 CREATE TABLE Persons (
2   ID INT NOT NULL,
3   Lastname varchar(255) NOT NULL,
4   Firstname varchar(255),
5   Age int,
6   UNIQUE (ID)
7 );
8
9 INSERT INTO Persons (ID, Lastname, Firstname, Age)
10 VALUES
11 (1, 'Doe', 'John', 30),
12 (2, 'Smith', 'Jane', 25),
13 (3, 'Johnson', 'Robert', 40),
14 (4, 'White', 'Alice', 35),
15 (5, 'Brown', 'Michael', 28),
16 (6, 'Green', 'Chris', 32),
17 (7, 'Black', 'Nancy', 29),
18 (8, 'Blue', 'Paul', 45),
19 (9, 'Pink', 'Emily', 22),
20 (10, 'Orange', 'David', 38);

```

* ID int	* Lastname varchar(255)	Firstname varchar(255)	Age int
1	Doe	John	30
2	Smith	Jane	25
3	Johnson	Robert	40
4	White	Alice	35
5	Brown	Michael	28
6	Green	Chris	32
7	Black	Nancy	29
8	Blue	Paul	45
9	Pink	Emily	22
10	Orange	David	38

6. .



```

1  CREATE TABLE Orders (
2      OrderID INT NOT NULL,
3      OrderNumber INT NOT NULL,
4      PersonID INT,
5      PRIMARY KEY (OrderID),
6      FOREIGN KEY (PersonID) REFERENCES Persons(ID)
7  );
8
9  INSERT INTO Orders (OrderID, OrderNumber, PersonID)
10 VALUES
11 (1, 1001, 1),
12 (2, 1002, 2),
13 (3, 1003, 3),
14 (4, 1004, 4),
15 (5, 1005, 5),
16 (6, 1006, 6),
17 (7, 1007, 7),
18 (8, 1008, 8),
19 (9, 1009, 9),
20 (10, 1010, 10);

```

* OrderID int	* OrderNumber int	PersonID int
1	1001	1
2	1002	2
3	1003	3
4	1004	4
5	1005	5
6	1006	6
7	1007	7
8	1008	8
9	1009	9
10	1010	10

7. **TRUNCATE TABLE** customers; (OUTPUT TABLE EMPTY)

8. .

```
1 CREATE TABLE Persons_new (  
2     ID int NOT NULL,  
3     LastName varchar(255) NOT NULL,  
4     FirstName varchar(255),  
5     Age int,  
6     City varchar(255) DEFAULT 'Sandnes'  
7 );  
8  
9 CREATE TABLE Orders_new (  
10     ID INT NOT NULL,  
11     OrderNumber INT NOT NULL,  
12     OrderDate DATETIME DEFAULT GETDATE(),  
13     PRIMARY KEY (ID)  
14 );
```

```
1 INSERT INTO Persons_new (ID, LastName, FirstName, Age, City)  
2 VALUES  
3 (1, 'Doe', 'John', 30, 'New York'),  
4 (2, 'Smith', 'Jane', 25, 'Los Angeles'),  
5 (3, 'Johnson', 'Robert', 40, 'Chicago'),  
6 (4, 'White', 'Alice', 35, 'Houston'),  
7 (5, 'Brown', 'Michael', 28, 'Phoenix'),  
8 (6, 'Green', 'Chris', 32, 'Philadelphia'),  
9 (7, 'Black', 'Nancy', 29, 'San Antonio'),  
10 (8, 'Blue', 'Paul', 45, 'San Diego'),  
11 (9, 'Pink', 'Emily', 22, 'Dallas'),  
12 (10, 'Orange', 'David', 38, 'San Jose');  
13  
14 -- 2. Insert data into the Orders_new table with specific OrderDate  
15 INSERT INTO Orders_new (ID, OrderNumber, OrderDate)  
16 VALUES  
17 (1, 1001, '2024-10-01'),  
18 (2, 1002, '2024-10-02'),  
19 (3, 1003, '2024-10-03'),  
20 (4, 1004, '2024-10-04'),  
21 (5, 1005, '2024-10-05'),  
22 (6, 1006, '2024-10-06'),  
23 (7, 1007, '2024-10-07'),  
24 (8, 1008, '2024-10-08'),  
25 (9, 1009, '2024-10-09'),  
26 (10, 1010, '2024-10-10');
```


* ID int	* LastName varchar(255)	FirstName varchar(255)	Age int	City varchar(255)
1	Doe	John	30	New York
2	Smith	Jane	25	Los Angeles
3	Johnson	Robert	40	Chicago
4	White	Alice	35	Houston
5	Brown	Michael	28	Phoenix
6	Green	Chris	32	Philadelphia
7	Black	Nancy	29	San Antonio
8	Blue	Paul	45	San Diego
9	Pink	Emily	22	Dallas
10	Orange	David	38	San Jose

* ID int	* OrderNumber int	OrderDate datetime
1	1001	2024-10-01 00:00:00
2	1002	2024-10-02 00:00:00
3	1003	2024-10-03 00:00:00
4	1004	2024-10-04 00:00:00
5	1005	2024-10-05 00:00:00
6	1006	2024-10-06 00:00:00
7	1007	2024-10-07 00:00:00
8	1008	2024-10-08 00:00:00
9	1009	2024-10-09 00:00:00
10	1010	2024-10-10 00:00:00

9.



```

1  -- CREATE INDEX commands:
2  CREATE INDEX idx_lastname ON Persons (LastName);
3  -- DROP INDEX command:
4  DROP INDEX idx_lastname ON Persons;

```

10. `.SELECT * FROM `Orders_new` WHERE OrderDate = '2024-10-09';`

* ID int	* OrderNumber int	OrderDate datetime
9	1009	2024-10-09 00:00:00

11.



```

1  CREATE TABLE Products (
2      Product_name VARCHAR(255) NOT NULL,
3      Price NUMERIC(10, 2) NOT NULL
4  );
5
6  INSERT INTO Products (Product_name, Price)
7  VALUES
8  ('Product1', 10.99),
9  ('Product2', 20.49),
10 ('Product3', 30.79),
11 ('Product4', 40.99),
12 ('Product5', 50.89),
13 ('Product6', 60.59),
14 ('Product7', 70.49),
15 ('Product8', 80.29),
16 ('Product9', 90.19),
17 ('Product10', 100.99);

```

* Product_name varchar(255)	* Price decimal(10,2)
Product1	10.99
Product2	20.49
Product3	30.79
Product4	40.99
Product5	50.89
Product6	60.59
Product7	70.49
Product8	80.29
Product9	90.19
Product10	100.99

12. **CREATE** VIEW Products_Above_Average_Price **AS SELECT** Product_name, Price **FROM** Products
WHERE Price >= (**SELECT** **AVG**(Price) **FROM** Products);

* Product_name varchar(255)	* Price decimal(10,2)
Product6	60.59
Product7	70.49
Product8	80.29
Product9	90.19
Product10	100.99