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DATA ENGINEERING BATCH 1

DAY 3 ASSIGNMENT

SQL_D

```
CREATE DATABASE pet_adoption;
```

```
USE pet_adoption;
```

```
-- Table #1: Animals
```

```
CREATE TABLE animals (
```

```
    id CHAR(36) primary key ,
```

```
    name VARCHAR(255),
```

```
    breed VARCHAR(255),
```

```
    color VARCHAR(255),
```

```
    gender VARCHAR(255),
```

```
    status INTEGER
```

```
);
```

```
-- Table #2: Adoptions
```

```
CREATE TABLE adoptions (
```

```
    animal_id CHAR(36) primary key,
```

```
    name VARCHAR(255),
```

```
    contact VARCHAR(255),
```

```
    date TIMESTAMP
```

```
);
```

```
INSERT INTO animals (id, name, breed, color, gender, status) VALUES
```

```
('89354034-20d9-4c3d-8195-3294bfd9dbc5', 'Bellyflop', 'Beagle', 'Brown', 'Male', 0),
```

```
('ae91cf1c-f972-42f3-8160-6c04d935699c', 'Snowy', 'Husky', 'White', 'Female', 0),
```

```
('37df3388-b0f4-4f0d-b6ef-0d840923a4d8', 'Princess', 'Pomeranian', 'Black', 'Female', 0),
```

```
('94545432-d27a-4ac8-ab7c-38270d7535f3', 'Cricket', 'Chihuahua', 'Brown', 'Male', 0),
```

```
('a1e7a7fc-b429-41ec-9924-8bb39dd397c8', 'Princess', 'Poodle', 'Purple', 'Female', 0),
```

('5138ed53-2ab2-400b-973c-91186f8c673d', 'Spot', 'Dalmation', 'Black and White', 'Male', 0);

-- Get the full list of all properties of all dogs (defaults to a limit of 100 rows)

SELECT * FROM animals;

Result Grid		Filter Rows:	Edit:	Export/Import:	Wrap Cell Content:			
	id	name	breed	color	gender	status	species	shelter
▶	11d6fa07-449f-4053-a7cb-ae4ec8570f3f	Meowmix	Munchkin	Yellow	Female	0	Cat	1
	37df3388-b0f4-4f0d-b6ef-0d840923a4d8	Princess	Pomeranian	Black	Female	0	Dog	1
	4e55860a-ec39-494b-845a-2e0a6496bf9b	Ash	Persian	Gray	Female	0	Cat	1
	5138ed53-2ab2-400b-973c-91186f8c673d	Spot	Dalmation	Black and White	Male	1	Dog	1
	56e9be70-ed24-4949-bb54-70329c2caf82	Salt	Turkish Angora	White	Female	0	Cat	2
	94545432-d27a-4ac8-ab7c-38270d7535f3	Cricket	Chihuahua	Brown	Male	0	Dog	1
	a1e7a7fc-b429-41ec-9924-8bb39dd397c8	Princess	Poodle	Brown	Female	1	Dog	1
	ac1a773d-6912-45cc-b296-1b58d13dbd32	Snoops	Beagle	Brown	Male	0	Dog	2
	ae91cf1c-f972-42f3-8160-6c04d935699c	Snowy	Husky	White	Female	0	Dog	1
	b91df9f1-8e3d-4cce-a4ba-9d1a3ad6a12b	Fuzz	Papillon	Gray	Male	0	Dog	3

-- Get the breeds of all dogs

SELECT breed FROM animals;

-- Get the names of only female dogs

SELECT name FROM animals WHERE gender = 'Female';

name
Meowmix
Princess
Ash
Salt
Princess
Snowy

-- Get the IDs of dogs up for adoption

SELECT id FROM animals WHERE status = 0;

id
11d6fa07-449f-4053-a7cb-ae4ec8570f3f
37df3388-b0f4-4f0d-b6ef-0d840923a4d8
4e55860a-ec39-494b-845a-2e0a6496bf9b
56e9be70-ed24-4949-bb54-70329c2caf82
94545432-d27a-4ac8-ab7c-38270d7535f3
ac1a773d-6912-45cc-b296-1b58d13dbd32
ae91cf1c-f972-42f3-8160-6c04d935699c
b91df9f1-8e3d-4cce-a4ba-9d1a3ad6a12b
e80b92e5-98ed-458d-885d-b9e05d0d123e
NULL

-- Update Princess the Poodle's color from Purple to Brown

```
UPDATE animals SET color = 'Brown' WHERE id = 'a1e7a7fc-b429-41ec-9924-8bb39dd397c8';
```

-- Fix Purple color entries in the database to Brown

```
SET SQL_SAFE_UPDATES = 0;
```

```
UPDATE animals SET color = 'Brown' WHERE color = 'Purple' AND id IS NOT NULL;
```

-- Remove Bellyflop the Beagle from the database

```
DELETE FROM animals WHERE id = '89354034-20d9-4c3d-8195-3294bfd9dbc5';
```

-- Adoption for Patalie the Poodle

```
UPDATE animals SET status = 1 WHERE id = 'a1e7a7fc-b429-41ec-9924-8bb39dd397c8';
```

```
INSERT INTO adoptions (animal_id, name, contact, date) VALUES ('a1e7a7fc-b429-41ec-9924-8bb39dd397c8', 'Patalie', 'poodlequeen@cockroachlabs.com', NOW());
```

-- Adoption for Ella the Dalmatian

```
UPDATE animals SET status = 1 WHERE id = '5138ed53-2ab2-400b-973c-91186f8c673d';
```

```
INSERT INTO adoptions (animal_id, name, contact, date) VALUES ('5138ed53-2ab2-400b-973c-91186f8c673d', 'Ella', 'ellacrew@cockroachlabs.com', NOW());
```

-- View all adoptions

```
SELECT * FROM adoptions;
```

	animal_id	name	contact	date
▶	5138ed53-2ab2-400b-973c-91186f8c673d	Ella	ellacrew@cockroachlabs.com	2024-01-19 11:46:49
	a1e7a7fc-b429-41ec-9924-8bb39dd397c8	Patalie	poodlequeen@cockroachlabs.com	2024-01-19 11:46:39
*	NULL	NULL	NULL	NULL

-- View adoptions sorted by most recent adoption (descending order of dates)

```
SELECT * FROM adoptions ORDER BY date DESC;
```

-- Verify that the status of the correct three dogs (Cricket the Chihuahua, Princess the Poodle, and Spot the Dalmatian) were set to 1 ("adopted" status)

SELECT * FROM animals WHERE status = 1;

	id	name	breed	color	gender	status	species	shelter
▶	5138ed53-2ab2-400b-973c-91186f8c673d	Spot	Dalmation	Black and White	Male	1	Dog	1
	a1e7a7fc-b429-41ec-9924-8bb39dd397c8	Princess	Poodle	Brown	Female	1	Dog	1
•	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL

-- Add a new species column to the animals table

ALTER TABLE animals ADD COLUMN species VARCHAR(255) DEFAULT 'Dog';

-- Verify that the table was properly updated

SHOW COLUMNS FROM animals;

	Field	Type	Null	Key	Default	Extra
▶	id	char(36)	NO	PRI	NULL	
	name	varchar(255)	YES		NULL	
	breed	varchar(255)	YES		NULL	
	color	varchar(255)	YES		NULL	
	gender	varchar(255)	YES		NULL	
	status	int	YES		NULL	
	species	varchar(255)	YES		Dog	
	shelter	int	YES		NULL	

-- Set all current animals to "Dog"

SET sql_safe_updates = FALSE;

UPDATE animals SET species = 'Dog';

SET sql_safe_updates = TRUE;

-- Retrieve the animals table to verify the changes

SELECT * FROM animals;

Result Grid Filter Rows: Edit: Export/Import: Wrap Cell Content:									
	id	name	breed	color	gender	status	species	shelter	
▶	11d6fa07-449f-4053-a7cb-ae4ec8570f3f	Meowmix	Munchkin	Yellow	Female	0	Cat	1	
	37df3388-b0f4-4f0d-b6ef-0d840923a4d8	Princess	Pomeranian	Black	Female	0	Dog	1	
	4e55860a-ec39-494b-845a-2e0a6496bf9b	Ash	Persian	Gray	Female	0	Cat	1	
	5138ed53-2ab2-400b-973c-91186f8c673d	Spot	Dalmation	Black and White	Male	1	Dog	1	
	56e9be70-ed24-4949-bb54-70329c2caf82	Salt	Turkish Angora	White	Female	0	Cat	2	
	94545432-d27a-4ac8-ab7c-38270d7535f3	Cricket	Chihuahua	Brown	Male	0	Dog	1	
	a1e7a7fc-b429-41ec-9924-8bb39dd397c8	Princess	Poodle	Brown	Female	1	Dog	1	
	ac1a773d-6912-45cc-b296-1b58d13dbd32	Snoops	Beagle	Brown	Male	0	Dog	2	
	ae91cf1c-f972-42f3-8160-6c04d935699c	Snowy	Husky	White	Female	0	Dog	1	
	b91df9f1-8e3d-4cce-a4ba-9d1a3ad6a12b	Fuzz	Papillon	Gray	Male	0	Dog	3	

INSERT INTO animals (id, name, species, breed, color, gender, status)

VALUES ('11d6fa07-449f-4053-a7cb-ae4ec8570f3f', 'Meowmix', 'Cat', 'Munchkin', 'Yellow', 'Female', 0);

INSERT INTO animals (id, name, species, breed, color, gender, status)

VALUES ('4e55860a-ec39-494b-845a-2e0a6496bf9b', 'Ash', 'Cat', 'Persian', 'Gray', 'Female', 0);

INSERT INTO animals (id, name, species, breed, color, gender, status)

VALUES ('e80b92e5-98ed-458d-885d-b9e05d0d123e', 'Tiger', 'Cat', 'Bengal', 'Brown', 'Male', 0);

SELECT * FROM animals;

Result Grid Filter Rows: Edit: Export/Import: Wrap Cell Content:									
	id	name	breed	color	gender	status	species	shelter	
▶	11d6fa07-449f-4053-a7cb-ae4ec8570f3f	Meowmix	Munchkin	Yellow	Female	0	Cat	1	
	37df3388-b0f4-4f0d-b6ef-0d840923a4d8	Princess	Pomeranian	Black	Female	0	Dog	1	
	4e55860a-ec39-494b-845a-2e0a6496bf9b	Ash	Persian	Gray	Female	0	Cat	1	
	5138ed53-2ab2-400b-973c-91186f8c673d	Spot	Dalmation	Black and White	Male	1	Dog	1	
	56e9be70-ed24-4949-bb54-70329c2caf82	Salt	Turkish Angora	White	Female	0	Cat	2	
	94545432-d27a-4ac8-ab7c-38270d7535f3	Cricket	Chihuahua	Brown	Male	0	Dog	1	
	a1e7a7fc-b429-41ec-9924-8bb39dd397c8	Princess	Poodle	Brown	Female	1	Dog	1	
	ac1a773d-6912-45cc-b296-1b58d13dbd32	Snoops	Beagle	Brown	Male	0	Dog	2	
	ae91cf1c-f972-42f3-8160-6c04d935699c	Snowy	Husky	White	Female	0	Dog	1	
	b91df9f1-8e3d-4cce-a4ba-9d1a3ad6a12b	Fuzz	Papillon	Gray	Male	0	Dog	3	

-- Create the 'shelters' table

```
CREATE TABLE shelters (id INTEGER, name VARCHAR(255), location VARCHAR(255));
```

```
INSERT INTO shelters (id, name, location) VALUES (1, 'Animals 4 Homes', 'Red City');
```

-- Add a new 'shelter' column to the 'animals' table

```
SET SQL_SAFE_UPDATES = 0;
```

```
ALTER TABLE animals ADD COLUMN shelter INTEGER;
```

```
UPDATE animals SET shelter = 1;
```

```
INSERT INTO shelters (id, name, location) VALUES (2, 'Adopt A Buddy', 'Green Town');
```

```
INSERT INTO shelters (id, name, location) VALUES (3, 'Fluffy Animals', 'Blue Hills');
```

```
SELECT * FROM shelters;
```

	id	name	location
▶	1	Animals 4 Homes	Red City
	2	Adopt A Buddy	Green Town
	3	Fluffy Animals	Blue Hills

```
INSERT INTO animals (id, name, shelter, species, breed, color, gender, status)
```

```
VALUES ('ac1a773d-6912-45cc-b296-1b58d13dbd32', 'Snoops', 2, 'Dog', 'Beagle', 'Brown', 'Male', 0);
```

```
INSERT INTO animals (id, name, shelter, species, breed, color, gender, status)
```

```
VALUES ('56e9be70-ed24-4949-bb54-70329c2caf82', 'Salt', 2, 'Cat', 'Turkish Angora', 'White', 'Female', 0);
```

```
INSERT INTO animals (id, name, shelter, species, breed, color, gender, status)
```

```
VALUES ('b91df9f1-8e3d-4cce-a4ba-9d1a3ad6a12b', 'Fuzz', 3, 'Dog', 'Papillon', 'Gray', 'Male', 0);
```

```
SELECT * FROM animals;
```

	id	name	breed	color	gender	status	species	shelter
▶	11d6fa07-449f-4053-a7cb-ae4ec8570f3f	Meowmix	Munchkin	Yellow	Female	0	Cat	1
	37df3388-b0f4-4f0d-b6ef-0d840923a4d8	Princess	Pomeranian	Black	Female	0	Dog	1
	4e55860a-ec39-494b-845a-2e0a6496bf9b	Ash	Persian	Gray	Female	0	Cat	1
	5138ed53-2ab2-400b-973c-91186f8c673d	Spot	Dalmation	Black and White	Male	1	Dog	1
	56e9be70-ed24-4949-bb54-70329c2caf82	Salt	Turkish Angora	White	Female	0	Cat	2
	94545432-d27a-4ac8-ab7c-38270d7535f3	Cricket	Chihuahua	Brown	Male	0	Dog	1
	a1e7a7fc-b429-41ec-9924-8bb39dd397c8	Princess	Poodle	Brown	Female	1	Dog	1
	ac1a773d-6912-45cc-b296-1b58d13dbd32	Snoops	Beagle	Brown	Male	0	Dog	2
	ae91cf1c-f972-42f3-8160-6c04d935699c	Snowy	Husky	White	Female	0	Dog	1
	b91df9f1-8e3d-4cce-a4ba-9d1a3ad6a12b	Fuzz	Papillon	Gray	Male	0	Dog	3

show tables;

SELECT * FROM adoptions;

SELECT * FROM animals;

SELECT * FROM shelters;

SQL_DAY

CREATE DATABASE Bank;

USE Bank;

CREATE TABLE Customers (

CustomerID INT PRIMARY KEY,

CustomerName VARCHAR(255),

ContactName VARCHAR(255),

Address VARCHAR(255),

City VARCHAR(255),

PostalCode VARCHAR(10),

Country VARCHAR(255)

);

INSERT INTO Customers (CustomerID, CustomerName, ContactName, Address, City, PostalCode, Country)

VALUES

(1, 'Alfreds Futterkiste', 'Maria Anders', 'Obere Str. 57', 'Berlin', '12209', 'Germany'),
 (2, 'Ana Trujillo Emparedados y helados', 'Ana Trujillo', 'Avda. de la Constitución 2222', 'México D.F.', '05021', 'Mexico'),
 (3, 'Antonio Moreno Taquería', 'Antonio Moreno', 'Mataderos 2312', 'México D.F.', '05023', 'Mexico'),
 (4, 'Around the Horn', 'Thomas Hardy', '120 Hanover Sq.', 'London', 'WA1 1DP', 'UK'),
 (5, 'Berglunds snabbköp', 'Christina Berglund', 'Berguvsvägen 8', 'Luleå', 'S-958 22', 'Sweden');

SELECT CustomerName, City FROM Customers;

	CustomerName	City
▶	Alfreds Futterkiste	Berlin
	Ana Trujillo Emparedados y helados	México D.F.
	Antonio Moreno Taquería	México D.F.
	Around the Horn	London
	Berglunds snabbköp	Luleå

SELECT * FROM Customers;

	CustomerID	CustomerName	ContactName	Address	City	PostalCode	Country
▶	1	Alfreds Futterkiste	Maria Anders	Obere Str. 57	Berlin	12209	Germany
	2	Ana Trujillo Emparedados y helados	Ana Trujillo	Avda. de la Constitución 2222	México D.F.	05021	Mexico
	3	Antonio Moreno Taquería	Antonio Moreno	Mataderos 2312	México D.F.	05023	Mexico
	4	Around the Horn	Thomas Hardy	120 Hanover Sq.	London	WA1 1DP	UK
	5	Berglunds snabbköp	Christina Berglund	Berguvsvägen 8	Luleå	S-958 22	Sweden
*	NULL	NULL	NULL	NULL	NULL	NULL	NULL

SELECT DISTINCT Country FROM Customers;

	Country
▶	Germany
	Mexico
	UK
	Sweden

-- Use HAVING and GROUP BY

SELECT COUNT(CustomerName) AS Count_Customers, Country

FROM Customers

GROUP BY Country

HAVING COUNT(CustomerName) > 1;

	Count_Customers	Country
▶	2	Mexico

-- Use GROUP BY

SELECT COUNT(CustomerName) AS Count_Customers, Country

FROM Customers

GROUP BY Country;

	Count_Customers	Country
►	1	Germany
	2	Mexico
	1	UK
	1	Sweden

START TRANSACTION;

COMMIT;

ROLLBACK;

SAVEPOINT SP1;

DELETE FROM Customers WHERE CustomerID = 1;

SAVEPOINT SP2;

DELETE FROM Customers WHERE CustomerID = 2;

ROLLBACK TO SP1;

RELEASE SAVEPOINT SP1;

RELEASE SAVEPOINT SP2;

-- Step 3: Create Tables

CREATE TABLE t_employees (

ID INT,

Name VARCHAR(50),

Department VARCHAR(50),

Salary INT,

```
Year_of_Experience INT  
);
```

```
CREATE TABLE t2_employees (  
    ID INT,  
    Name VARCHAR(50),  
    Department VARCHAR(50),  
    Salary INT,  
    Year_of_Experience INT  
);
```

```
CREATE TABLE t_students (  
    ID INT,  
    Name VARCHAR(50),  
    Hometown VARCHAR(50),  
    Percentage INT,  
    Favourite_Subject VARCHAR(50)  
);
```

```
CREATE TABLE t2_students (  
    ID INT,  
    Name VARCHAR(50),  
    Hometown VARCHAR(50),  
    Percentage INT,  
    Favourite_Subject VARCHAR(50)  
);
```

```
-- Insert data into t_employees
```

```
INSERT INTO t_employees (ID, Name, Department, Salary, Year_of_Experience)
VALUES
(1, 'Aakash Singh', 'Development', 72000, 2),
(2, 'Abhishek Pawar', 'Production', 45000, 1),
(3, 'Pranav Deshmukh', 'HR', 59900, 3),
(4, 'Shubham Mahale', 'Accounts', 57000, 2),
(5, 'Sunil Kulkarni', 'Development', 87000, 3),
(6, 'Bhushan Wagh', 'R&D', 75000, 2),
(7, 'Paras Jaiswal', 'Marketing', 32000, 1);
```

-- Insert data into t2_employees

```
INSERT INTO t2_employees (ID, Name, Department, Salary, Year_of_Experience)
VALUES
(1, 'Prashant Wagh', 'R&D', 49000, 1),
(2, 'Abhishek Pawar', 'Production', 45000, 1),
(3, 'Gautam Jain', 'Development', 56000, 4),
(4, 'Shubham Mahale', 'Accounts', 57000, 2),
(5, 'Rahul Thakur', 'Production', 76000, 4),
(6, 'Bhushan Wagh', 'R&D', 75000, 2),
(7, 'Anand Singh', 'Marketing', 28000, 1);
```

-- Insert data into t_students

```
INSERT INTO t_students (ID, Name, Hometown, Percentage, Favourite_Subject)
VALUES
(1, 'Soniya Jain', 'Udaipur', 89, 'Physics'),
(2, 'Harshada Sharma', 'Kanpur', 92, 'Chemistry'),
(3, 'Anuja Rajput', 'Jaipur', 78, 'History'),
(4, 'Pranali Singh', 'Nashik', 88, 'Geography'),
(5, 'Renuka Deshmukh', 'Panipat', 90, 'Biology'),
```

(6, 'Swati Kumari', 'Faridabad', 93, 'English'),
 (7, 'Prachi Jaiswal', 'Gurugram', 96, 'Hindi');

-- Insert data into t2_students

INSERT INTO t2_students (ID, Name, Hometown, Percentage, Favourite_Subject)
 VALUES

(1, 'Soniya Jain', 'Udaipur', 89, 'Physics'),
 (2, 'Ishwari Dixit', 'Delhi', 86, 'Hindi'),
 (3, 'Anuja Rajput', 'Jaipur', 78, 'History'),
 (4, 'Pakhi Arora', 'Surat', 70, 'Sanskrit'),
 (5, 'Renuka Deshmukh', 'Panipat', 90, 'Biology'),
 (6, 'Jayshree Patel', 'Pune', 91, 'Maths'),
 (7, 'Prachi Jaiswal', 'Gurugram', 96, 'Hindi');

-- Step 5: SET Operators Examples

-- UNION ALL

SELECT * FROM t_employees UNION ALL SELECT * FROM t2_employees;

	ID	Name	Department	Salary	Year_of_Experience
▶	1	Aakash Singh	Development	72000	2
	2	Abhishek Pawar	Production	45000	1
	3	Pranav Deshmukh	HR	59900	3
	4	Shubham Mahale	Accounts	57000	2
	5	Sunil Kulkarni	Development	87000	3
	6	Bhushan Wagh	R&D	75000	2
	7	Paras Jaiswal	Marketing	32000	1
	1	Prashant Wagh	R&D	49000	1
	2	Abhishek Pawar	Production	45000	1
	3	Gautam Jain	Development	56000	4

-- INTERSECT

SELECT * FROM t_students INTERSECT SELECT * FROM t2_students;

	ID	Name	Hometown	Percentage	Favourite_Subject
▶	1	Soniya Jain	Udaipur	89	Physics
	3	Anuja Rajput	Jaipur	78	History
	5	Renuka Deshmukh	Panipat	90	Biology
	7	Prachi Jaiswal	Gurugram	96	Hindi

-- MINUS

-- SELECT * FROM t_employees MINUS SELECT * FROM t2_employees;

SELECT DISTINCT Hometown FROM t_students;

	Hometown
▶	Udaipur
	Kanpur
	Jaipur
	Nashik
	Panipat
	Faridabad
	Gurugram

SELECT COUNT(Salary) AS Count_Salaries, Department
FROM t_employees
GROUP BY Department
HAVING COUNT(Salary) > 1;

	Count_Salaries	Department
▶	2	Development

-- Sample query with GROUP BY

SELECT COUNT(Salary) AS Count_Salaries, Department
FROM t_employees
GROUP BY Department;

	Count_Salaries	Department
▶	2	Development
	1	Production
	1	HR
	1	Accounts
	1	R&D
	1	Marketing

