

# Dairy Farm Management System

19CSE202 - DBMS

**cold,  
smooth &  
tasty.**

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  2. AM.EN.U4CSE22114-DARSHANKUMAR
  3. AM.EN.U4CSE22131-CHARAN KUMAR
  4. AM.EN.U4CSE22140-MOULI PALLURU

# *Introduction*

A DAIRY FARM MANAGEMENT SYSTEM IN DBMS IS A COMPREHENSIVE SOLUTION THAT HELPS DAIRY FARMERS STREAMLINE THEIR OPERATIONS, IMPROVE EFFICIENCY, ENSURE COMPLIANCE WITH REGULATORY STANDARDS, AND ACHIEVE BETTER FARM OUTCOMES. IT SERVES AS A VALUABLE TOOL FOR MODERN DAIRY FARMS SEEKING TO LEVERAGE TECHNOLOGY FOR SUSTAINABLE AND PROFITABLE AGRICULTURE PRACTICES.



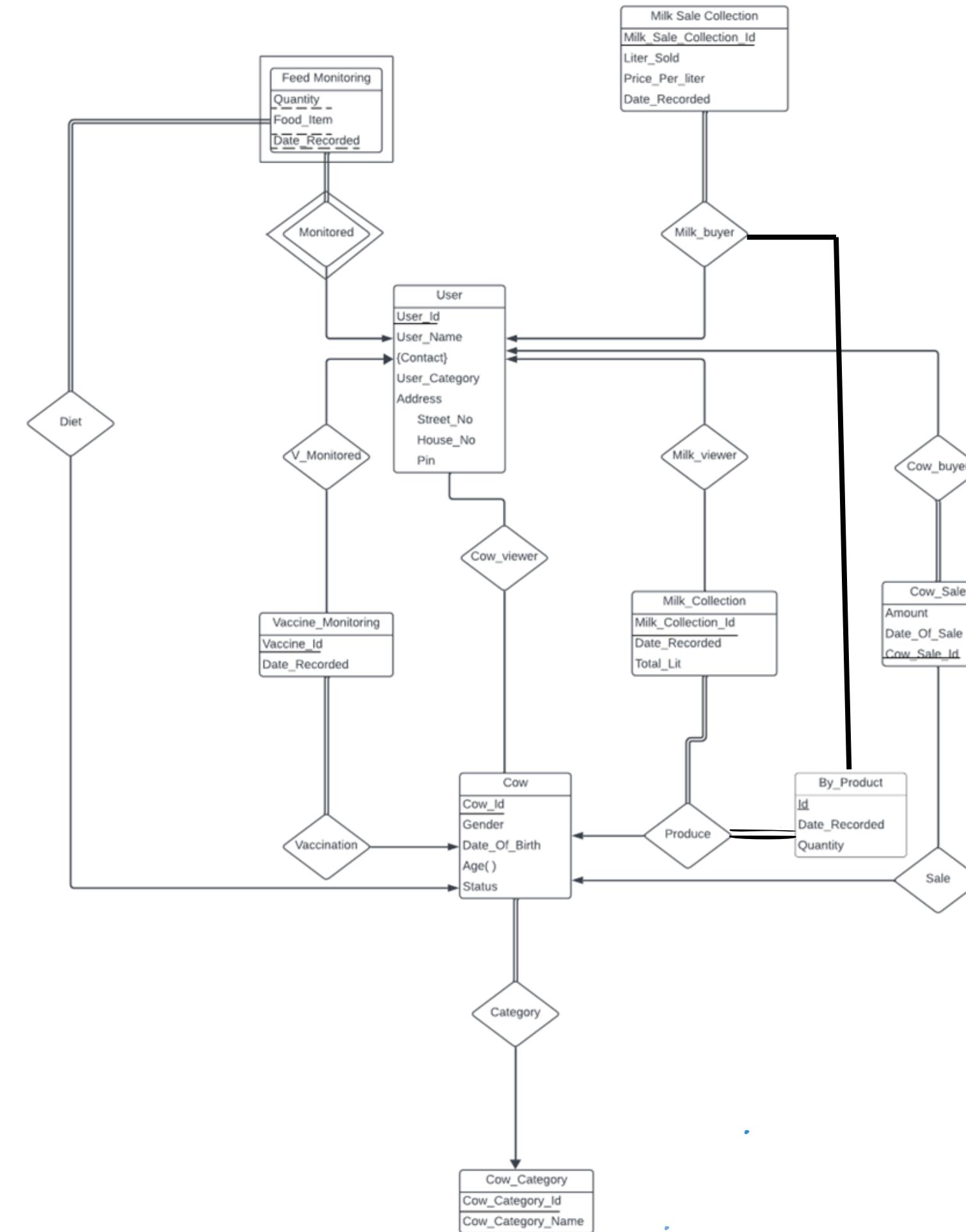
# why we use DBMS over file system?

## OUR STORY

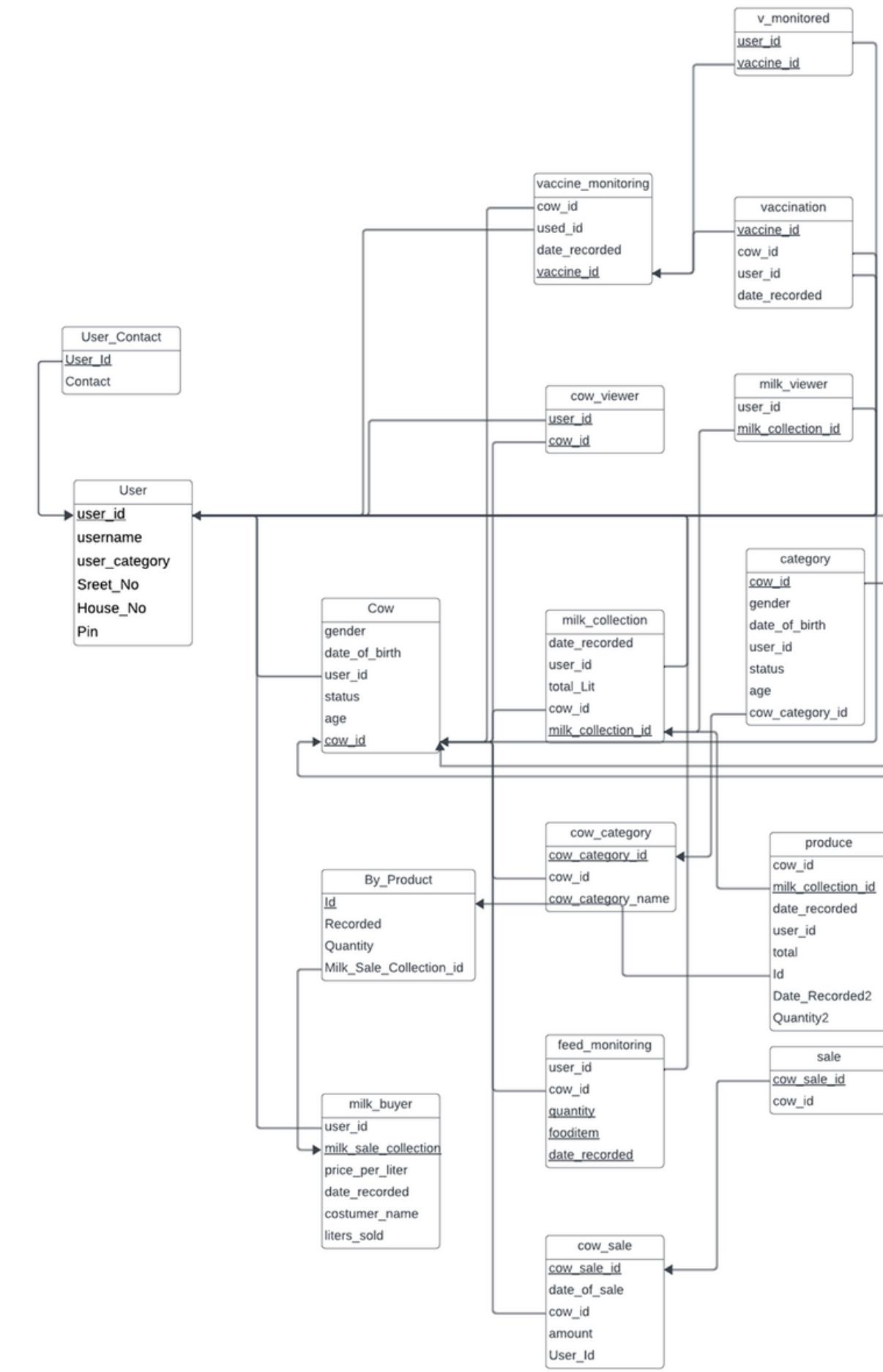
using a DBMS offers numerous advantages over a file system in terms of data management, security, efficiency, and scalability. It provides a reliable platform for storing, managing, and analyzing data, making it an essential component of modern enterprise applications and systems.



# ER-DIAGRAM



# SCHEMA DIAGRAM



# **Relational Schema:-**

- User(User\_Id , User\_Name, User\_Category, Street\_No, House\_No, Pin)
  - User\_Contact(User\_Id, Contact)
  - Cow(Cow\_Id, Gender, Date\_Of\_Birth, Status)
    - Cow\_viewer(user\_id,cow\_id)
- Milk\_buyer(user\_id,milk\_sale\_collection,litres\_sold,price\_per\_litre,date\_recorded)
  - Vaccine\_Monitoring(Vaccine\_Id,Date\_Recorded)
- V\_Monitored(V\_Result,User\_Id,Vaccine\_Id,User\_Name,User\_Category,Street\_No,House\_No,Pin)
  - Milk\_Viewer(User\_Id,Milk\_Collection\_Id)
  - Milk\_Collection(Milk\_Collection\_Id,Date\_Recorded,Total\_Lit)
  - Vaccination(Vaccine\_Id,Cow\_Id,Date\_Recorded)

- Cow\_Sale(Cow\_Sale\_Id,Date\_Of\_Sale,Amount)
  - Sale(Cow\_Sale\_Id,Cow\_Id)
- Produce\_Milk\_Collection(Cow\_id,Milk\_Collection\_Id,Date\_Recorded,Total\_Lit)
  - Cow\_Category(Cow\_Category\_Id,Cow\_Category\_Name)
  - Category(Cow\_Id,Gender,Date\_Of\_Birth,Status,Cow\_Category\_Id)
- Feed\_Monitoring(Cow\_Id,User\_Id,Quantity,Food\_Item,Date\_Recorded)
  - By\_Product(Id,Date\_Recorded2,Quantity2)
    - Milk\_Buyer(Id,User\_Id)
      - o Ternary relation-Produce,Milk\_Buyer
      - o Multi Valued Attribute-Contact
        - o Derived Attribute-Age
        - o Composite Attribute-Address

# MASTER TABLE

USER_ID	USER_NAME	USER_CATEGORY	COW_ID	COW_CATEGORY_ID	COW_SELLER_ID	COW_SALE_AMOUNT	GENDER

DATE_OF_BIRTH	COW_AGE	DATE_OF_SALE	STATUS	CONTACT	PIN	STREET_NO	HOUSE_NO

1NF

## UserInfo

USER_ID	USER_NAME	USER_CATEGORY	COW_ID	COW_CATEGORY_ID	COW_SALE_ID	COW_SALE_AMOUNT	GENDER

DATE_OF_BIRTH	COW_AGE	DATE_OF_SALE	STATUS	PIN	STREET_NO	HOUSE_NO

## User\_Contact

USER_ID	CONTACT_1	CONTACT_2

## Partial Dependencies:



In Table\_1, we can see that Cow\_Age depends on Date\_Of\_Birth, which means Cow\_Age is partially dependent on the primary key (User\_Id). This is a partial dependency that needs to be addressed.



2nf

## UserInfo

USER_ID	USER_NAME	USER_CATEGORY	STATUS	HOUSES_NO	STREET_NO	PIN
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## User\_Contact

USER-ID	CONTACT_1	CONTACT_2
---------	-----------	-----------

## Cow\_Information

COW_ID	USER_ID	COW_CATEGORY_ID	COW_SALE_ID	COW_SALE_AMOUNT	GENDER	DATE_OF_BIRTH	DATE_OF_SALE
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# 3NF UserInfo

USER_ID	USER_NAME	USER_CATE GORY	STATUS	STREET_NO	HOUSE_NO	PIN
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## Cow\_Information

COW_ID	DATE_OF_BIRTH	USER_ID	COW_CATEGORY_ID	GENDER
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## User\_Contact

USER_ID	CONTACT_1	CONTACT_2
---------	-----------	-----------

## Cow\_Category

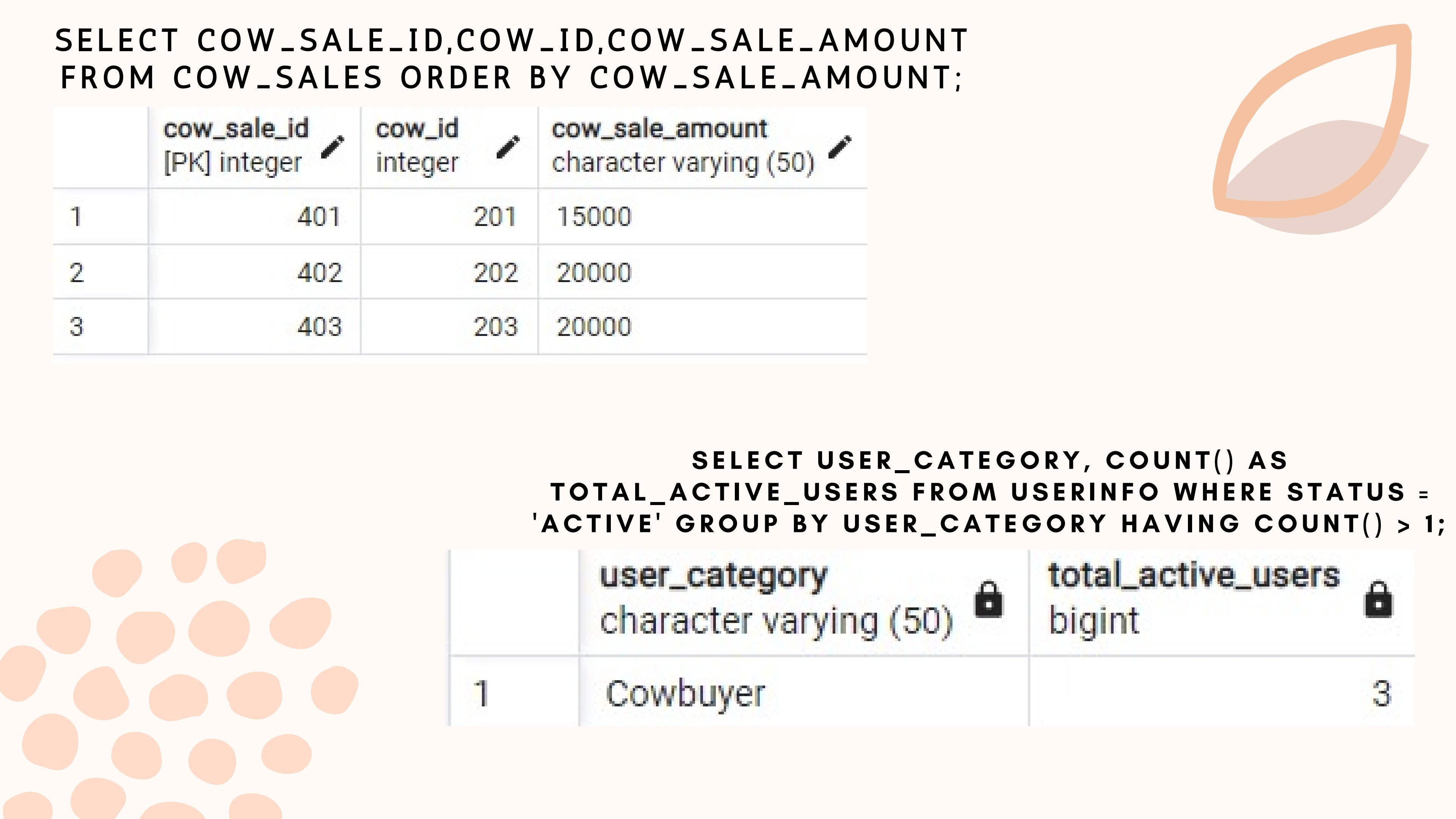
COW_CATEGORY_ID	CATEGORY_NAME
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## Cow\_Sales

COW_SALE_ID	COW_ID	DATE_OF_SALE	COW_SALE_AMOUNT
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```
SELECT COW_SALE_ID,COW_ID,COW_SALE_AMOUNT  
FROM COW_SALES ORDER BY COW_SALE_AMOUNT;
```

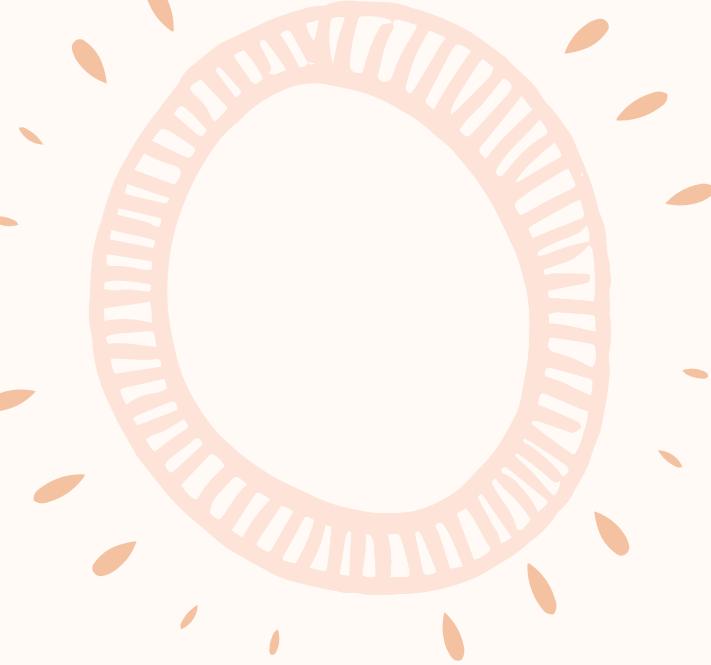
	cow_sale_id [PK] integer	cow_id integer	cow_sale_amount character varying (50)
1	401	201	15000
2	402	202	20000
3	403	203	20000



```
SELECT USER_CATEGORY, COUNT() AS  
TOTAL_ACTIVE_USERS FROM USERINFO WHERE STATUS =  
'ACTIVE' GROUP BY USER_CATEGORY HAVING COUNT() > 1;
```

	user_category character varying (50)	totalActiveUsers bigint
1	Cowbuyer	3

```
SELECT COW_ID,GENDER,CATEGORY_NAME FROM COW_CATEGORY  
JOIN COW_INFORMATION ON  
COW_CATEGORY.COW_CATEGORY_ID=COW_INFORMATION.COW_CATEGORY_ID;
```



	cow_id	gender	category_name
1	201	Female	DairyCow
2	202	Male	DairyCow
3	203	Male	Jersy
4	204	Female	Gir

```
select * from UserInfo left outer join User_Contact on  
UserInfo.User_Id=User_Contact.User_Id;
```

	user_id integer	user_name character varying (50)	user_category character varying (50)	status character varying (50)	street_no integer	house_no character varying (50)	pin integer	user_id integer	contact_1 integer	contact_2 integer
1	101	Revanth	Cowbuyer	Active	123	A	123456	101	1111111	222222
2	102	Mouli	Cowbuyer	Active	345	A	1526	102	3333333	444444
3	103	Charan	Cowbuyer	Inactive	568	H	56	103	4561230	7963210
4	104	Darshan	Cowbuyer	Active	523	T	456	104	74963	763210

select \* from UserInfo right  
outer join User\_Contact on  
UserInfo.User\_Id=User\_Cont  
act.User\_Id;

i	user_name character varying (50)	user_category character varying (50)	status character varying (50)	street_no integer	house_no character varying (50)	pin integer	user_id integer	contact_1 integer
101	Revanth	Cowbuyer	Active	123	A	123456	101	1111
102	Mouli	Cowbuyer	Active	345	A	1526	102	3333
103	Charan	Cowbuyer	Inactive	568	H	56	103	4561
104	Darshan	Cowbuyer	Active	523	T	456	104	74

```
select *from UserInfo where Status = 'Active'  
and User_Category = 'Cowbuyer' or  
User_Category = 'Farmer';
```

	user_name character varying (50)	user_category character varying (50)	status character varying (50)	street_no integer	house_no character varying (50)	pin integer
101	Revanth	Cowbuyer	Active	123	A	123456
102	Mouli	Cowbuyer	Active	345	A	1526
104	Darshan	Cowbuyer	Active	523	T	456

```
select *from UserInfo where Status = 'Active' or  
User_Category = 'Cowbuyer' or  
User_Category = 'Farmer';
```

	user_id [PK] integer	user_name character varying (50)	user_category character varying (50)	status character varying (50)	street_no integer	house_no character varying (50)	pin integer
1	101	Revanth	Cowbuyer	Active	123	A	123456
2	102	Mouli	Cowbuyer	Active	345	A	1526
3	103	Charan	Cowbuyer	Inactive	568	H	56
4	104	Darshan	Cowbuyer	Active	523	T	456

```
select * from Cow_Sales where  
Cow_Sale_Amount>15000;
```

	cow_sale_id [PK] integer	cow_id integer	date_of_sale character varying (50)	cow_sale_amount integer
1	402	202	2023-02-01	20000
2	403	203	2020-02-010	20000

```
select User_Name from UserInfo  
where User_Name like 'C%';
```

	user_name
1	Charan

	sale_date
1	01
2	01
3	10

```
select to_char(Date_Of_Sale::  
Date,'DD') as Sale_Date  
from Cow_Sales;
```

	<code>date_of_birth</code> character varying (50)	<code>birth_year</code> numeric
1	2018-05-20	2018
2	2019-02-15	2019
3	2015-03-5	2015
4	2017-02-25	2017

```
select Date_Of_Birth, extract(year from
Date_Of_Birth::date) as Birth_Year
from Cow_Information;
```

```
select * from Cow_Information where
Cow_Id between 201 and 203;
```

	<code>cow_id</code> [PK] integer	<code>gender</code> character varying (50)	<code>date_of_birth</code> character varying (50)	<code>user_id</code> integer	<code>cow_category_id</code> integer
1	201	Female	2018-05-20	101	1
2	202	Male	2019-02-15	102	2
3	203	Male	2015-03-5	103	3

select \* from Cow\_Information where Cow\_Id  
not between 201 and 203;

	cow_id [PK] integer	gender character varying (50)	date_of_birth character varying (50)	user_id integer	cow_category_id integer
1	204	Female	2017-02-25	104	4

select \* from UserInfo where User\_Id in (101,102);

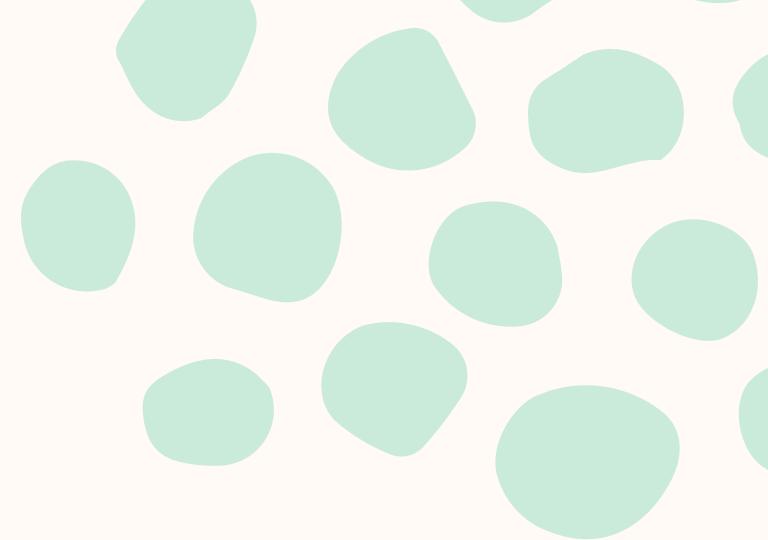
	user_id [PK] integer	user_name character varying (50)	user_category character varying (50)	status character varying (50)	street_no integer	house_no character varying (50)	pin integer
1	101	Revanth	Cowbuyer	Active	123	A	123456
2	102	Mouli	Cowbuyer	Active	345	A	1526

select \* from UserInfo where User\_Id not in (101,102);

	user_id [PK] integer	user_name character varying (50)	user_category character varying (50)	status character varying (50)	street_no integer	house_no character varying (50)	pin integer
1	103	Charan	Cowbuyer	Inactive	568	H	56
2	104	Darshan	Cowbuyer	Active	523	T	456



	cow_category
1	(4,Gir)
2	(2,DairyCow)
3	(3,Jersy)
4	(1,DairyCow)



```
select distinct  
Cow_Category from  
Cow_Category;
```

	user_id	user_name
1	102	Mouli
2	104	Darshan
3	103	Charan
4	101	Revanth

```
select User_Id, User_Name  
from UserInfo union select  
User_Id,  
User_Name from UserInfo;
```

```
select User_Id from UserInfo intersect select  
User_Id from Cow_Information;
```

	user_id	integer
1	101	
2	103	
3	104	
4	102	

```
select User_Id, User_Name from UserInfo  
U where exists (select 1 from  
Cow_Information C where  
C.User_Id = U.User_Id);
```

	user_id	[PK] integer	user_name	character varying (50)
1	101		Revanth	
2	102		Mouli	
3	103		Charan	
4	104		Darshan	

```
select User_Id, User_Name from UserInfo where  
    User_Id = ANY (select User_Id from  
Cow_Information where Gender = 'Female');
```

	user_id	user_name
	[PK] integer	character varying (50)
1	104	Darshan
2	101	Revanth

```
select User_Id, User_Name from UserInfo  
u where 'Active' = ALL ( select Status from  
UserInfo where User_Id = u.User_Id);
```

	user_id	user_name
	[PK] integer	character varying (50)
1	101	Revanth
2	102	Mouli
3	104	Darshan



Thank  
you