PROJECT FOR SQL MODULE
COMPUTER ACCESSORIES

Project Aims:

Data Modeling and Schema Design:
Defines table(entities) such as Products, Suppliers, Customers, Orders with appropriate attributes and relationship.
Ensure tables are normalized to minimize redundancy and ensure data integrity.

Functionality Implementation:
Implement CRUD operations (Create, Read, Update, Delete) for managing Products, Suppliers, Customers, order.
Include transaction management to handle the buying and selling of product updating inventory, and managing statuses.

User Interface:
Develop a user-friendly interface to interact with the database, allowing users(employees, customers) to place orders, view products, manage Inventory and track shipment.

Inventory Management:
Track and manage product inventory levels, ensuring real -time updates when orders are placed or received from suppliers.
Implement alerts or notification for low stock levels to facilitate timely reordering.

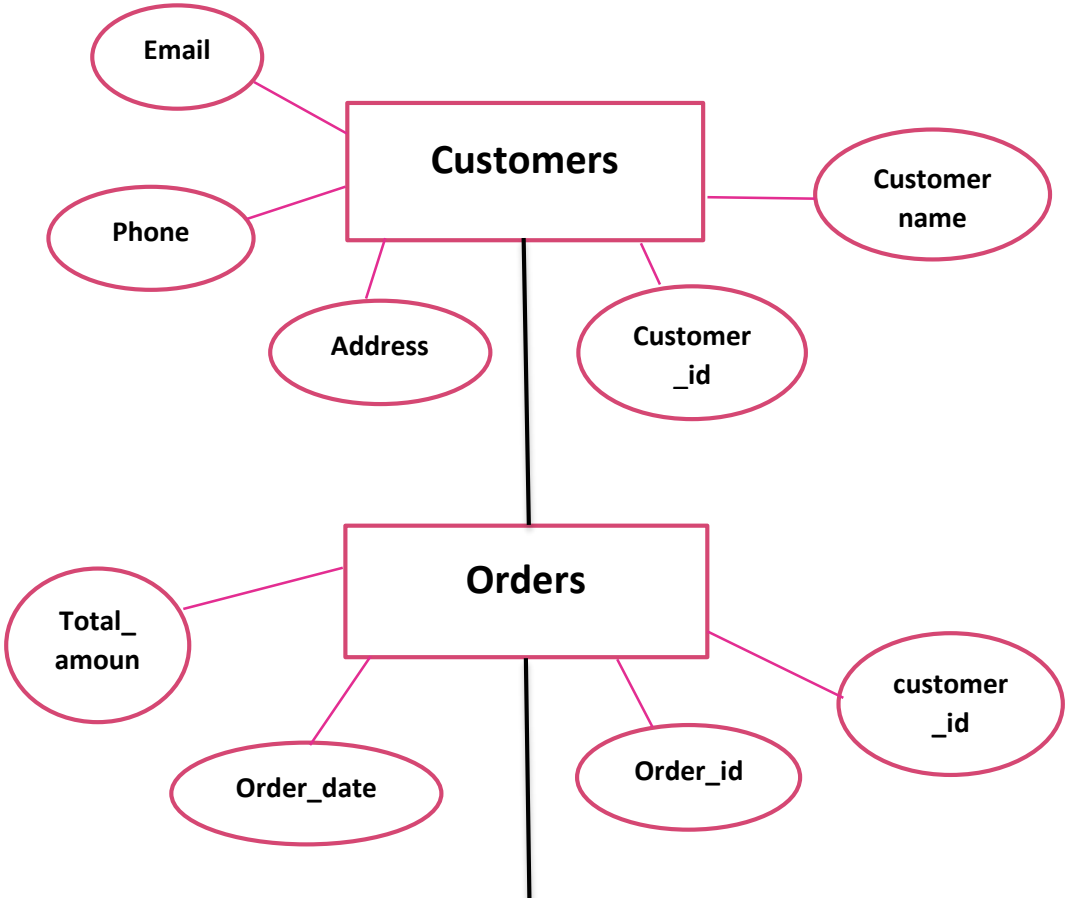
Customer Management:
Store customer information securely and manage customers relationship effectively.

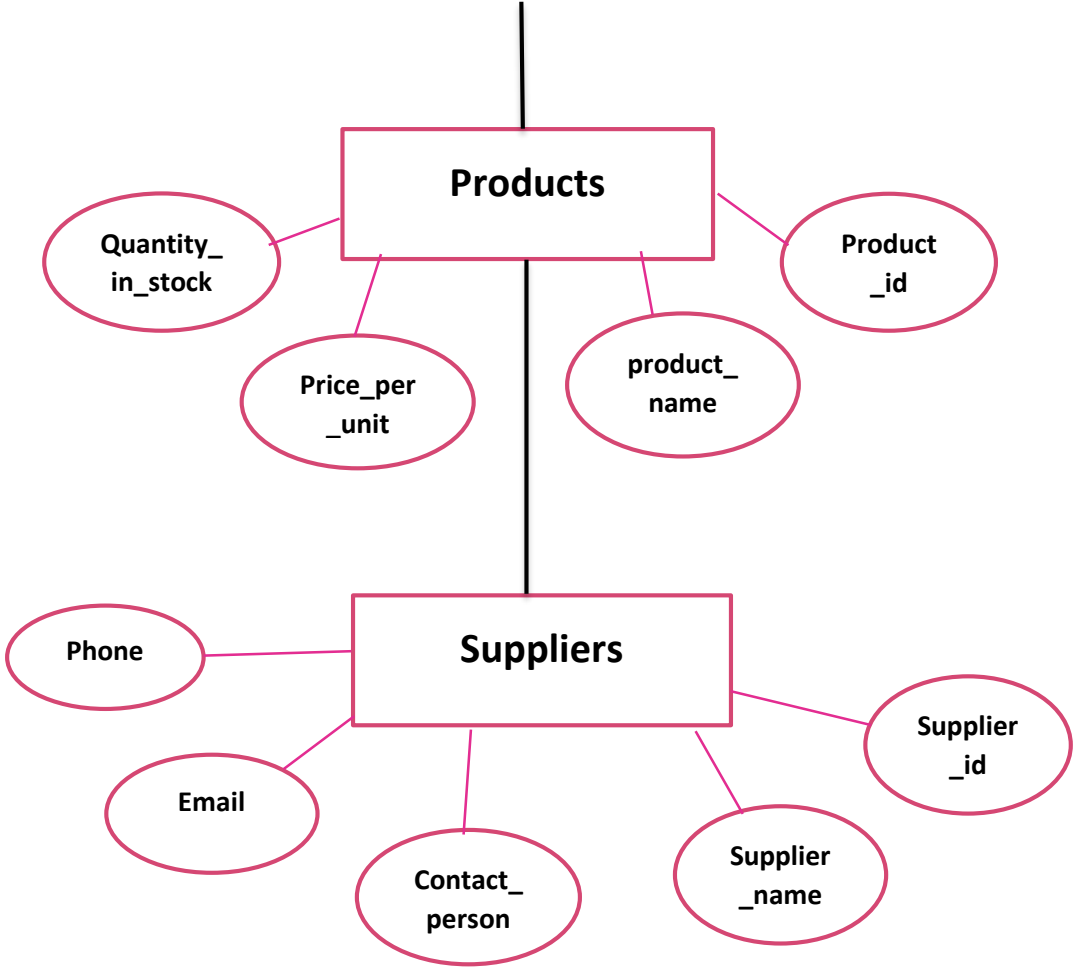
Implement features for customers registration, login and order history tracking.

Supplier Management:
Maintain a database of suppliers and manage relationships.
Track supplier contact information, product offering and order history.

Security and Data Integrity:
Implement security measures such as user authentication and authorization to ensure data confidentiality and prevent unauthorized access.
Use constraints, indexes and foreign keys to enforce data integrity and maintain database consistency.

ER Diagram in Computer Accessories





Product Table

```
create table products(product_id int primary key,product_name varchar(100),
price_per_unit decimal(10,2),quantity_in_stock int);
desc products;
select * from products;
insert into products (product_id,product_name,price_per_unit,quantity_in_stock)
values (1,"Laptop",999.99,50),(2,"Mouse",699.50,200),
(3,"Monitor",1000.99,20),(4,"Headphones",599.50,100),
(5,"CPU",2000.99,30),(6,"Keybord",300.99,50);
```

product_id	product_name	price_per_unit	quantity_in_stock
1	Laptop	999.99	50
2	Mouse	699.50	200
3	Monitor	1000.99	20
4	Headphones	599.50	100
5	CPU	2000.99	30
6	Keybord	300.99	50
NULL	NULL	NULL	NULL

create table suppliers (supplier_id int primary key,supplier_name varchar(100),
contact_person varchar(100),phone varchar(20),email varchar(100));
select * from suppliers;
desc suppliers;
insert into suppliers (supplier_id,supplier_name,contact_person,phone,email)
values (1,"Tech suppliers","rushi","8888504030","rushi@techsuppliers.com"),
(2,"Tech solution","swarup","9890453080","swarup@techsolution.com"),
(3,"gadgets ltd ","sarvesh","8866789012","sarvesh@gadgetsltd.com"),
(4,"info tech pvt ltd","yash","7798795160","yash@infotechpvtltd.com"),
(5,"smart tech ltd","pursha","9890962654","pursha@smarttechltd.com"),
(6,"system solution","kunal","7020453080","kunal@systemsolution.com");

supplier_id	supplier_name	contact_person	phone	email
1	Tech suppliers	rushi	8888504030	rushi@techsuppliers.com
2	Tech solution	swarup	9890453080	swarup@techsolution.com
3	gadgets ltd	sarvesh	8866789012	sarvesh@gadgetsltd.com
4	info tech pvt ltd	yash	7798795160	yash@infotechpvtltd.com
5	smart tech ltd	pursha	9890962654	pursha@smarttechltd.com
6	system solution	kunal	7020453080	kunal@systemsolution.com
NULL	NULL	NULL	NULL	NULL

create table customers(customer_id int primary key,customer_name varchar(100),

address text,phone varchar(20),email varchar(100));
select * from customers;
desc customers;
insert into customers (customer_id,customer_name,Address,phone,email)
values(10,"sumit","123 main stn","1234567890","sumit@gmail.com"),
(20,"daya","456 main stn","0987654321","daya@gmail.com"),
(30,"shinu","789 main stn","1122334455","shinu@gmail.com"),
(40,"rahul","987 main stn","6677889900","rahul@gmail.com"),
(50,"pradeep","654 main stn","2349875612","pradeep@gmail.com"),
(60,"nitesh","432 main stn","2323454567","nitesh@gmail.com");

customer_id	customer_name	address	phone	email
10	sumit	123 main stn	1234567890	sumit@gmail.com
20	daya	456 main stn	0987654321	daya@gmail.com
30	shinu	789 main stn	1122334455	shinu@gmail.com
40	rahul	987 main stn	6677889900	rahul@gmail.com
50	pradeep	654 main stn	2349875612	pradeep@gmail.com
60	nitesh	432 main stn	2323454567	nitesh@gmail.com
NULL	NULL	NULL	NULL	NULL

create table orders (order_id int primary key, order_date date,total_amount decimal(10,2),
customer_id int,foreign key (customer_id) references customers(customer_id));
select * from orders;
insert into orders (order_id,order_date,total_amount,customer_id) values
(100,"2024-10-01",200.50,10),(200,"2024-09-06",300.50,20),(300,"2024-08-10",350.50,30),
(400,"2024-11-09",500.50,40),(500,"2024-01-01",400.50,50),(600,"2024-11-03",650.50,60);

order_id	order_date	total_amount	customer_id
100	2024-10-01	200.50	10
200	2024-09-06	300.50	20
300	2024-08-10	350.50	30
400	2024-11-09	500.50	40
500	2024-01-01	400.50	50
600	2024-11-03	650.50	60
NULL	NULL	NULL	NULL

select * from orders where order_id>300 and total_amount>350.50;

order_id	order_date	total_amount	customer_id
400	2024-11-09	500.50	40
500	2024-01-01	400.50	50
600	2024-11-03	650.50	60
NULL	NULL	NULL	NULL

select * from customers where customer_id>20 or address>"456 main stn" or customer_name="daya";

customer_id	customer_name	address	phone	email
20	daya	456 main stn	0987654321	daya@gmail.com
30	shinu	789 main stn	1122334455	shinu@gmail.com
40	rahul	987 main stn	6677889900	rahul@gmail.com
50	pradeep	654 main stn	2349875612	pradeep@gmail.com
60	nitesh	432 main stn	2323454567	nitesh@gmail.com
NULL	NULL	NULL	NULL	NULL

select * from customers where customer_id between 20 and 60;

customer_id	customer_name	address	phone	email
20	daya	456 main stn	0987654321	daya@gmail.com
30	shinu	789 main stn	1122334455	shinu@gmail.com
40	rahul	987 main stn	6677889900	rahul@gmail.com
50	pradeep	654 main stn	2349875612	pradeep@gmail.com
60	nitesh	432 main stn	2323454567	nitesh@gmail.com
NULL	NULL	NULL	NULL	NULL

select * from customers where address in("123 main stn","789 main stn","432 main stn");

customer_id	customer_name	address	phone	email
10	sumit	123 main stn	1234567890	sumit@gmail.com
30	shinu	789 main stn	1122334455	shinu@gmail.com
60	nitesh	432 main stn	2323454567	nitesh@gmail.com
NULL	NULL	NULL	NULL	NULL

select * from customers where address not in("123 main stn","789 main stn","432 main stn");

customer_id	customer_name	address	phone	email
20	daya	456 main stn	0987654321	daya@gmail.com
40	rahul	987 main stn	6677889900	rahul@gmail.com
50	pradeep	654 main stn	2349875612	pradeep@gmail.com
NULL	NULL	NULL	NULL	NULL

select * from customers order by customer_name;

customer_id	customer_name	address	phone	email
20	daya	456 main stn	0987654321	daya@gmail.com
60	nitesh	432 main stn	2323454567	nitesh@gmail.com
50	pradeep	654 main stn	2349875612	pradeep@gmail.com
40	rahul	987 main stn	6677889900	rahul@gmail.com
30	shinu	789 main stn	1122334455	shinu@gmail.com
10	sumit	123 main stn	1234567890	sumit@gmail.com
NULL	NULL	NULL	NULL	NULL

select * from customers order by customer_name asc;

customer_id	customer_name	address	phone	email
20	daya	456 main stn	0987654321	daya@gmail.com
60	nitesh	432 main stn	2323454567	nitesh@gmail.com
50	pradeep	654 main stn	2349875612	pradeep@gmail.com
40	rahul	987 main stn	6677889900	rahul@gmail.com
30	shinu	789 main stn	1122334455	shinu@gmail.com
10	sumit	123 main stn	1234567890	sumit@gmail.com
NULL	NULL	NULL	NULL	NULL

select * from customers order by customer_name desc;

customer_id	customer_name	address	phone	email
10	sumit	123 main stn	1234567890	sumit@gmail.com
30	shinu	789 main stn	1122334455	shinu@gmail.com
40	rahul	987 main stn	6677889900	rahul@gmail.com
50	pradeep	654 main stn	2349875612	pradeep@gmail.com
60	nitesh	432 main stn	2323454567	nitesh@gmail.com
20	daya	456 main stn	0987654321	daya@gmail.com
NULL	NULL	NULL	NULL	NULL

select * from customers order by customer_id desc limit 5;

customer_id	customer_name	address	phone	email
60	nitesh	432 main stn	2323454567	nitesh@gmail.com
50	pradeep	654 main stn	2349875612	pradeep@gmail.com
40	rahul	987 main stn	6677889900	rahul@gmail.com
30	shinu	789 main stn	1122334455	shinu@gmail.com
20	daya	456 main stn	0987654321	daya@gmail.com
NULL	NULL	NULL	NULL	NULL

select * from customers where customer_name like "%ay%";

customer_id	customer_name	address	phone	email
20	daya	456 main stn	0987654321	daya@gmail.com
NULL	NULL	NULL	NULL	NULL

select * from customers where customer_name like "__h%";

customer_id	customer_name	address	phone	email
40	rahul	987 main stn	6677889900	rahul@gmail.com
NULL	NULL	NULL	NULL	NULL

select * from customers where customer_name is null;

customer_id	customer_name	address	phone	email
NULL	NULL	NULL	NULL	NULL

select * from customers where customer_name is not null;

customer_id	customer_name	address	phone	email
10	sumit	123 main stn	1234567890	sumit@gmail.com
20	daya	456 main stn	0987654321	daya@gmail.com
30	shinu	789 main stn	1122334455	shinu@gmail.com
40	rahul	987 main stn	6677889900	rahul@gmail.com
50	pradeep	654 main stn	2349875612	pradeep@gmail.com
60	nitesh	432 main stn	2323454567	nitesh@gmail.com
NULL	NULL	NULL	NULL	NULL

update customers set customer_name="shiv",phone="9309115569",address="bhiwandi";

customer_id	customer_name	address	phone	email
10	shiv	bhiwandi	9309115569	sumit@gmail.com
20	shiv	bhiwandi	9309115569	daya@gmail.com
30	shiv	bhiwandi	9309115569	shinu@gmail.com
40	shiv	bhiwandi	9309115569	rahul@gmail.com
50	shiv	bhiwandi	9309115569	pradeep@gmail.com
60	shiv	bhiwandi	9309115569	nitesh@gmail.com
NULL	NULL	NULL	NULL	NULL

select abs(10) as result;

result
10

delete from customers where customer_id=40;

customer_id	customer_name	address	phone	email
10	shiv	bhiwandi	9309115569	sumit@gmail.com
20	shiv	bhiwandi	9309115569	daya@gmail.com
30	shiv	bhiwandi	9309115569	shinu@gmail.com
50	shiv	bhiwandi	9309115569	pradeep@gmail.com
60	shiv	bhiwandi	9309115569	nitesh@gmail.com
NULL	NULL	NULL	NULL	NULL

select ceil(16.4) as result;

result
17

select floor(16.4) as result;

result
16

select round(16.4) as result;

result
16

select pow(4,2) as result;

result
16

select sqrt(250)as result;

result
15.811388300841896

select curdate() as sys_date;

sys_date
2024-10-13

select curtime() as sys_time;

sys_time
23:25:05

select now() as result;

result
2024-10-13 23:26:13

select year('2024-09-19') as result;

result
2024

select month('2024-09-11') as result;

result
9

select day('2024-09-19') as result;

result
19

select datediff('2024-09-11','2023-09-11')as result;

result
366

select date_format(now(),'%D %M %Y')as result;

result
13th October 2024

select address ,count(address) as result from customers group by(address);

address	result
123 main stn	1
456 main stn	1
789 main stn	1
987 main stn	1
654 main stn	1
432 main stn	1

select count(phone)as result from customers group by(phone);

result
1
1
1
1
1
1

select phone,avg(phone)as result from customers group by(phone);

phone	result
1234567890	1234567890
0987654321	987654321
1122334455	1122334455
6677889900	6677889900
2349875612	2349875612
2323454567	2323454567

Select * from orders where customer_id not in(select customer_id from customers);

order_id	order_date	total_amount	customer_id
NULL	NULL	NULL	NULL

select product_name, supplier_name from products inner join suppliers on product_id = supplier_id;

product_name	supplier_name
Laptop	Tech suppliers
Mouse	Tech solution
Monitor	gadgets ltd
Headphones	info tech pvt ltd
CPU	smart tech ltd
Keybord	system solution

select product_name, supplier_name from products cross join suppliers;

product_name	supplier_name
Keybord	Tech suppliers
CPU	Tech suppliers
Headphones	Tech suppliers
Monitor	Tech suppliers
Mouse	Tech suppliers
Laptop	Tech suppliers
Keybord	Tech solution
CPU	Tech solution

select max(total_amount) as heighstorderamount from orders;

heighstorderamount
650.50

select min(total_amount) as lowestorderamount from orders;

lowestorderamount
200.50

select avg(total_amount) as Averageorderamount from orders;

Averageorderamount
400.500000

select * from orders order by total_amount desc limit 1;

order_id	order_date	total_amount	customer_id
600	2024-11-03	650.50	60
NULL	NULL	NULL	NULL

select * from orders order by total_amount desc limit 1 offset 3;

order_id	order_date	total_amount	customer_id
300	2024-08-10	350.50	30
NULL	NULL	NULL	NULL

select supplier_name from suppliers where supplier_id in (select supplier_id from products);

supplier_name
Tech suppliers
Tech solution
gadgets ltd
info tech pvt ltd
smart tech ltd
system solution

Conclusion:

The aim of a dairy business project in SQL is to build a robust database system that supports the business operation effectively, by focusing on data modelling, functionality implementation, user interface design (if applicable), inventory management, customer and supplier management, reporting and security, you can create a comprehensive solution that meets the needs of the dairy business efficiently. Adjustments and enhancements can be made based on specific business requirements and operational workflows.