DATABASE DESIGN PROJECT

A. TITLE

"Efficient Inventory Management System: Designing a Robust Database Solution for Streamlined Control and Optimization"

B. DATABASE

II.

Create

```sql
-- Inventory table
CREATE TABLE Inventory (
  inventory_id INT PRIMARY KEY AUTO_INCREMENT,
  name VARCHAR(255) NOT NULL,
  quantity INT NOT NULL,
  price DECIMAL(10, 2) NOT NULL
);

-- Supplier table
CREATE TABLE Supplier (
  supplier_id INT PRIMARY KEY AUTO_INCREMENT,
  name VARCHAR(255) NOT NULL,
  address VARCHAR(255) NOT NULL,
  contact_number VARCHAR(20) NOT NULL
);

-- Purchase table
CREATE TABLE Purchase (
  purchase_id INT PRIMARY KEY AUTO_INCREMENT,
  inventory_id INT,
  supplier_id INT,
  purchase_date DATE NOT NULL,
  quantity INT NOT NULL,
  FOREIGN KEY (inventory_id) REFERENCES Inventory(inventory_id),
  FOREIGN KEY (supplier_id) REFERENCES Supplier(supplier_id)
);
```

Select

```sql
-- SELECT command: Retrieve all inventory details
SELECT * FROM Inventory;

-- UPDATE command: Update inventory quantity
UPDATE Inventory
SET quantity = 100
WHERE inventory_id = 1;

-- DELETE command: Delete an inventory item
DELETE FROM Inventory
WHERE inventory_id = 1;

-- INSERT command: Insert a new inventory item
INSERT INTO Inventory (name, quantity, price)
VALUES ('Product A', 50, 10.99);
```

Delete

```sql
-- Delete the inventory item with inventory_id = 1
DELETE FROM Inventory
WHERE inventory_id = 1;
```

Insert

```sql
-- Insert a new inventory item into the Inventory table
INSERT INTO Inventory (name, quantity, price)
VALUES ('Product B', 75, 15.99);
```

III.

1. Inventory Table:

- One-to-Many relationship with the Purchase Table:
- The Inventory table is referenced by the inventory_id foreign key in the Purchase table. This indicates that one inventory item can have multiple purchases associated with it.

2. Supplier Table:

- One-to-Many relationship with the Purchase Table:
- The Supplier table is referenced by the supplier_id foreign key in the Purchase table. This indicates that one supplier can have multiple purchases associated with them.

The relationships can be summarized as follows:

- Inventory (1) ----< Purchase (Many)
- Supplier (1) ----< Purchase (Many)

IV.

customer_id	customer_name	email
1	John Doe	johndoe@example.com
2	Jane Smith	janesmith@example.com
3	Bob Johnson	bobjohnson@example.com
4	Alice Williams	awilliams@example.com
5	Michael Brown	mbrown@example.com
6	Sarah Davis	sdavis@example.com
7	David Taylor	dtaylor@example.com
8	Jennifer Lee	jlee@example.com
9	Robert Anderson	randerson@example.com
10	Jessica Martinez	jmartinez@example.com
11	William Clark	wclark@example.com
12	Emily Rodriguez	erodriguez@example.com
13	Daniel Lewis	dlewis@example.com
14	Olivia Hall	ohall@example.com
15	Joseph Hill	jhill@example.com
16	Ava Young	ayoung@example.com
17	Matthew Wright	mwright@example.com
18	Sophia Lopez	slopez@example.com
19	James Scott	jscott@example.com
20	Mia Green	mgreen@example.com
21	Benjamin Adams	badams@example.com
22	Charlotte Baker	cbaker@example.com
23	Daniel Wood	dwood@example.com
24	Harper Harris	hharris@example.com
25	Evelyn King	eking@example.com
26	Jackson Wright	jwright@example.com
27	Amelia Reed	areed@example.com
28	Lucas Collins	lcollins@example.com
29	Mia Garcia	mgarcia@example.com
30	Alexander Cook	acook@example.com
31	Grace Lee	glee@example.com
32	Benjamin Hill	bhill@example.com
33	Ava Turner	aturner@example.com
34	Zoe Foster	zfoster@example.com
35	Ethan Evans	eevans@example.com
36	Amelia Torres	atorres@example.com
37	Landon Patterson	lpatterson@example.com
38	Harper Diaz	hdiaz@example.com
39	Evelyn Foster	efoster@example.com
40	Liam Griffin	lgriffin@example.com
41	Ella Diaz	ediaz@example.com
42	Michael Taylor	mtaylor@example.com
43	Mia Hill	mhill@example.com
44	Alexander Scott	ascott@example.com
45	Sofia Murphy	smurphy@example.com
46	Noah Mitchell	nmitchell@example.com
47	Olivia Collins	ocollins@example.com
48	Emma Wright	ewright@example.com
49	Mason Turner	mturner@example.com
50	Ava King	aking@example.com
51	Lucas Reed	lreed@example.com
52	Harper Harris	hharris@example.com
53	Ethan Young	eyoung@example.com
54	Amelia Carter	acarter@example.com
55	Benjamin King	bking@example.com
56	Mia Anderson	manderson@example.com
57	Chloe Harris	charris@example.com
58	William Adams	wadams@example.com
59	Emily Davis	edavis@example.com
60	Ava Perez	aperez@example.com
61	Alexander Garcia	agarcia@example.com
62	Harper Allen	hallen@example.com
63	Sophia Wright	swright@example.com
64	James Foster	jfoster@example.com

65	Olivia Hall	ohall@example.com
66	Emma Brooks	ebrooks@example.com
67	Lucas Martinez	lmartinez@example.com
68	Mia Turner	mturner@example.com
69	Benjamin Wilson	bwilson@example.com
70	Sophia Campbell	scampbell@example.com
71	Ethan Roberts	eroberts@example.com
72	Amelia Wilson	awilson@example.com
73	Daniel Hill	dhill@example.com
74	Emily Cook	ecook@example.com
75	Ava Perez	aperez@example.com
76	Mason Torres	mtorres@example.com
77	Olivia Carter	ocarter@example.com
78	Chloe Baker	cbaker@example.com
79	William Mitchell	wmitchell@example.com
80	Sophia Adams	sadams@example.com
81	James Wright	jwright@example.com
82	Emily Walker	ewalker@example.com
83	Alexander Allen	aallen@example.com
84	Mia Campbell	mcampbell@example.com
85	Benjamin Wright	bwright@example.com
86	Emma Turner	eturner@example.com
87	Harper Lee	hlee@example.com
88	Ethan Garcia	egarcia@example.com
89	Amelia Brooks	abrooks@example.com
90	Sophia Hernandez	shernandez@example.com
91	James Clark	jclark@example.com
92	Olivia Taylor	otaylor@example.com
93	Chloe Adams	cadams@example.com
94	William Carter	wcarter@example.com
95	Emma Baker	ebaker@example.com
96	Benjamin Young	byoung@example.com
97	Mia Smith	msmith@example.com
98	Ethan Anderson	eanderson@example.com
99	Amelia Hernandez	ahernandez@example.com
100	Sophia Lopez	slopez@example.com

C. PSEUDOCODES

```
// Retrieve inventory details
SELECT * FROM Inventory;
```

```
// Update inventory quantity
UPDATE Inventory
SET quantity = 100
WHERE inventory_id = 1;
```

```
// Delete an inventory item
DELETE FROM Inventory
WHERE inventory_id = 1;
```

```
// Insert a new inventory item
INSERT INTO Inventory (name, quantity, price)
VALUES ('Product A', 50, 10.99);
```

D. UI of the Project Proposal

Project Proposal UI Overview: The UI of the project proposal could consist of multiple sections that provide an organized and visually appealing presentation of the information. Here's a possible structure:

A. Header:

- A prominent header displaying the project title or logo.
- Navigation elements for easy access to different sections of the proposal.

B. Introduction:

- An introductory section outlining the purpose and objectives of the project.
- Brief information about the current inventory management process and the need for improvement.

C. Project Overview:

- A section summarizing the key features and functionalities of the proposed computerized inventory control system.
- Use of visually appealing graphics or icons to represent system components.

D. Technical Approach:

- A section detailing the technical aspects of the project, such as the chosen programming language, database management system, and frameworks or libraries being utilized.
- Diagrams or flowcharts illustrating the system architecture or workflow.

E. Division of Labor:

- A section presenting the division of labor within the team, highlighting the roles and responsibilities of each member.

- Possibly using a table or visual representation to make it easier to understand.

F. Timeline and Milestones:

- A visually appealing timeline showcasing the project's major milestones, including start and end dates for each phase.
- Accompanying descriptions of key activities or deliverables for each milestone.

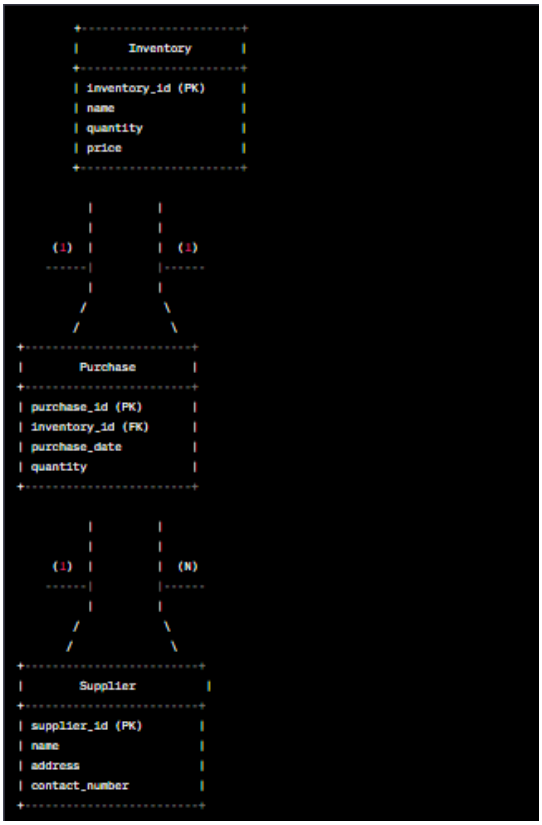
G. Budget and Resources:

- A section detailing the estimated budget and required resources for the project, such as hardware, software licenses, and external services.
- Visual representation, such as a bar chart or pie chart, to highlight the distribution of the budget across different areas.

H. Conclusion and Next Steps:

- A concluding section summarizing the proposal and reiterating the anticipated benefits of implementing the computerized inventory control system.
- Next steps or recommended actions, such as scheduling a presentation or seeking approval from stakeholders.

E. ERD FOR DATABASE DESIGN



1. Relationship between Inventory and Purchase:

- Degree: One-to-Many
- Connectivity: One Inventory can have multiple Purchases, but each Purchase is associated with only one Inventory item.
- Cardinality: Inventory (1) - Purchase (Many)

2. Relationship between Purchase and Supplier:

- Degree: Many-to-One
- Connectivity: Many Purchases can be associated with one Supplier, but each Purchase is associated with only one Supplier.
- Cardinality: Purchase (Many) - Supplier (1)