"Heaven's light is our guide"

Rajshahi University of Engineering & Technology

Department of Computer Science & Engineering

Course No: CSE 3102

Course Title: Database System Sessional

Lab Report (Lab 2)

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INTRODUCTION TO THE PROBLEM

The problem is about a **customer-sale** scenario where we need to store and manipulate data within database.

A **database** is a collection of information that is organized so that it can be easily accessed, managed and updated. Computer **databases** typically contain aggregations of data records or files, containing information about sales transactions or interactions with specific customers.

A **database management system** (**DBMS**) is a software package designed to define, manipulate, retrieve and **manage** data in a **database**. A **DBMS** generally manipulates the data itself, the data format, field names, record structure and file structure. It also defines rules to validate and manipulate this data.

PROBLEM STATEMENT

Database Schema:

Customer (Cust id : integer, cust_name: string)

Item (item_id: integer, item_name: string, price: integer)

Sale (bill_no: integer, bill_date: date, qty_sold: integer)

Relation_c_i (cust_id, item_id)

Relation_c_s (cust_id, bill_no)

The problem is to perform the following:

- Creating table and inserting records
- Designing relationship set tables
- Listing the bill details with quantity sold, total price of the items
- Listing the total bill details with customer name, quantity sold and total billable amount

OBJECTIVES

- Learning about Database
- Learning about Database Management System (DBMS)
- Creating and manipulating Database
- Performing Queries to the Database

DESIGNED DATABASE

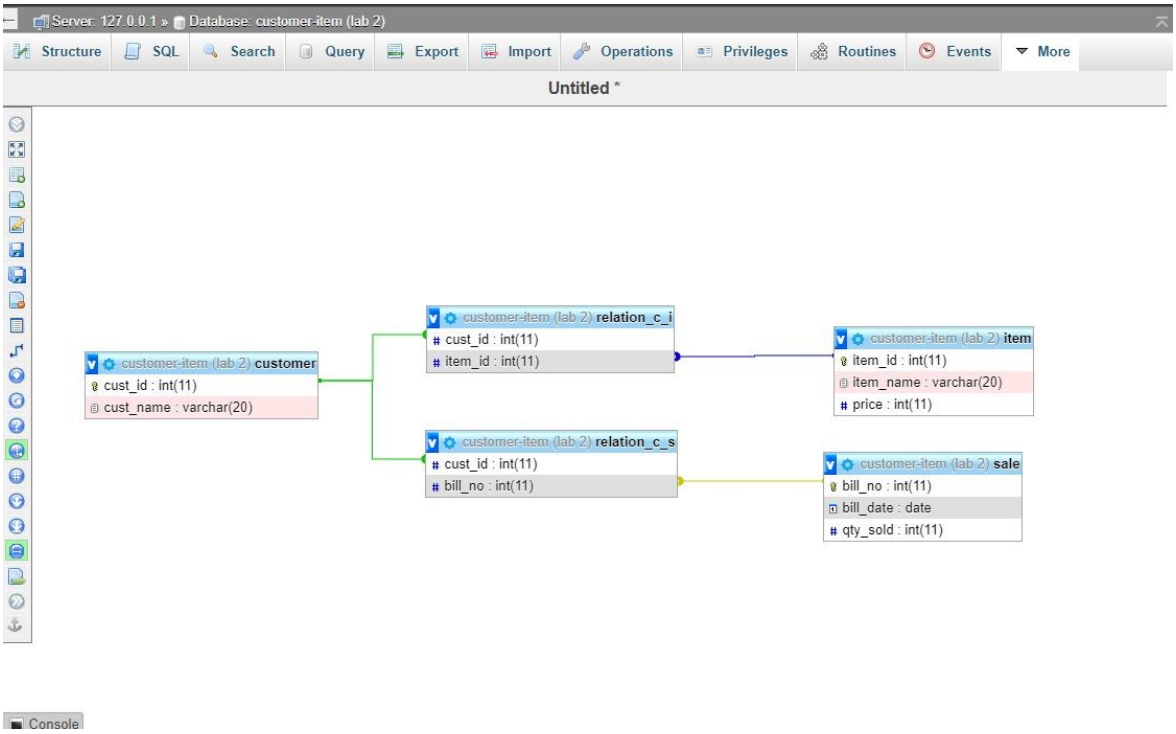

Fig 2.1: Database design for billing details with quantity sold, total price of the items

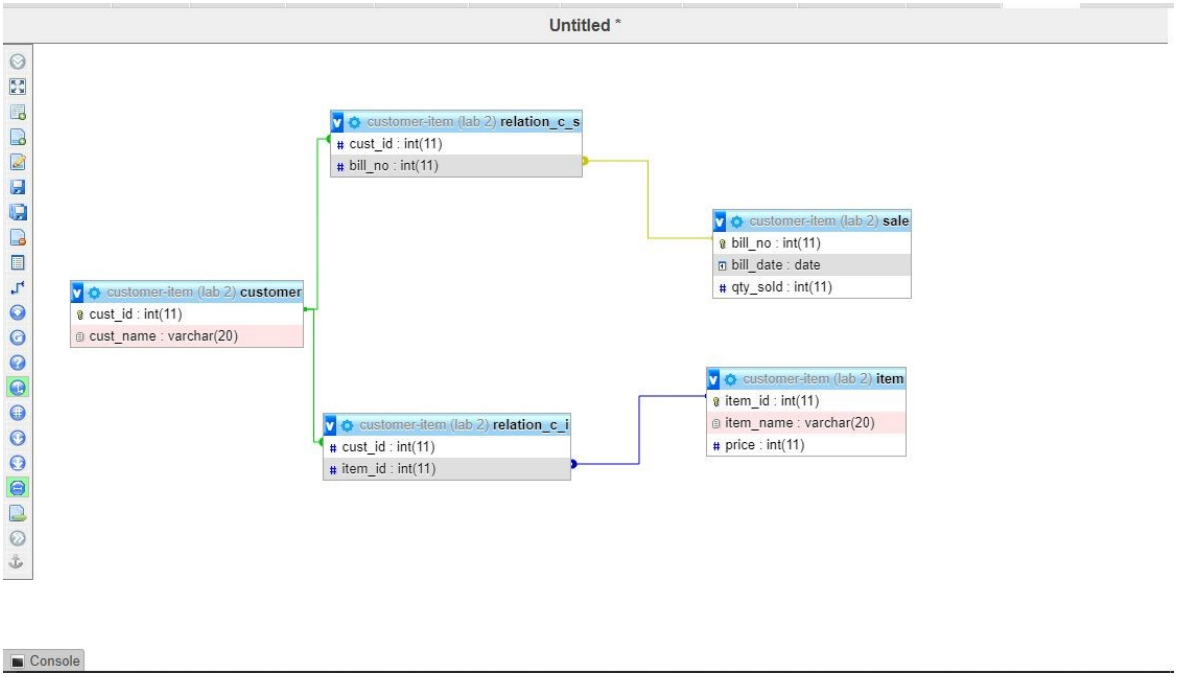

Fig 2.2: Database design for billing details with customer name, quantity sold and total billable amount

SUBMITTED QUERIES

Creation of Tables:

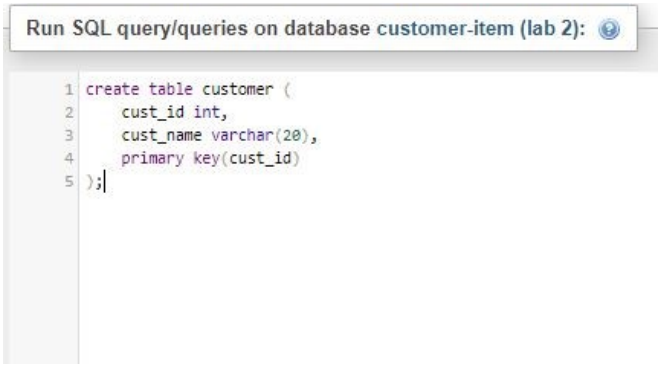

Fig 2.3: Customer Table Creation

Fig 2.4: Item Table Creation

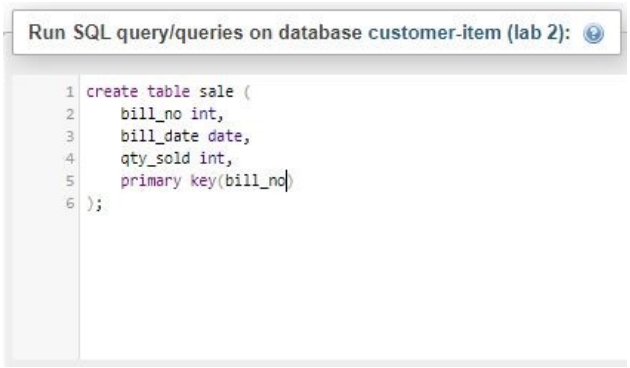

Fig 2.5: Sale Table Creation

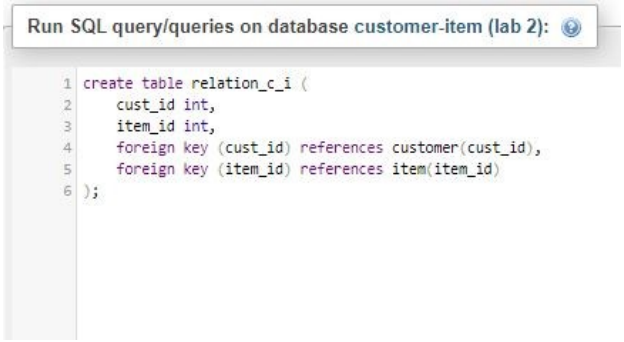

Fig 2.6: Relation Customer Item Table Creation

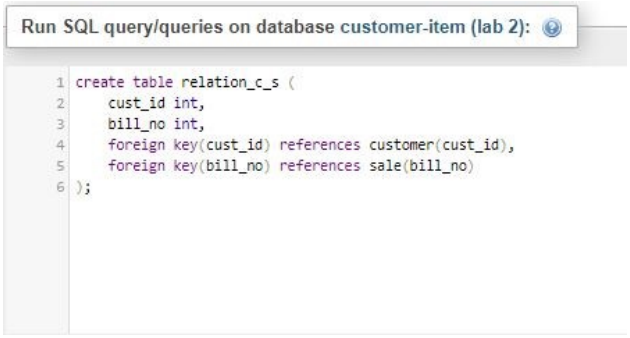

Fig 2.7: Relation Customer Sales Table Creation

Insertion:

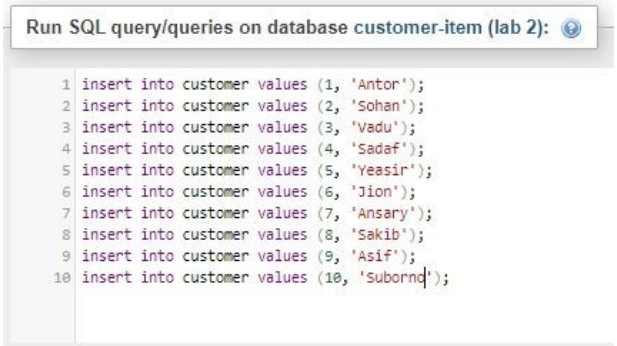

Fig 2.8: Customer Table Insertion

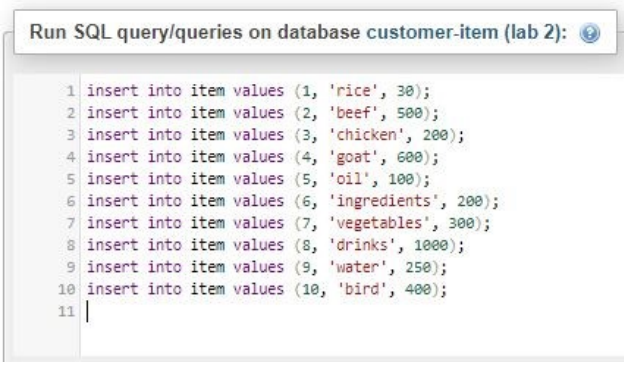

Fig 2.9: Item Table Insertion

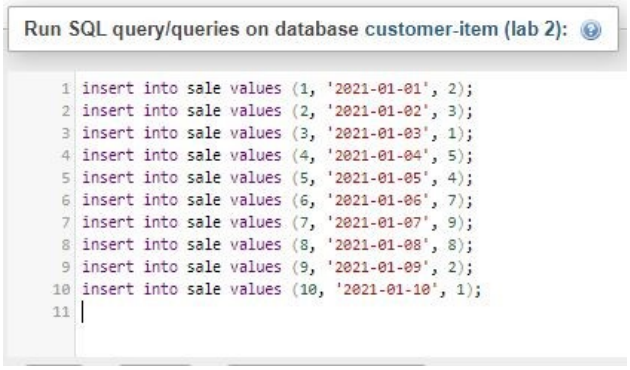

Fig 2.10: Sales Table Insertion

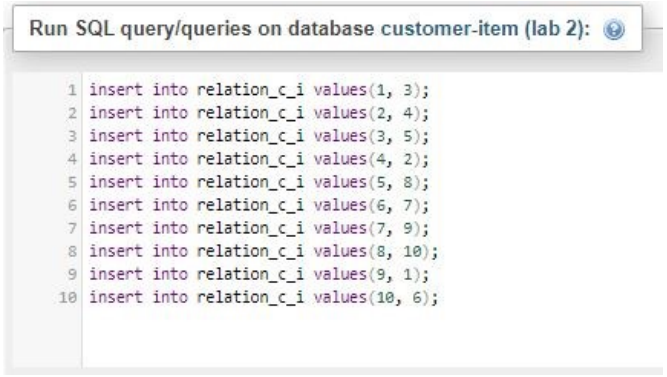

Fig 2.11: Relation Customer Item Table Insertion

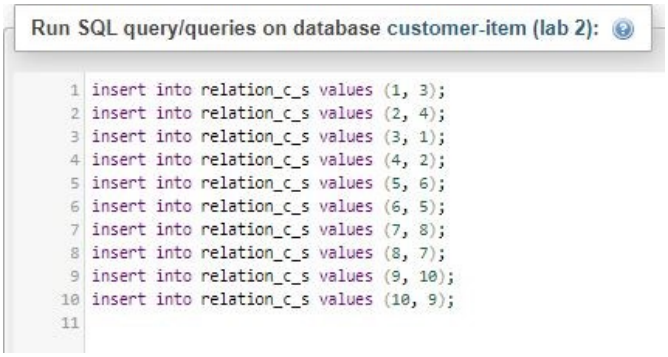

Fig 2.12: Relation Customer Sale Table Insertion

OUTPUTS

+ Options

	cust_id	cust_name
Edit Copy Delete	1	Antor
Edit Copy Delete	2	Sohan
Edit Copy Delete	3	Vadu
Edit Copy Delete	4	Sadaf
Edit Copy Delete	5	Yeasir
Edit Copy Delete	6	Jion
Edit Copy Delete	7	Ansary
Edit Copy Delete	8	Sakib
Edit Copy Delete	9	Asif
Edit Copy Delete	10	Suborno

Fig 2.13: Customer Table

+ Options

item_id	item_name	price
1	rice	30
2	beef	500
3	chicken	200
4	goat	600
5	oil	100
6	ingredients	200
7	vegetables	300
8	drinks	1000
9	water	250
10	bird	400

Fig 2.14: Item Table

+ Options

bill_no	bill_date	qty_sold
1	2021-01-01	2
2	2021-01-02	3
3	2021-01-03	1
4	2021-01-04	5
5	2021-01-05	4
6	2021-01-06	7
7	2021-01-07	9
8	2021-01-08	8
9	2021-01-09	2
10	2021-01-10	1

Fig 2.15: Sale Table

+ Options

cust_id	item_id
1	3
2	4
3	5
4	2
5	8
6	7
7	9
8	10
9	1
10	6

Fig 2.16: Relation Customer Item Table

+ Options

cust_id	bill_no
1	3
2	4
3	1
4	2
5	6
6	5
7	8
8	7
9	10
10	9

Fig 2.17: Relation Customer Sale Table

Output of Performed Queries

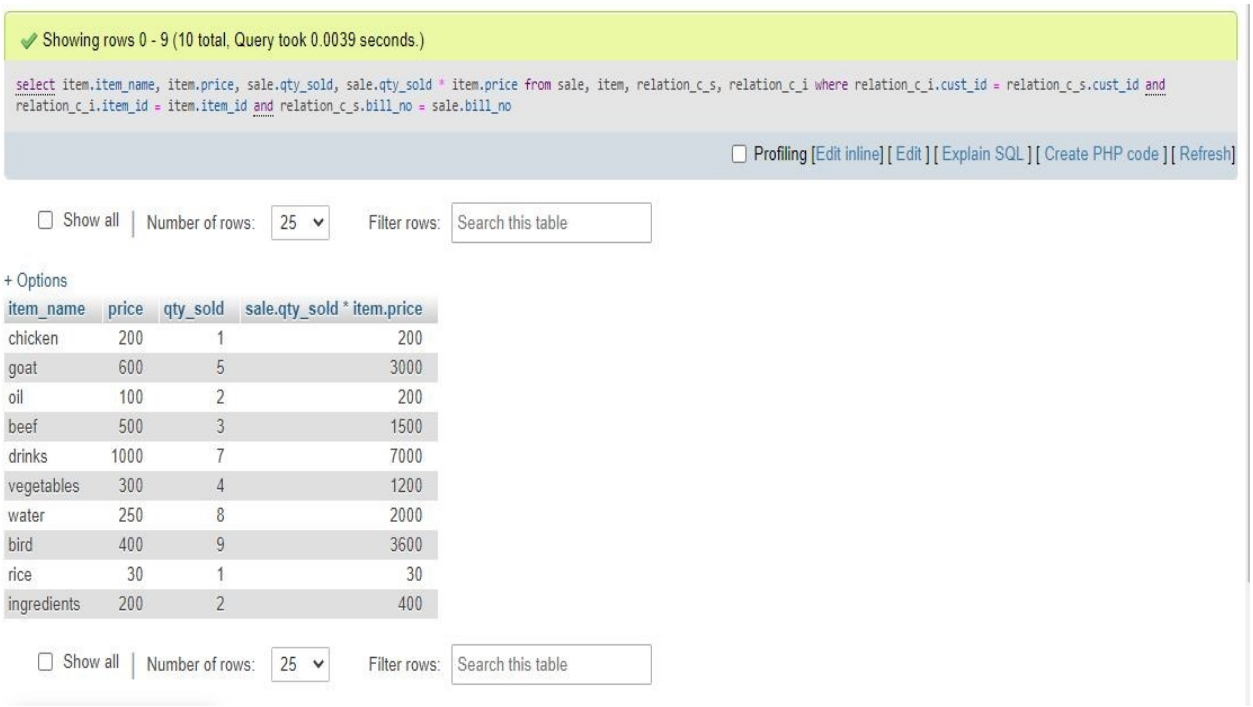

Fig 2.18: Billing Details with the Quantity Sold, Total Price of the Items

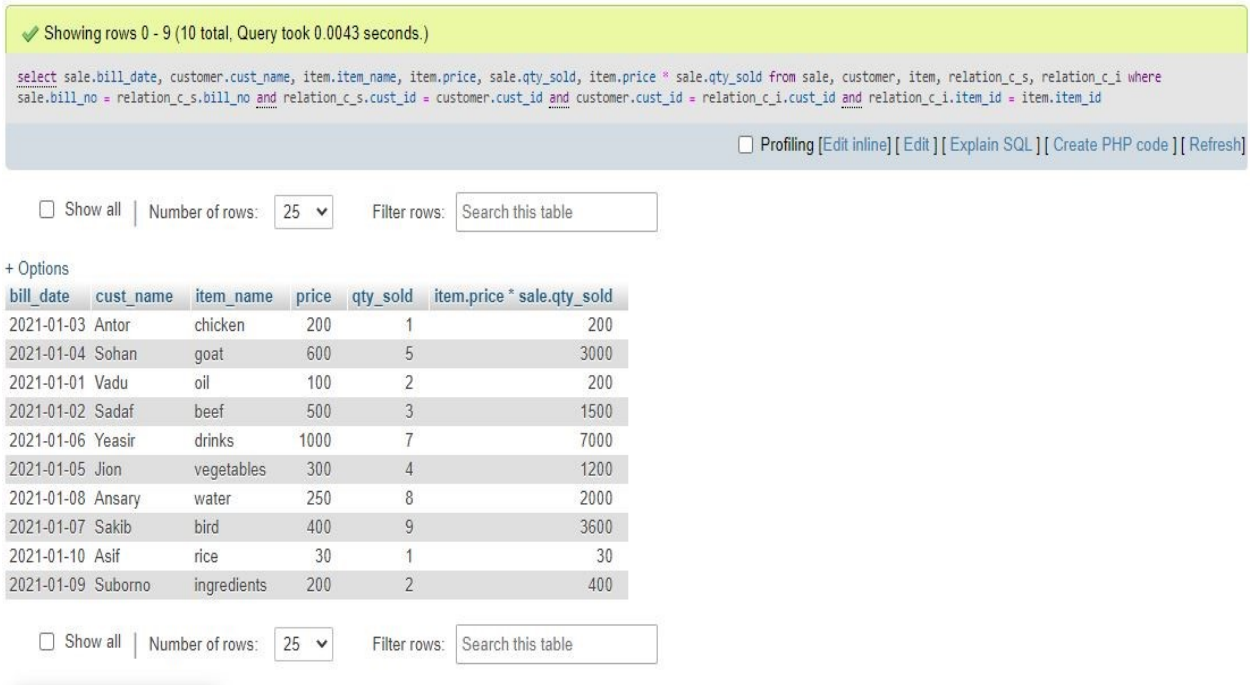

Fig 2.19: Billing Details with the Customer Name, Quantity Sold and Total Billable Amount

CONCLUSION

Databases are mainly based on various data tables which are connected with each other through another relationship set table. The queries performed on the database are mainly based on the relationship table. The relationship tables take primary keys of one table and connects to another primary key of another table. So, to find a specific query between two or more tables one just needs to identify the relation between them and perform the operation according to it. In this Database I've connected three data tables together with two relationship sets and connected their primary keys to find out the query I wanted.