

ASSESSMENT 1

MODULE NAME: Introduction to Web and Database concepts

MODULE CODE: ACCA 4023

LECTURER: Anum Paracha

TRINITY SAINT DAVID UNIVERSITY OF WALES (LONDON CAMPUS)

Mohammad Hasan Tohin (2514325)

STUDENT ID:2514325



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Introduction

MediLink Pharmacy is a developing community pharmacy chain that, at present, serves all its medicines, suppliers, prescriptions, and customer records manually. Such a conventional method usually causes the inaccuracy of data, duplication, and inefficiency in the daily operations, which influence the quality of services and decision-making. In order to overcome these difficulties, the proposal is to work with a relational database system in order to streamline the data management process, enhance the accuracy, and facilitate proper reporting.[1]. This database is intended to facilitate the work of pharmacies, improve stock management, and ensure greater sales and prescription tracking. The current report outlines the design and implementation of the database together with the analysis of the scenarios, development of the ERD, which involves the implementation of the system and the queries, validation and general assessment of the system.

Scenario Analysis

In the MediLink Pharmacy case, it is necessary to create a systematic database that can effectively manage core operational information, including medicines, suppliers, customers, prescriptions, and sales transactions. There are several key entities, depending on the requirements. These are Suppliers, storing the information about the suppliers company, name, contact numbers, and address; Medicines, where attributes of medicine name, category, price, and stock quantity is added; Customers, where personal information (name, contact, date of birth) is stored; Prescription, where the information about the doctor and the date of prescription is stored; Sales, where the information about a sale date and price were kept; and SaleDetails, where the specifics about medicines and quantities that were sold in a particular sale are stored.

These entities are linked to each other by logical relationships. As an example, a single supplier may supply several medicines, and this creates a one-to-many relationship between Suppliers and Medicines. In the same vein, a single customer may possess multiple prescriptions and buy and make multiple purchases between Customers and Prescriptions and Sales. The Sales entity is once more linked to SaleDetails to depict individual products in every transaction, whereas SaleDetails is linked to Medicines to understand the products sold. Such an orderly method will guarantee effective organisation of data, less redundancy, and proper retrieval of data, thus providing ample basis to the relational design of a database.[2].

Entity Relationship Diagram (ERD)

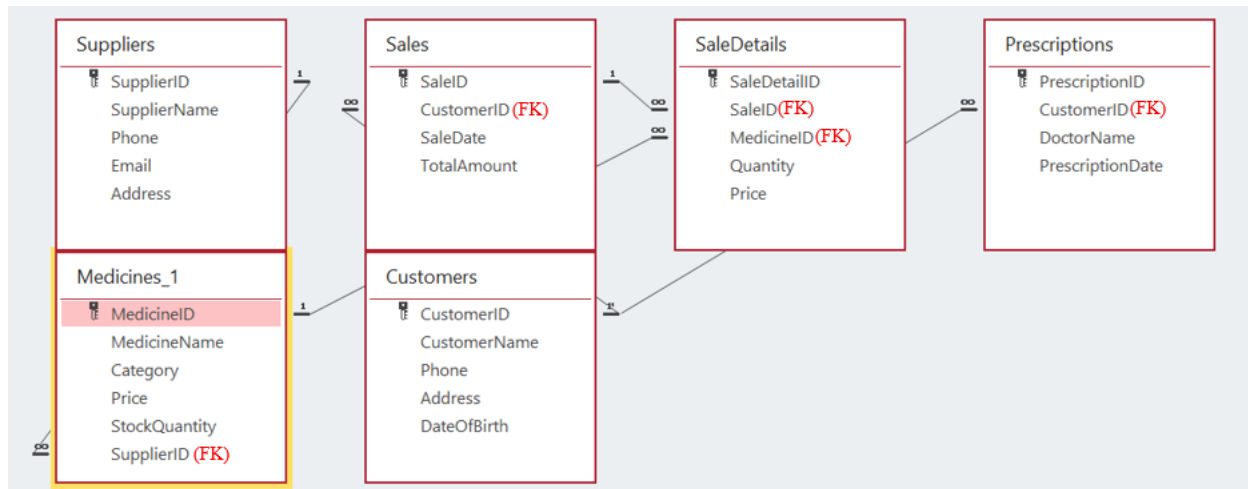


Figure 1: ERD of MediLink Pharmacy database

This Entity Relationship Diagram (ERD) shows the structure of the MediLink Pharmacy database, which is shown by the identification of key entities, their attributes, and the connections between them[3]. These are Suppliers, Medicines, Customers, Sales, SaleDetails and Prescriptions. Every entity has a primary key (PK) to distinctly identify records, which includes SupplierID of Suppliers, MedicineID of Medicines, CustomerID of Customers, SaleID of Sales, SaleDetailID of SaleDetails and PrescriptionID of Prescriptions. Relationships are created with foreign keys (FK), which include SupplierID in Medicines; CustomerID in Sales and Prescriptions and SaleID and MedicineID in SaleDetails.

The associations among objects are of a one-to-many (1) type. A given supplier can provide a large number of medicines, whereas each medicine is associated with one supplier. Equally, a single customer may have multiple sales and prescriptions, which sets up relationships between the Customer and Sales, and the Customer and Prescription. Sales entity is related to SaleDetails, a one-to-many relation where a single sale may contain many medicine items. The records in SaleDetails also have one medicine per record, which connects it to the entity of Medicines. Such relationships guarantee the integrity of the data and effective data organisation in the database system[4].

Data Structure Development and Implementation

Each Table Design (Design View):

The screenshot shows the 'Suppliers' table design in Design View. The table has five fields: SupplierID (AutoNumber, primary key), SupplierName (Short Text), Phone (Short Text), Email (Short Text), and Address (Short Text). Below the table grid is the 'Field Properties' section with tabs for 'General' and 'Lookup'. The 'General' tab is active, showing properties for the selected field: Field Size (Long Integer), New Values (Increment), Format, Caption, Indexed (Yes (No Duplicates)), and Text Align (General). A note on the right states: 'A field name can be up to 64 characters long, including spaces. Press F1 for help on field names.'

Field Name	Data Type	Description (Optional)
SupplierID	AutoNumber	
SupplierName	Short Text	
Phone	Short Text	
Email	Short Text	
Address	Short Text	

Field Properties

General Lookup

Field Size: Long Integer
New Values: Increment
Format:
Caption:
Indexed: Yes (No Duplicates)
Text Align: General

A field name can be up to 64 characters long, including spaces. Press F1 for help on field names.

Figure 2: Supplier Table Design

The screenshot shows the 'Medicines' table design in Design View. The table has six fields: MedicineID (AutoNumber, primary key), MedicineName (Short Text), Category (Short Text), Price (Currency), StockQuantity (Number), and SupplierID (Number). Below the table grid is the 'Field Properties' section with tabs for 'General' and 'Lookup'. The 'General' tab is active, showing properties for the selected field: Field Size (Long Integer), New Values (Increment), Format, Caption, Indexed (Yes (No Duplicates)), and Text Align (General). A note on the right states: 'A field name can be up to 64 characters long, including spaces. Press F1 for help on field names.'

Field Name	Data Type	Description (Optional)
MedicineID	AutoNumber	
MedicineName	Short Text	
Category	Short Text	
Price	Currency	
StockQuantity	Number	
SupplierID	Number	

Field Properties

General Lookup

Field Size: Long Integer
New Values: Increment
Format:
Caption:
Indexed: Yes (No Duplicates)
Text Align: General

A field name can be up to 64 characters long, including spaces. Press F1 for help on field names.

Figure 3: Medicines Table Design

Field Name	Data Type	Description (Optional)
CustomerID	AutoNumber	
CustomerName	Short Text	
Phone	Short Text	
Address	Short Text	
DateOfBirth	Date/Time	

Field Properties	
General	Lookup
Field Size	Long Integer
New Values	Increment
Format	
Caption	
Indexed	Yes (No Duplicates)
Text Align	General

A field name can be up to 64 characters long, including spaces. Press F1 for help on field names.

Figure 4: Customer Table Design

Field Name	Data Type	Description (Optional)
PrescriptionID	AutoNumber	
CustomerID	Number	
DoctorName	Short Text	
PrescriptionDate	Date/Time	

Field Properties	
General	Lookup
Field Size	Long Integer
New Values	Increment
Format	
Caption	
Indexed	Yes (No Duplicates)
Text Align	General

A field name can be up to 64 characters long, including spaces. Press F1 for help on field names.

Figure 5: Prescriptions Table Design

Field Name	Data Type	Description (Optional)
SaleID	AutoNumber	
CustomerID	Number	
SaleDate	Date/Time	
TotalAmount	Currency	

Field Properties	
General	Lookup
Field Size	Long Integer
New Values	Increment
Format	
Caption	
Indexed	Yes (No Duplicates)
Text Align	General

A field name can be up to 64 characters long, including spaces. Press F1 for help on field names.

Figure 6: Sales Table Design

Field Name	Data Type	Description (Optional)
SaleDetailID	AutoNumber	
SaleID	Number	
MedicineID	Number	
Quantity	Number	
Price	Currency	

Field Properties	
General	Lookup
Field Size	Long Integer
New Values	Increment
Format	
Caption	
Indexed	Yes (No Duplicates)
Text Align	General

A field name can be up to 64 characters long, including spaces. Press F1 for help on field names.

Figure 7: SaleDetails Table Design

The database is organised into six major tables: Suppliers, Medicines, Customers, Prescriptions, Sales, and SaleDetails. Each table is assigned specific information to be stored efficiently. Every table will have a primary key (PK) to identify records uniquely, which will be SupplierID, MedicineID, CustomerID, PrescriptionID, SaleID and SaleDetailID. Tables are related by the use of foreign keys (FK), and some of the relationships used are SupplierID in Medicines, CustomerID in Sales and Prescriptions, and both SaleID and MedicineID in SaleDetails.

Tables are separated to make sure that the data is logically arranged and not redundant[5]. An example is the storage of supplier information in the Suppliers table, as opposed to repeating it, and having it as a foreign key in Medicines linked to the Suppliers.[6]. In the same manner, SaleDetails has been separated from Sales to reflect various items in a transaction. The designed solution can increase data integrity, ease the process of updating, and increase the efficiency of the database system overall.

Sample Data Population:

Suppliers					
SupplierID	SupplierName	Phone	Email	Address	
1	Alliance Healthcare UK	+44 121 234 5678	info@alliancehealthcare.co.uk	Avonmouth Way, Bristol, UK	
2	AAH Pharmaceuticals Ltd	+44 161 445 6789	sales@aah.co.uk	Sapphire Court, Walsgrave Triangle, Coventry, UK	
3	Phoenix Healthcare Distribution	+44 191 567 2345	support@phoenixhealthcare.co.uk	Rivington Road, Whitehouse Industrial Estate, Runcorn, UK	
4	Lexon UK	+44 113 298 9000	enquiries@lexonuk.co.uk	Unit 6, Interchange Park, Leeds, UK	
5	Sigma Pharmaceuticals PLC	+44 20 8345 9876	info@sigma-pharma.co.uk	Unit 4, Humber Road, London, UK	

Figure 8: Sample Data in the Suppliers Table

Medicines						
MedicineID	MedicineName	Category	Price	StockQuantity	SupplierID	
1	Paracetamol 500mg Tablets	Pain Relief	£1.50	150	1	
2	Ibuprofen 200mg Tablets	Anti-Inflammat	£2.20	120	2	
3	Amoxicillin 250mg Capsules	Antibiotic	£4.80	75	3	
4	Cetirizine 10mg Tablets	Allergy	£2.90	90	4	
5	Omeprazole 20mg Capsules	Acid Reflux	£5.50	60	5	

Figure 9: Sample Data in the Medicines Table

Customers					
CustomerID	CustomerName	Phone	Address		DateOfBirth
1	Oliver Smith	+44 7700 900123	12 King Street, Manchester, UK		3/12/1990
2	Amelia Johnson	+44 7700 900234	45 Victoria Road, London, UK		7/21/1988
3	George Williams	+44 7700 900345	8 Park Avenue, Birmingham, UK		11/9/1975
4	Emily Brown	+44 7700 900456	27 High Street, Leeds, UK		5/18/1995
5	Jack Taylor	+44 7700 900567	63 Castle Road, Nottingham, UK		1/30/1982

Figure 10: Sample Data in the Customers Table

PrescriptionID	CustomerID	DoctorName	PrescriptionDate
1	1	Dr James Walker	3/12/2026
2	2	Dr Sarah Patel	3/14/2026
3	3	Dr David Thompson	3/16/2026
4	4	Dr Rebecca Clarke	3/17/2026
5	5	Dr Michael Harris	3/19/2026

Figure 11: Sample Data in the Prescriptions Table

SaleID	CustomerID	SaleDate	TotalAmount
1	1	3/12/2026	£3.00
2	2	3/14/2026	£5.50
3	3	3/16/2026	£4.80
4	4	3/17/2026	£2.90
5	5	3/19/2026	£4.40

Figure 12: Sample Data in the Sales Table

SaleDetailID	SaleID	MedicineID	Quantity	Price
1	1	1	2	£1.50
2	2	5	1	£5.50
3	3	3	1	£4.80
4	4	4	1	£2.90
5	5	2	2	£2.20

Figure 13: Sample Data in the SaleDetails Table

The sample information of the database is based on realistic operation conditions in a community pharmacy in the UK. The names of the suppliers, e.g., Alliance Healthcare UK and AAH Pharmaceuticals Ltd, are reputable pharmaceutical distributors which are active in the United Kingdom. The medicines enumerated (Paracetamol, Ibuprofen, and Amoxicillin) are commonly prescribed and generally found in the NHS as well as the local pharmacies. The UK real addresses of customers, names and phone number format of the UK, are further details that make it authentic. Also, prescription records incorporate common doctor names in the UK and realistic dates, whereas the sales transactions would demonstrate realistic prices in GBP (£). In general, the data can be considered as a true reflection of the pharmacy practice in the healthcare setting in the UK.

Normalisation Compliance

MediLink Pharmacy database has been normalised to the Third Normal Form (3NF) to allow the effective organisation of data and reduce redundancy[7]. To start with, the design is in the First Normal Form (1NF) as all the attributes have atomic values and no repeating groups. A single value is stored in each field, i.e. a single medicine name or a single supplier per record. Secondly, the database is in Second Normal Form (2NF) because it eliminates partial dependencies, and all the non-key attributes rely wholly on the primary key of every table. For example, medicine information is solely reliant on MedicineID. Lastly, the third normal form (3NF), which is the removal of transitive dependencies, where the non-key attributes depend on the primary key. As an example, the Suppliers table is different and takes the supplier information under SupplierID. This hierarchy helps to ensure better integrity of data, less duplication and better optimisation of the database[7].

Query Development

Query 1: Customer Sales History

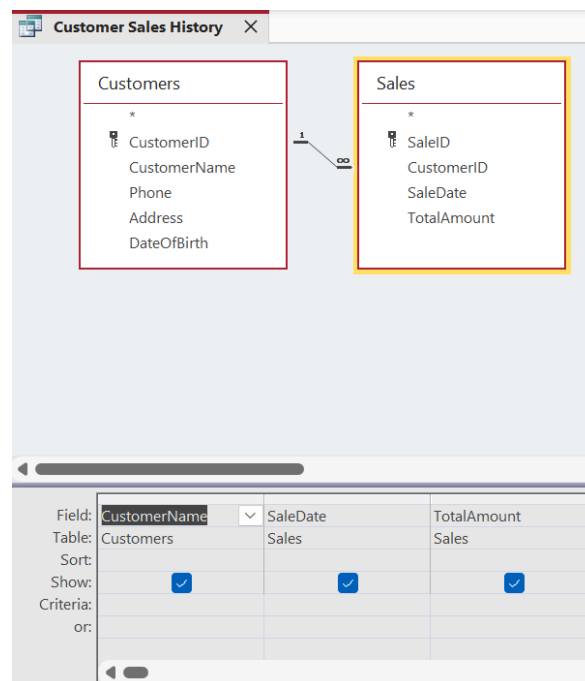


Figure 14: Customer Sales History Query Design

Customer Sales History		
CustomerName	SaleDate	TotalAmount
Oliver Smith	3/12/2026	£3.00
Amelia Johnson	3/14/2026	£5.50
George Williams	3/16/2026	£4.80
Emily Brown	3/17/2026	£2.90
Jack Taylor	3/19/2026	£4.40

Figure 15: Customer Sales History Query Result

The Customer Sales History query is aimed at showing the specifics of each customer about the transactions of the customer, his/her name, the date of sale, and the amount bought. This query brings together data from both tables of Customer and Sales as given in Figure 15, but through a relationship of CustomerID. It assists the pharmacy in monitoring the buying behaviour of customers and discovering recurring customer or sales patterns in the long term[8]. The query output gives an evidence record of individual transactions, and thus it is much easier to monitor the revenue and manage the customer relationship of the pharmacy system better.

Query 2: Low Stock Medicines

Field:	MedicineName	Category	StockQuantity	SupplierID
Table:	Medicines	Medicines	Medicines	Medicines
Show:	☒	☒	☒	☒
Criteria:			<80	

Figure 16: Low Stock Medicines Query Design

MedicineName	Category	StockQuantity	SupplierID
Amoxicillin 250mg Capsules	Antibiotic	75	3
Omeprazole 20mg Capsules	Acid Reflux	60	5

Figure 17: Low Stock Medicines Query Result

The Low Stock Medicines query is set up to find medicines that have stock levels less than a certain specified level, as illustrated in Figure 16. This query will select the data of the Medicines table with the help of a condition (Stockquantity < 80) to point out the items that need to be restocked. It assists the pharmacy in having good inventory management by preventing situations where the necessary medicines are out of stock. The outcome of this operation is a list containing the names of the medicines, the type, the number of stock, and the supplier IDs so that the staff can easily locate the low-stock products and make the necessary, timely decision that would ensure a new supply of the products.

Query 3: Medicines Purchased in Each Sale

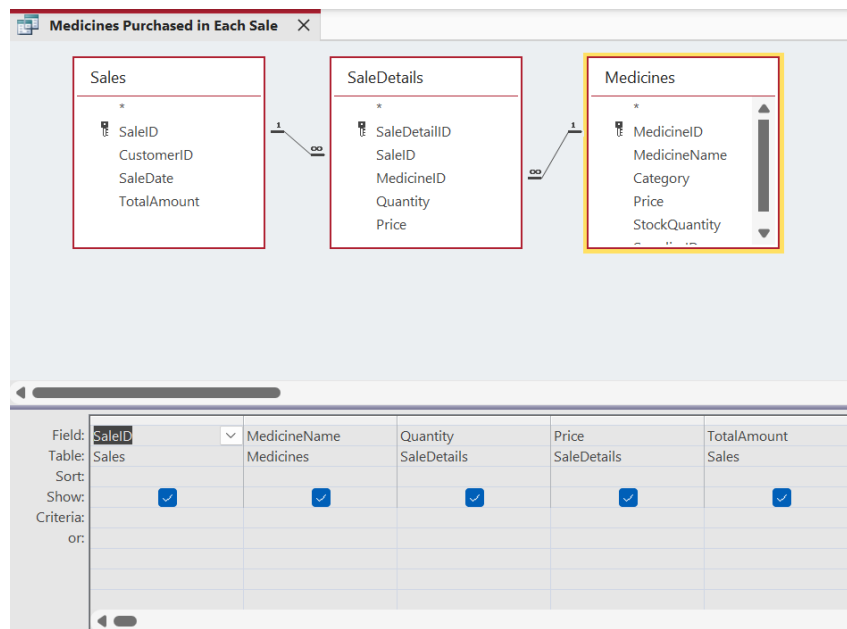


Figure 18: Medicines Purchased in Each Sale Query Design

Medicines Purchased in Each Sale					
SaleID	MedicineName	Quantity	Price	TotalAmount	
1	Paracetamol 500mg Tablets	2	£1.50	£3.00	
2	Omeprazole 20mg Capsules	1	£5.50	£5.50	
3	Amoxicillin 250mg Capsules	1	£4.80	£4.80	
4	Cetirizine 10mg Tablets	1	£2.90	£2.90	
5	Ibuprofen 200mg Tablets	2	£2.20	£4.40	

Figure 19: Medicines Purchased in Each Sale Query Result

The Medicines Purchased in Each Sale query is meant to provide information about the medicines purchased in each sale in a more detailed way, as shown in Figure 18. This query is a combination query between the Sales, Sale Details, and Medicines tables using their relationship. It assists the pharmacy in examining what medicines are sold on a single sale and what the purchasing trends. The output will display sale ID, medicine name, quantity, price and total amount in a clear breakdown of each transaction, which would be useful in ensuring efficient sales tracking and inventory management.

Query 4: Medicines with Supplier Information

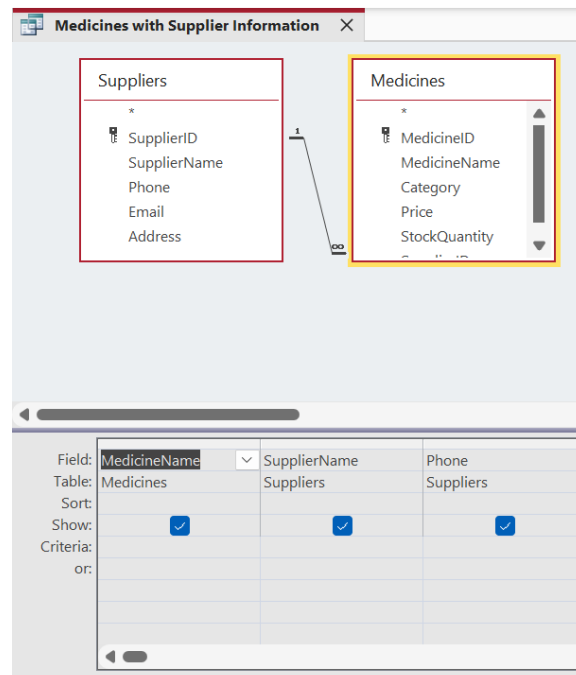


Figure 20: Medicines with Supplier Information Query Design

Medicines with Supplier Information		
MedicineName	SupplierName	Phone
Paracetamol 500mg Tablets	Alliance Healthcare UK	+44 121 234 5678
Ibuprofen 200mg Tablets	AAH Pharmaceuticals Ltd	+44 161 445 6789
Amoxicillin 250mg Capsules	Phoenix Healthcare Distribution	+44 191 567 2345
Cetirizine 10mg Tablets	Lexon UK	+44 113 298 9000
Omeprazole 20mg Capsules	Sigma Pharmaceuticals PLC	+44 20 8345 9876

Figure 21: Medicines with Supplier Information Query Result

Medicines with Supplier Information query is developed to show all the medicines and their respective supplier information, as represented in Figure 20. This query will be linked to the Medicines and Suppliers tables through the relationship of SupplierID. It aids the pharmacy in regulating supplier relationships, as they clearly know the supplier of each medicine and the way to reach out to them. The outcomes are the name of medicine, the name of suppliers, and phone numbers, which allow providing effective communication with suppliers and make it possible to restock and manage supply chains in the pharmacy in a timely manner[8].

Query 5: Prescriptions by Customer

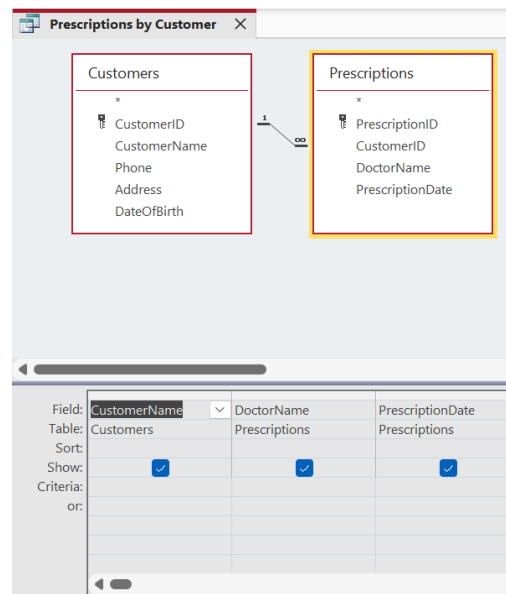


Figure 22: Prescriptions by Customer Query Design

Prescriptions by Customer		
CustomerName	DoctorName	PrescriptionDate
Oliver Smith	Dr James Walker	3/12/2026
Amelia Johnson	Dr Sarah Patel	3/14/2026
George Williams	Dr David Thompson	3/16/2026
Emily Brown	Dr Rebecca Clarke	3/17/2026
Jack Taylor	Dr Michael Harris	3/19/2026

Figure 23: Prescriptions by Customer Query Result

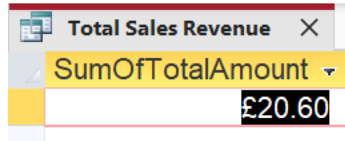
The Prescriptions by Customer query will be used to show the customer prescriptions, such as customer names, doctor names, and date of prescription, as illustrated in Figure 22. This query joins the tables of Customers and Prescriptions with the help of CustomerID, in order to join the necessary information. It assists the pharmacy in keeping precise records of their patients and keeping track of their prescription records per client. The outcomes give a clear depiction of the doctor who prescribed the medication and the time of prescription, which makes healthcare management effective and keeps the prescription properly tracked in the system.

Query 6: Total Sales Revenue

The screenshot shows the Microsoft Access Query Design view for a query named 'Total Sales Revenue'. The design grid is as follows:

Field	Table	Total	Sort	Show	Criteria	or
TotalAmount	Sales	Sum		☒		

Figure 24: Total Sales Revenue Query Design



Total Sales Revenue	
SumOfTotalAmount	£20.60

Figure 25: Total Sales Revenue Query Report

The Total Sales Revenue query is meant to estimate the amount of money that the pharmacy will have generated in terms of revenue, as shown in Figure 25. This query is an aggregate query (SUM) of the Sales table on the TotalAmount field to obtain one total value. It assists the pharmacy with tracking financial performance, plus evaluating the overall profitability of the business. The outcome offers an easy overview of the total sales income, which the management can use to make good decisions on matters of pricing, on stock levels and future business planning.

Forms and Reports

Forms:

The screenshot shows a web application window titled "Customer Form". The form contains several input fields for customer information. A vertical sidebar on the left contains a right-pointing arrow. The form fields are as follows:

Field Name	Value
CustomerID	1
CustomerName	Oliver Smith
Phone	+44 7700 900123
Address	12 King Street, Manchester, UK
DateOfBirth	3/12/1990

Figure 26: Customer Form

The screenshot shows a web application window titled "Medicine Form". The form contains several input fields for medicine information. A vertical sidebar on the left contains a right-pointing arrow. The form fields are as follows:

Field Name	Value
MedicineID	1
MedicineName	Paracetamol 500mg Tablets
Category	Pain Relief
Price	£1.50
StockQuantity	150
SupplierID	1

Figure 27: Medicine Form

SaleID	1
CustomerID	1
SaleDate	3/12/2026
TotalAmount	£3.00

Figure 28: Sales Form

Importance and Usage of Forms:

Forms can be helpful in a database system because they provide a user-friendly interface for entering, viewing, and handling data easily. The user is able to feed data directly into structured forms rather than directly into complex tables, thus minimising the chances of errors. Forms make it easier since they assist in navigation, making the fields systematised and showing users how to fill in the data[9]. It is also very useful in a pharmacy setting where employees are able to record customer information, medicines and sales transactions fast and 100% accurate at a time, thus enhancing the overall efficiency of the operations.

Reports:

Medicine Stock Report			
MedicineName	Category	Price :Quantity	
Amoxicillin 250mg Capsules	Antibiotic	£4.80	75
Cetirizine 10mg Tablets	Allergy	£2.90	90
Ibuprofen 200mg Tablets	Anti-Inflammatory	£2.20	120
Omeprazole 20mg Capsules	Acid Reflux	£5.50	60
Paracetamol 500mg Tablets	Pain Relief	£1.50	150

Figure 29: Medicine Stock Report

Prescription Report		
CustomerName	PrescriptionDateDoctorName	
Oliver Smith	3/12/2026	Dr James Walker
Amelia Johnson	3/14/2026	Dr Sarah Patel
George Williams	3/16/2026	Dr David Thompson
Emily Brown	3/17/2026	Dr Rebecca Clarke
Jack Taylor	3/19/2026	Dr Michael Harris

Figure 30: Prescription Report

Sales Report				
CustomerID		SaleDate	SaleID	TotalAmount
	1	3/12/2026	1	£3.00
	2	3/14/2026	2	£5.50
	3	3/16/2026	3	£4.80
	4	3/17/2026	4	£2.90
	5	3/19/2026	5	£4.40

Figure 31: Sales Report

Reports in Decision Making:

Reports are essential in assisting in decision-making because they provide structured and significant data summaries[9]. The Medicine Stock Report assists in determining the existing stock life levels, which enables the timely decision on stock restocking. The Sales Report will give details on the sales performance and trends in revenue and will be used in the financial planning. Moreover, the Prescription Report will enable tracking prescriptions of the patients and the activity of the doctor. A combination of these reports helps pharmacy management to understand operations effectively, better management of inventory, better service delivery and a good strategic decision based on accurate and structured information.

Validation and Testing

Example 1: Stock Quantity Validation and Testing

Field Name	Data Type
MedicineID	AutoNumber
MedicineName	Short Text
Category	Short Text
Price	Currency
StockQuantity	Number
SupplierID	Number

General	
Field Size	Long Integer
Format	
Decimal Places	Auto
Input Mask	
Caption	
Default Value	0
Validation Rule	>=0
Validation Text	Stock quantity cannot be negative
Required	No
Indexed	No
Text Align	General

Insert,

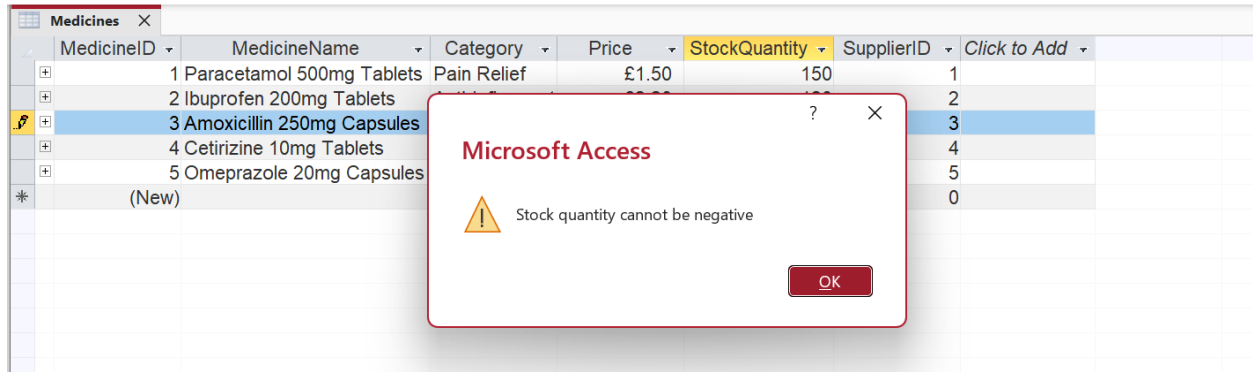
Validation rule: >=0

Validation Text: Stock quantity cannot be negative

Testing:

MedicineID	MedicineName	Category	Price	StockQuantity	SupplierID
1	Paracetamol 500mg Tablets	Pain Relief	£1.50	150	1
2	Ibuprofen 200mg Tablets	Anti-Inflammat	£2.20	120	2
3	Amoxicillin 250mg Capsules	Antibiotic	£4.80	-5	3
4	Cetirizine 10mg Tablets	Allergy	£2.90	90	4
5	Omeprazole 20mg Capsules	Acid Reflux	£5.50	60	5

Insert any negative value (-5) in any space of the field of stock Quantity.



The system will show an error message that “Stock quantity cannot be negative”.

Example 2: Test Table Data Entry

The screenshot shows the 'Medicine Form' in Microsoft Access. The form has the following fields and values:

Field	Value
MedicineID	5
MedicineName	Omeprazole 20mg Capsules
Category	Acid Reflux
Price	£5.50
StockQuantity	60
SupplierID	5

At the bottom of the form, there is a 'New (blank) record' button. Below the form, there is a status bar that says 'Record: 1 of 5' and a 'No Filter' button.

Open the Medicine Form and click on New (blank) record

Medicine Form

MedicineID

6

MedicineName

Hydrocortisone 1% cream

Category

Skin/Infection

Price

£3.15

StockQuantity

30

SupplierID

3

Then insert the information of the new medicine and click save.

MedicineID	MedicineName	Category	Price	StockQuantity	SupplierID
1	Paracetamol 500mg Tablets	Pain Relief	£1.50	150	1
2	Ibuprofen 200mg Tablets	Anti-Inflammat	£2.20	120	2
3	Amoxicillin 250mg Capsules	Antibiotic	£4.80	75	3
4	Cetirizine 10mg Tablets	Allergy	£2.90	90	4
5	Omeprazole 20mg Capsules	Acid Reflux	£5.50	60	5
6	Hydrocortisone 1% cream	Skin/Infection	£3.15	30	3

And it saves correctly in the medicines table

Example 3: Test Relationship

Medicine Form

MedicineID

6

MedicineName

Hydrocortisone 1% cream

Category

Skin/Infection

Price

£3.15

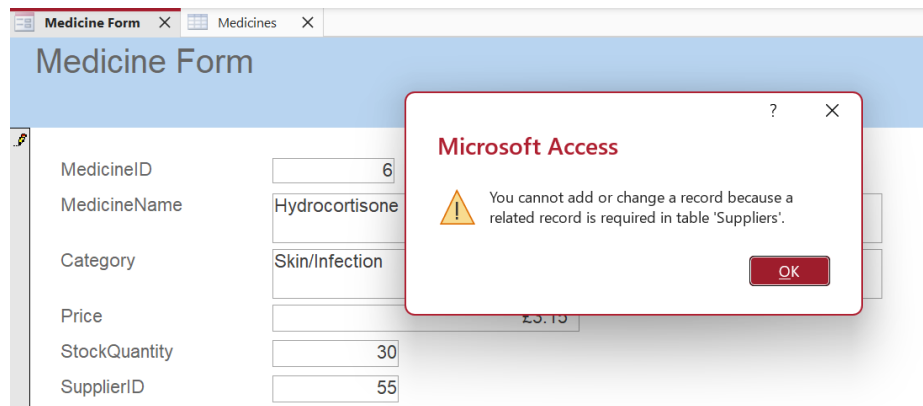
StockQuantity

30

SupplierID

55

Entering a SupplierID (55) that does not exist.



MS Access will reject it and show an error because of referential integrity.

Explanation about the Validation and Testing Outcome:

The validation and testing process ensures that the database system is accurate and the data is intact[10]. The validation rules, including limiting the amount of stock to non-negative, would also guard against wrong data entry, as the system will reject invalid entries. Also, the testing was performed by adding new records via forms and confirming that the information is properly stored in tables. Referential integrity was also checked by trying to enter an invalid SupplierID, and the system refused to accept it. These tests ensure that the database is a stable and efficient database that works to the satisfaction of the user's requirements[10].

Reflection and Evaluation

The MediLink Pharmacy database system development gave me a good idea on how to design a database, the implementation of the database and the management of database data. The system has a structured design as one of its key strengths that facilitates the integrity of data and effective organisation by using relationships and normalisation. The queries, forms, and reports make the use more usable and facilitate making decisions. Nevertheless, certain difficulties were faced, especially in building relationships and proper data types and validation requirements. Other features that can be included in future enhancements might include automated stock notifications, barcode reading, and connection to online prescription systems[11]. In general, the system is able to achieve the desired requirements and portray a feasible use of the concept of relational database in a practical pharmacy setting.

Conclusion

To sum up, it is evident that the MediLink Pharmacy database system overcomes the shortcomings of the current manual system, namely offering a structured, precise and effective way of handling data. Well-structured tables, relationships, and normalisation in the implementation of the data make sure that there is integrity of data and that redundancy is minimised. Also, the queries, forms, and reports have increased usability and aid in making good decisions. The system facilitates better stock management, sales and prescription management. On the whole, this database solution addresses the operational requirements of the pharmacy and proves the significance of the relational database design in enhancing business performance and service delivery.

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