

Medical Inventory Management Query Doc

Data Description:

The dataset consists of 14218 entries with the following 14 columns:

VARIABLE NAME – DESCRIPTION

1. **Typeofsales:** *Type of sale of the drug. Either the drug is sold or returned.*
2. **Patient_ID:** *ID of a patient*
3. **Specialisation:** *Name of Specialisation (e. g. Cardiology)*
4. **Dept:** *Pharmacy, the formulation is related with.*
5. **Dateofbill:** *Date of purchase of medicine*
6. **Quantity:** *Quantity of the drug*
7. **Return_Quantity:** *Quantity of drug returned by patient to the pharmacy*
8. **Final_Cost:** *Final Cost of the drug (Quantity included)*
9. **Final_Sales:** *Final sales of drug*
10. **RtnMRP:** ** MRP of returned drug (Quantity included) **
11. **Formulation:** *Type of formulation*
12. **Drug Name:** *Generic name of the drug*
13. **SubCat:** *Subcategory (Type) to the category of drugs*
14. **SubCat1:** *Subcategory (condition) to the category of drugs*

Overview:

Key Performance Indicators (KPI's)

Total Profits:

```
SELECT sum(Final_Sales - Final_Cost) AS `Total Profits`  
FROM medical_inventory;
```

	Total Profits
▶	1552809.5360000108

Total Mark Up (ROI):

```
SELECT ROUND(SUM(FINAL_SALES - FINAL_COST) / SUM(FINAL_COST), 4) AS 'MARK UP & ROI'  
FROM MEDICAL_INVENTORY;
```

	MARK UP & ROI
▶	0.8749

- **Average Selling Price (ASP):**

```
SELECT ROUND(SUM(FINAL_SALES) / SUM(QUANTITY),4) AS `AVERAGE SELLING PRICE` FROM MEDICAL_INVENTORY;
```

	AVERAGE SELLING PRICE
▶	104.8677

- **Average Cost Price (ACP):**

```
SELECT ROUND(SUM(FINAL_COST) / SUM(QUANTITY),4) AS `AVERAGE COST PRICE` FROM MEDICAL_INVENTORY;
```

	AVERAGE COST PRICE
▶	55.931

- **Profit Per Unit:**

```
SELECT ROUND(SUM(FINAL_SALES - FINAL_COST) / SUM(QUANTITY),4) AS  
`Profit per Unit` FROM MEDICAL_INVENTORY;
```

	Profit per Unit
▶	48.9367

Sales Performance

- **Total Sales:**

```
SELECT ROUND(SUM(Final_Sales), 4) AS `Total Sales`  
FROM medical_inventory;
```

#Before

	Total Sales
▶	3327556.556

#After

	Total Sales
▶	3317239

- **Sales By Type:**

```
SELECT Typeofsales, count(*) AS `Sales By Type`  
FROM medical_inventory GROUP BY Typeofsales;
```

#Before

	Typeofsales	Sales By Type
▶	Sale	12537
	Return	1681

#After

	Typeofsales	Sales By Type
▶	Sale	12511
	Return	1673

- **Sales By Department:**

```
SELECT Dept, ROUND(SUM(FINAL_SALES),4) AS `Sales By Department`  
FROM medical_inventory GROUP BY Dept;
```

#Before

	Dept	Sales By Department
▶	Department1	2976210.514
	Department3	71983.144
	Department2	279362.898

#After

	Dept	Sales By Department
▶	Department1	2966398
	Department2	279337
	Department3	71504

- Sales On Specialization:**

```
SELECT Specialisation, ROUND(SUM(Final_Sales),4) AS `Sales By Revenue`
FROM medical_inventory
GROUP BY Specialisation
ORDER BY SUM(Final_Sales) DESC limit 10;
```

#Before

	Specialisation	Sales By Revenue
►	Specialisation4	1201828.218
	Specialisation7	680908.27
	Specialisation8	183583.588
	Specialisation3	126353.096
	Specialisation20	115867.38
	Specialisation2	95002.034
	Specialisation16	86557.162
	Specialisation26	85758.966
	Specialisation5	84372.16
	Specialisation1	75503.88

#After

	Specialisation	Sales By Revenue
►	Specialisation4	1198652
	Specialisation7	676134
	Specialisation8	181931
	Specialisation3	126379
	Specialisation20	115879
	Specialisation2	95041
	Specialisation16	86584
	Specialisation26	85780
	Specialisation5	84328
	Specialisation1	75539

- Sales Over Time:**

```
SELECT MONTHNAME(DATEOFBILL) AS `MONTH`, ROUND(SUM(FINAL_SALES), 4) AS `SALES OVER TIME`
FROM MEDICAL_INVENTORY
WHERE YEAR(DATEOFBILL) = 2022
GROUP BY MONTH(DATEOFBILL)
ORDER BY ROUND(SUM(FINAL_SALES), 4) DESC;
```

Before

	MONTH ▼	SALES OVER TIME ▼
►	December	386691.714
	May	292356.516
	July	292133.588
	April	290548.236
	September	287392.406
	August	286773.812
	November	285968.434
	October	269137.66
	February	243940.936
	June	241951.284
	January	225441.29
	March	225220.68

After

	MONTH	SALES OVER TIME
►	December	384942
	July	292007
	May	289534
	April	289142
	August	286754
	November	286017
	September	285518
	October	268753
	February	243983
	June	241894
	January	225486
	March	223209

- **Sales Frequency**

```
SELECT MONTHNAME(Dateofbill) AS `MONTH`,
       COUNT(*) AS `Sales Frequency`
FROM MEDICAL_INVENTORY
WHERE YEAR(Dateofbill) = 2022
GROUP BY MONTH(Dateofbill)
ORDER BY MONTH(Dateofbill);
```

Before

	MONTH	Sales Frequency
▶	January	1054
	February	960
	March	1157
	April	1233
	May	1200
	June	1135
	July	1248
	August	1275
	September	1252
	October	1167
	November	1158
	December	1379

#After

	MONTH	Sales Frequency
▶	January	1053
	February	959
	March	1155
	April	1229
	May	1195
	June	1134
	July	1245
	August	1272
	September	1248
	October	1163
	November	1157
	December	1374

Returns

- **Total Returns:**

```
SELECT SUM(ReturnQuantity) AS `TOTAL RETURNS` FROM medical_inventory;
```

	TOTAL RETURNS
▶	4151

- **Return Rate:**

-- how much of your inventory is being returned relative to the total sales.

```
SELECT ROUND(SUM(ReturnQuantity) /SUM(Final_Sales), 4) * 100 AS `RETURN RATE`  
FROM medical_inventory;
```

	RETURN RATE
▶	0.12

- **Return Cost:**

```
SELECT ROUND(SUM(ReturnQuantity * Final_Cost),4) AS `RETURN COST`  
FROM medical_inventory;
```

#Before

	RETURN COST
▶	473886.428

#After

	RETURN COST
▶	473120

Cost Analysis

- Cost Of Goods Sold (COGS):**

```
SELECT ROUND(SUM(FINAL_COST), 4) AS `COGS` FROM MEDICAL_INVENTORY;
```

Before

	COGS
▶	1774747.02

#After

	COGS
▶	1768637

- Profit Margin:**

```
SELECT ROUND(SUM(FINAL_SALES - FINAL_COST) / SUM(FINAL_SALES), 4) * 100 AS `PROFIT MARGIN` FROM MEDICAL_INVENTORY
```

Before

	PROFIT MARGIN
▶	46.67

#After

	PROFIT MARGIN
▶	46.6800

- Gross Profit:**

```
SELECT ROUND(SUM(FINAL_SALES - FINAL_COST)) AS `GROSS PROFIT` FROM MEDICAL_INVENTORY
```

#Before

	GROSS PROFIT
▶	1552810

#After

	GROSS PROFIT
▶	1548602

Inventory

- Quantity Sold:**

```
SELECT ROUND(SUM(QUANTITY),4) AS `QUANTITY SOLD` FROM MEDICAL_INVENTORY;
```

#Before

	QUANTITY SOLD
▶	31731

#After

	QUANTITY SOLD
▶	31694

Product Analysis:

- Total Number of Drugs:**

```
SELECT DISTINCT(DRUGNAME), COUNT(DISTINCT(DRUGNAME)) AS `Total Number of Drugs`
FROM MEDICAL_INVENTORY;
```

	DRUGNAME	Total Number of Drugs
▶	ZINC ACETATE 20MG/5ML SYP	751

Best Selling Drugs Based on Quantity and Sales:

- Based On Quantity:**

```
SELECT DRUGNAME, SUBCAT, SUBCAT1, SUM(QUANTITY) AS `Best Selling Drugs By QUANTITY`
FROM MEDICAL_INVENTORY_CLEAN
GROUP BY DRUGNAME
ORDER BY SUM(QUANTITY) DESC limit 10 offset 0;
```

Before (*Note: Blank = 8266)

	DRUGNAME	SUBCAT	SUBCAT1	Best Selling Drugs By QUANTITY
▶	NULL	NULL	NULL	8266
	SODIUM CHLORIDE IVF 100ML	IV FLUIDS, ELECTROLYTES, TPN	INTRAVENOUS & OTHER STERILE SOLUTIONS	1278
	SEVOFLURANE 99.97%	LIQUIDS & SOLUTIONS	ANAESTHETICS	1193
	SODIUM CHLORIDE 0.9%	IV FLUIDS, ELECTROLYTES, TPN	INTRAVENOUS & OTHER STERILE SOLUTIONS	948
	ONDANSETRON 2MG/ML	INJECTIONS	GASTROINTESTINAL & HEPATOBILIARY SYSTEM	933
	MULTIPLE ELECTROLYTES 500ML IVF	IV FLUIDS, ELECTROLYTES, TPN	INTRAVENOUS & OTHER STERILE SOLUTIONS	919
	WATER FOR INJECTION 10ML SOLUTION	INJECTIONS	INTRAVENOUS & OTHER STERILE SOLUTIONS	871
	LEVOSALBUTAMOL/LEVALBUTEROL 0.63MG RES...	INHALERS & RESPULES	RESPIRATORY SYSTEM	604
	PANTOPRAZOLE 40MG INJ	INJECTIONS	GASTROINTESTINAL & HEPATOBILIARY SYSTEM	594
	PARACETAMOL 1GM IV INJ	INJECTIONS	CENTRAL NERVOUS SYSTEM	593

After

	DRUGNAME	SUBCAT	SUBCAT1	Best Selling Drugs By QUANTITY
▶	MULTIPLE ELECTROLYTES 500ML IVF	INJECTIONS	INTRAVENOUS & OTHER STERILE SOLUTIONS	4608
	SODIUM CHLORIDE IVF 100ML	INJECTIONS	INTRAVENOUS & OTHER STERILE SOLUTIONS	2774
	ONDANSETRON 2MG/ML	INJECTIONS	GASTROINTESTINAL & HEPATOBILIARY SYSTEM	2203
	SODIUM CHLORIDE 0.9%	IV FLUIDS, ELECTROLYTES, TPN	INTRAVENOUS & OTHER STERILE SOLUTIONS	1569
	SEVOFLURANE 99.97%	LIQUIDS & SOLUTIONS	ANAESTHETICS	1193
	WATER FOR INJECTION 10ML SOLUTION	INJECTIONS	INTRAVENOUS & OTHER STERILE SOLUTIONS	911
	PANTOPRAZOLE 40MG INJ	INJECTIONS	INTRAVENOUS & OTHER STERILE SOLUTIONS	837
	LEVOSALBUTAMOL/LEVALBUTEROL 0.63MG RES...	INJECTIONS	INTRAVENOUS & OTHER STERILE SOLUTIONS	728
	PARACETAMOL 1GM IV INJ	INJECTIONS	CENTRAL NERVOUS SYSTEM	614
	ATRACURIUM BESYLATE 25MG/2.5ML	INJECTIONS	MUSCULO-SKELETAL SYSTEM	567

- Based On Sales:

```
SELECT DRUGNAME, SUBCAT, SUBCAT1, SUM(FINAL_SALES) AS `Best Selling Drugs By SALES`
FROM MEDICAL_INVENTORY
GROUP BY DRUGNAME
ORDER BY SUM(FINAL_SALES) DESC limit 10 offset 0;
```

Before (*Note: Blank = 436786.55)

	DRUGNAME	SUBCAT	SUBCAT1	Best Selling Drugs By SALES
▶	NULL	NULL	NULL	436786.549999999487
	HUMAN ALBUMIN 25% INJ	IV FLUIDS, ELECTROLYTES, TPN	INTRAVENOUS & OTHER STERILE SOLUTIONS	314856.399999999985
	MEROPENEM 1GM INJ	INJECTIONS	ANTI-INFECTIVES	219485.942
	LIPOSOMAL AMPHOTERICIN B 50MG INJ	INJECTIONS	ANTI-INFECTIVES	105262.600000000003
	PARACETAMOL 1GM IV INJ	INJECTIONS	CENTRAL NERVOUS SYSTEM	94146.757999999967
	TIGECYCLINE 50MG INJ	INJECTIONS	ANTI-INFECTIVES	91407.9
	MULTIPLE ELECTROLYTES 500ML IVF	IV FLUIDS, ELECTROLYTES, TPN	INTRAVENOUS & OTHER STERILE SOLUTIONS	88019.200000000019
	MICAFUNGIN 50MG INJ	INJECTIONS	ANTI-INFECTIVES	85760.032000000002
	PIPERACILLIN 4GM + TAZOBACTAM 500MG	INJECTIONS	ANTI-INFECTIVES	75899.547999999998
	SODIUM CHLORIDE IVF 100ML	IV FLUIDS, ELECTROLYTES, TPN	INTRAVENOUS & OTHER STERILE SOLUTIONS	61403.952000000011

After

	DRUGNAME	SUBCAT	SUBCAT1	Best Selling Drugs By SALES
▶	HUMAN ALBUMIN 25% INJ	IV FLUIDS, ELECTROLYTES, TPN	INTRAVENOUS & OTHER STERILE SOLUTIONS	311574
	MULTIPLE ELECTROLYTES 500ML IVF	INJECTIONS	INTRAVENOUS & OTHER STERILE SOLUTIONS	276170
	MEROPENEM 1GM INJ	INJECTIONS	ANTI-INFECTIVES	217501
	SODIUM CHLORIDE IVF 100ML	INJECTIONS	INTRAVENOUS & OTHER STERILE SOLUTIONS	141725
	LIPOSOMAL AMPHOTERICIN B 50MG INJ	INJECTIONS	ANTI-INFECTIVES	103664
	ONDANSETRON 2MG/ML	INJECTIONS	GASTROINTESTINAL & HEPATOBIILIARY SYSTEM	98595
	PARACETAMOL 1GM IV INJ	INJECTIONS	CENTRAL NERVOUS SYSTEM	95197
	SODIUM CHLORIDE 0.9%	IV FLUIDS, ELECTROLYTES, TPN	INTRAVENOUS & OTHER STERILE SOLUTIONS	95168
	TIGECYCLINE 50MG INJ	INJECTIONS	ANTI-INFECTIVES	91407
	MICAFUNGIN 50MG INJ	INJECTIONS	ANTI-INFECTIVES	85758

Formulation Analysis

- Based On Sales

```
SELECT FORMULATION , ROUND(SUM(FINAL_SALES),4) AS 'SALES BY FORMULATION'
FROM MEDICAL_INVENTORY
GROUP BY FORMULATION
ORDER BY SUM(FINAL_SALES) DESC
LIMIT 4;
```

Before

	FORMULATION	SALES BY FORMULATION
	Form1	27551
	Patent	986
	Form2	2744
	Form3	163
▶	NULL	287

AFTER

	FORMULATION	SALES BY FORMULATION
▶	Form1	27803
	Patent	986
	Form2	2742
	Form3	163

Customer Analysis

- Repeat Customers

```
SELECT Patient_ID, COUNT(*) AS `Repeat Customers`
FROM medical_inventory
GROUP BY Patient_ID
ORDER BY COUNT(*) DESC;
```

	Patient_ID	Repeat Customers
▶	12018071649	49
	12018097835	44
	12018085615	44
	12018064444	37
	12018075690	34
	12018086686	33
	12018097199	33
	12018096209	32
	12018101517	31
	12018092135	31
	12018086231	31
	12018109292	29
	12018093304	29
	12018102915	29
	12018004314	28
	12018079307	27
	12018089083	26
	12018065308	26
	12018071715	25

Category Analysis

- Sub Cat by Quantity:

```
SELECT DISTINCT(SUBCAT), Count(*) AS `NUMBER OF QUANTITY`
FROM MEDICAL_INVENTORY
GROUP BY SUBCAT
ORDER BY Count(*) DESC;
```

Before

	SUBCAT	NUMBER OF QUANTITY
►	INJECTIONS	6500
	IV FLUIDS, ELECTROLYTES, TPN	2709
	NULL	1668
	TABLETS & CAPSULES	1505
	INHALERS & RESPULES	469
	OINTMENTS, CREAMS & GELS	364
	LIQUIDS & SOLUTIONS	265
	SYRUP & SUSPENSION	237
	POWDER	216
	NUTRITIONAL SUPPLEMENTS	126
	PESSARIES & SUPPOSITORIES	55
	DROPS	53
	VACCINE	19
	SPRAY	12
	PATCH	11
	LOTIONS	5
	SOLUTION	3
	SACHETS	1

#After

	SUBCAT	NUMBER OF QUANTITY
►	INJECTIONS	8129
	IV FLUIDS, ELECTROLYTES, TPN	2711
	TABLETS & CAPSULES	1506
	INHALERS & RESPULES	471
	OINTMENTS, CREAMS & GELS	365
	LIQUIDS & SOLUTIONS	265
	SYRUP & SUSPENSION	237
	POWDER	216
	NUTRITIONAL SUPPLEMENTS	125
	PESSARIES & SUPPOSITORIES	55
	DROPS	53
	VACCINE	19
	SPRAY	12
	PATCH	11
	LOTIONS	5
	SOLUTION	3
	SACHETS	1

- Sub Cat-1 by Quantity:**

```
SELECT DISTINCT(SUBCAT1), Count(*) AS `NUMBER OF QUANTITY`
FROM MEDICAL_INVENTORY
GROUP BY SUBCAT1
ORDER BY Count(*) DESC;
```

Before

	SUBCAT1	NUMBER OF QUANTITY
▶	INTRAVENOUS & OTHER STERILE SOLUTIONS	3192
	GASTROINTESTINAL & HEPATOBIILIARY SYSTEM	1738
	NULL	1692
	ANTI-INFECTIVES	1647
	CARDIOVASCULAR & HEMATOPOIETIC SYSTEM	1480
	CENTRAL NERVOUS SYSTEM	1262
	RESPIRATORY SYSTEM	593
	ANAESTHETICS	591
	NUTRITION	331
	MUSCULO-SKELETAL SYSTEM	322
	VITAMINS & MINERALS	303
	HORMONES	291
	IMMUNOLOGY	186
	ENDOCRINE & METABOLIC SYSTEM	161
	DERMATOLOGY	156

#After

	SUBCAT1	NUMBER OF QUANTITY
▶	INTRAVENOUS & OTHER STERILE SOLUTIONS	4597
	GASTROINTESTINAL & HEPATOBIILIARY SYSTEM	1775
	ANTI-INFECTIVES	1652
	CARDIOVASCULAR & HEMATOPOIETIC SYSTEM	1582
	CENTRAL NERVOUS SYSTEM	1286
	ANAESTHETICS	642
	RESPIRATORY SYSTEM	605
	NUTRITION	331
	MUSCULO-SKELETAL SYSTEM	330
	VITAMINS & MINERALS	302
	HORMONES	291
	IMMUNOLOGY	186
	ENDOCRINE & METABOLIC SYSTEM	161
	DERMATOLOGY	156
	ENDOCRINE & METABOLIC SYSTEM	156

Operational Efficiency

- Average Transaction Value (ATV):**

```
SELECT (SUM(FINAL_SALES) / COUNT(*)) AS `AVERAGE TRANSACTIONS VALUE`
FROM MEDICAL_INVENTORY;
```

	AVERAGE TRANSACTIONS VALUE
▶	234.0383004641976