In [2]:
```
import pandas as pd
import sqlite3
```

In [3]:
```
conn = sqlite3.connect('inventory.db')
```

In [4]:
```
tables = pd.read_sql_query("SELECT name FROM sqlite_master WHERE type='table'",conn)
tables
```

Out[4]:

	name
0	begin_inventory
1	end_inventory
2	purchases
3	purchase_prices
4	sales
5	vendor_invoice
6	vendor_sales_summary

In [5]:
```
for table in tables['name']:
    print('-'*50, f'{table}','-'*50)
    print('count of records:',pd.read_sql(f"select count(*) as count from {table}", conn)['count'].values[0])
    display(pd.read_sql(f"select * from {table} limit 5", conn))
```

```
-------------------------------------------------- begin_inventory --------------------------------------------
-----
count of records: 206529
```

	InventoryId	Store	City	Brand	Description	Size	onHand	Price	startDate
0	1_HARDERSFIELD_58	1	HARDERSFIELD	58	Gekkeikan Black & Gold Sake	750mL	8	12.99	2024-01-01
1	1_HARDERSFIELD_60	1	HARDERSFIELD	60	Canadian Club 1858 VAP	750mL	7	10.99	2024-01-01
2	1_HARDERSFIELD_62	1	HARDERSFIELD	62	Herradura Silver Tequila	750mL	6	36.99	2024-01-01
3	1_HARDERSFIELD_63	1	HARDERSFIELD	63	Herradura Reposado Tequila	750mL	3	38.99	2024-01-01
4	1_HARDERSFIELD_72	1	HARDERSFIELD	72	No. 3 London Dry Gin	750mL	6	34.99	2024-01-01

```
-------------------------------------------------- end_inventory ----------------------------------------------
---
count of records: 224489
```

	InventoryId	Store	City	Brand	Description	Size	onHand	Price	endDate
0	1_HARDERSFIELD_58	1	HARDERSFIELD	58	Gekkeikan Black & Gold Sake	750mL	11	12.99	2024-12-31
1	1_HARDERSFIELD_62	1	HARDERSFIELD	62	Herradura Silver Tequila	750mL	7	36.99	2024-12-31
2	1_HARDERSFIELD_63	1	HARDERSFIELD	63	Herradura Reposado Tequila	750mL	7	38.99	2024-12-31
3	1_HARDERSFIELD_72	1	HARDERSFIELD	72	No. 3 London Dry Gin	750mL	4	34.99	2024-12-31
4	1_HARDERSFIELD_75	1	HARDERSFIELD	75	Three Olives Tomato Vodka	750mL	7	14.99	2024-12-31

```
-------------------------------------------------- purchases -------------------------------------------------
count of records: 2372474
```

	InventoryId	Store	Brand	Description	Size	VendorNumber	VendorName	PONumber	PODate	ReceivingDate	Inv
0	69_MOUNTMEND_8412	69	8412	Tequila Ocho Plata Fresno	750mL	105	ALTAMAR BRANDS LLC	8124	2023-12-21	2024-01-02	20
1	30_CULCHETH_5255	30	5255	TGI Fridays Ultimte Mudslide	1.75L	4466	AMERICAN VINTAGE BEVERAGE	8137	2023-12-22	2024-01-01	20
2	34_PITMERDEN_5215	34	5215	TGI Fridays Long Island Iced	1.75L	4466	AMERICAN VINTAGE BEVERAGE	8137	2023-12-22	2024-01-02	20
3	1_HARDERSFIELD_5255	1	5255	TGI Fridays Ultimte Mudslide	1.75L	4466	AMERICAN VINTAGE BEVERAGE	8137	2023-12-22	2024-01-01	20
4	76_DONCASTER_2034	76	2034	Glendalough Double Barrel	750mL	388	ATLANTIC IMPORTING COMPANY	8169	2023-12-24	2024-01-02	20

```
-------------------------------------------------- purchase_prices -------------------------------------------
-----
count of records: 12261
```

	Brand	Description	Price	Size	Volume	Classification	PurchasePrice	VendorNumber	VendorName
0	58	Gekkeikan Black & Gold Sake	12.99	750mL	750	1	9.28	8320	SHAW ROSS INT L IMP LTD
1	62	Herradura Silver Tequila	36.99	750mL	750	1	28.67	1128	BROWN-FORMAN CORP
2	63	Herradura Reposado Tequila	38.99	750mL	750	1	30.46	1128	BROWN-FORMAN CORP
3	72	No. 3 London Dry Gin	34.99	750mL	750	1	26.11	9165	ULTRA BEVERAGE COMPANY LLP
4	75	Three Olives Tomato Vodka	14.99	750mL	750	1	10.94	7245	PROXIMO SPIRITS INC.

```
---------------------------------------------- sales ----------------------------------------------
count of records: 12825363
```

	InventoryId	Store	Brand	Description	Size	SalesQuantity	SalesDollars	SalesPrice	SalesDate	Volume	Classifica
0	1_HARDERSFIELD_1004	1	1004	Jim Beam w/2 Rocks Glasses	750mL	1	16.49	16.49	2024-01-01	750.0	
1	1_HARDERSFIELD_1004	1	1004	Jim Beam w/2 Rocks Glasses	750mL	2	32.98	16.49	2024-01-02	750.0	
2	1_HARDERSFIELD_1004	1	1004	Jim Beam w/2 Rocks Glasses	750mL	1	16.49	16.49	2024-01-03	750.0	
3	1_HARDERSFIELD_1004	1	1004	Jim Beam w/2 Rocks Glasses	750mL	1	14.49	14.49	2024-01-08	750.0	
4	1_HARDERSFIELD_1005	1	1005	Maker's Mark Combo Pack	375mL 2 Pk	2	69.98	34.99	2024-01-09	375.0	

```
---------------------------------------------- vendor_invoice ----------------------------------------
----
count of records: 5543
```

	VendorNumber	VendorName	InvoiceDate	PONumber	PODate	PayDate	Quantity	Dollars	Freight	Approval
0	105	ALTAMAR BRANDS LLC	2024-01-04	8124	2023-12-21	2024-02-16	6	214.26	3.47	None
1	4466	AMERICAN VINTAGE BEVERAGE	2024-01-07	8137	2023-12-22	2024-02-21	15	140.55	8.57	None
2	388	ATLANTIC IMPORTING COMPANY	2024-01-09	8169	2023-12-24	2024-02-16	5	106.60	4.61	None
3	480	BACARDI USA INC	2024-01-12	8106	2023-12-20	2024-02-05	10100	137483.78	2935.20	None
4	516	BANFI PRODUCTS CORP	2024-01-07	8170	2023-12-24	2024-02-12	1935	15527.25	429.20	None

```
---------------------------------------------- vendor_sales_summary ----------------------------------
----------
count of records: 10692
```

	VendorNumber	VendorName	Brand	Description	ActualPrice	Volume	TotalPurchaseQuantity	TotalPurchaseDollars	TotalSalesC
0	1128	BROWN-FORMAN CORP	1233	Jack Daniels No 7 Black	36.99	1750.0	145080	3811251.60	1
1	4425	MARTIGNETTI COMPANIES	3405	Tito's Handmade Vodka	28.99	1750.0	164038	3804041.22	1
2	17035	PERNOD RICARD USA	8068	Absolut 80 Proof	24.99	1750.0	187407	3418303.68	1
3	3960	DIAGEO NORTH AMERICA INC	4261	Capt Morgan Spiced Rum	22.99	1750.0	201682	3261197.94	2
4	3960	DIAGEO NORTH AMERICA INC	3545	Ketel One Vodka	29.99	1750.0	138109	3023206.01	1

In [6]:
```
purchases = pd.read_sql_query("select * from purchases where VendorNumber = 4466",conn)
```

```
purchases
```

Out[6]:

	InventoryId	Store	Brand	Description	Size	VendorNumber	VendorName	PONumber	PODate	ReceivingDate
0	30_CULCHETH_5255	30	5255	TGI Fridays Ultimte Mudslide	1.75L	4466	AMERICAN VINTAGE BEVERAGE	8137	2023-12-22	2024-01-01
1	34_PITMERDEN_5215	34	5215	TGI Fridays Long Island Iced	1.75L	4466	AMERICAN VINTAGE BEVERAGE	8137	2023-12-22	2024-01-02
2	1_HARDERSFIELD_5255	1	5255	TGI Fridays Ultimte Mudslide	1.75L	4466	AMERICAN VINTAGE BEVERAGE	8137	2023-12-22	2024-01-01
3	38_GOULCREST_5215	38	5215	TGI Fridays Long Island Iced	1.75L	4466	AMERICAN VINTAGE BEVERAGE	8207	2023-12-27	2024-01-07
4	59_CLAETHORPES_5215	59	5215	TGI Fridays Long Island Iced	1.75L	4466	AMERICAN VINTAGE BEVERAGE	8207	2023-12-27	2024-01-05
...	...	...	...	...	...	...	...	...	...	...
2187	81_PEMBROKE_5215	81	5215	TGI Fridays Long Island Iced	1.75L	4466	AMERICAN VINTAGE BEVERAGE	13595	2024-12-20	2024-12-29
2188	62_KILMARNOCK_5255	62	5255	TGI Fridays Ultimte Mudslide	1.75L	4466	AMERICAN VINTAGE BEVERAGE	13595	2024-12-20	2024-12-28
2189	34_PITMERDEN_5215	34	5215	TGI Fridays Long Island Iced	1.75L	4466	AMERICAN VINTAGE BEVERAGE	13595	2024-12-20	2024-12-28
2190	6_GOULCREST_5215	6	5215	TGI Fridays Long Island Iced	1.75L	4466	AMERICAN VINTAGE BEVERAGE	13595	2024-12-20	2024-12-31
2191	35_HALIVAARA_5255	35	5255	TGI Fridays Ultimte Mudslide	1.75L	4466	AMERICAN VINTAGE BEVERAGE	13595	2024-12-20	2024-12-27

2192 rows × 16 columns

In [7]:
```
purchases_prices = pd.read_sql_query("""select * from purchase_prices where VendorNumber = 4466""",conn)
purchases_prices
```

Out[7]:

	Brand	Description	Price	Size	Volume	Classification	PurchasePrice	VendorNumber	VendorName
0	5215	TGI Fridays Long Island Iced	12.99	1750mL	1750	1	9.41	4466	AMERICAN VINTAGE BEVERAGE
1	5255	TGI Fridays Ultimte Mudslide	12.99	1750mL	1750	1	9.35	4466	AMERICAN VINTAGE BEVERAGE
2	3140	TGI Fridays Orange Dream	14.99	1750mL	1750	1	11.19	4466	AMERICAN VINTAGE BEVERAGE

In [8]:
```
vendor_invoice = pd.read_sql_query("select * from vendor_invoice where VendorNumber = 4466",conn)
vendor_invoice
```

Out[8]:

	VendorNumber	VendorName	InvoiceDate	PONumber	PODate	PayDate	Quantity	Dollars	Freight	Approval
0	4466	AMERICAN VINTAGE BEVERAGE	2024-01-07	8137	2023-12-22	2024-02-21	15	140.55	8.57	None
1	4466	AMERICAN VINTAGE BEVERAGE	2024-01-19	8207	2023-12-27	2024-02-26	335	3142.33	16.97	None
2	4466	AMERICAN VINTAGE BEVERAGE	2024-01-18	8307	2024-01-03	2024-02-18	41	383.35	1.99	None
3	4466	AMERICAN VINTAGE BEVERAGE	2024-01-27	8469	2024-01-14	2024-03-11	72	673.20	3.30	None
4	4466	AMERICAN VINTAGE BEVERAGE	2024-02-04	8532	2024-01-19	2024-03-15	79	740.21	3.48	None
5	4466	AMERICAN VINTAGE BEVERAGE	2024-02-09	8604	2024-01-24	2024-03-15	347	3261.37	17.61	None
6	4466	AMERICAN VINTAGE BEVERAGE	2024-02-17	8793	2024-02-05	2024-04-02	72	675.36	3.17	None
7	4466	AMERICAN VINTAGE BEVERAGE	2024-03-01	8892	2024-02-12	2024-03-28	117	1096.05	5.15	None
8	4466	AMERICAN VINTAGE BEVERAGE	2024-03-07	8995	2024-02-19	2024-04-02	129	1209.27	5.44	None

9	4466	AMERICAN VINTAGE BEVERAGE	2024-03-12	9033	2024-02-22	2024-04-16	147	1377.87	6.61	None
10	4466	AMERICAN VINTAGE BEVERAGE	2024-03-16	9180	2024-03-03	2024-04-19	211	1979.33	9.50	None
11	4466	AMERICAN VINTAGE BEVERAGE	2024-03-23	9244	2024-03-08	2024-04-21	161	1510.69	6.95	None
12	4466	AMERICAN VINTAGE BEVERAGE	2024-03-31	9371	2024-03-17	2024-05-13	176	1649.20	8.91	None
13	4466	AMERICAN VINTAGE BEVERAGE	2024-04-09	9491	2024-03-24	2024-05-08	215	2016.43	10.08	None
14	4466	AMERICAN VINTAGE BEVERAGE	2024-04-17	9583	2024-03-31	2024-05-12	110	1035.10	5.69	None
15	4466	AMERICAN VINTAGE BEVERAGE	2024-04-20	9639	2024-04-04	2024-06-04	515	5323.01	25.02	None
16	4466	AMERICAN VINTAGE BEVERAGE	2024-04-29	9800	2024-04-15	2024-06-07	275	2775.01	13.60	None
17	4466	AMERICAN VINTAGE BEVERAGE	2024-05-09	9886	2024-04-21	2024-06-12	312	3050.86	13.73	None
18	4466	AMERICAN VINTAGE BEVERAGE	2024-05-14	9999	2024-04-29	2024-06-26	310	3117.82	14.97	None
19	4466	AMERICAN VINTAGE BEVERAGE	2024-05-16	10095	2024-05-06	2024-06-27	215	2123.01	11.46	None
20	4466	AMERICAN VINTAGE BEVERAGE	2024-05-28	10169	2024-05-11	2024-07-04	327	3298.55	15.83	None
21	4466	AMERICAN VINTAGE BEVERAGE	2024-06-04	10257	2024-05-17	2024-07-08	376	3708.18	20.39	None
22	4466	AMERICAN VINTAGE BEVERAGE	2024-06-12	10346	2024-05-23	2024-07-20	640	6458.38	29.71	None
23	4466	AMERICAN VINTAGE BEVERAGE	2024-06-17	10445	2024-05-30	2024-07-19	288	2937.56	15.86	None
24	4466	AMERICAN VINTAGE BEVERAGE	2024-06-22	10600	2024-06-09	2024-08-01	308	3213.28	17.03	None
25	4466	AMERICAN VINTAGE BEVERAGE	2024-06-29	10695	2024-06-16	2024-08-12	143	1585.75	8.09	None
26	4466	AMERICAN VINTAGE BEVERAGE	2024-07-09	10777	2024-06-22	2024-08-15	18	179.88	0.99	None
27	4466	AMERICAN VINTAGE BEVERAGE	2024-07-08	10836	2024-06-25	2024-08-14	8	85.96	0.43	None
28	4466	AMERICAN VINTAGE BEVERAGE	2024-07-11	10969	2024-06-29	2024-08-18	94	993.12	5.06	None
29	4466	AMERICAN VINTAGE BEVERAGE	2024-07-19	11085	2024-07-06	2024-09-04	601	5883.09	31.18	None
30	4466	AMERICAN VINTAGE BEVERAGE	2024-07-26	11187	2024-07-14	2024-08-26	1535	15406.69	77.03	None
31	4466	AMERICAN VINTAGE BEVERAGE	2024-08-03	11244	2024-07-18	2024-09-04	266	2888.22	15.31	None
32	4466	AMERICAN VINTAGE BEVERAGE	2024-08-11	11362	2024-07-26	2024-09-24	206	2171.64	11.08	None
33	4466	AMERICAN VINTAGE BEVERAGE	2024-08-18	11489	2024-08-04	2024-09-16	768	7292.98	37.92	None
34	4466	AMERICAN VINTAGE BEVERAGE	2024-08-24	11540	2024-08-08	2024-10-02	1207	12242.43	64.88	None
35	4466	AMERICAN VINTAGE BEVERAGE	2024-09-02	11716	2024-08-19	2024-09-29	433	4334.43	20.37	None
36	4466	AMERICAN VINTAGE BEVERAGE	2024-09-12	11771	2024-08-23	2024-10-11	370	3640.18	18.20	None
37	4466	AMERICAN VINTAGE BEVERAGE	2024-09-20	11901	2024-09-01	2024-10-30	358	3626.74	16.32	None
38	4466	AMERICAN VINTAGE BEVERAGE	2024-09-25	11993	2024-09-07	2024-10-23	233	2264.85	12.23	None
39	4466	AMERICAN VINTAGE BEVERAGE	2024-10-01	12125	2024-09-16	2024-11-07	284	2813.46	15.47	None
40	4466	AMERICAN VINTAGE BEVERAGE	2024-10-08	12235	2024-09-23	2024-11-20	258	2592.08	11.92	None
41	4466	AMERICAN VINTAGE BEVERAGE	2024-10-09	12253	2024-09-23	2024-11-14	1	11.19	0.05	None

		BEVERAGE			23	14				
42	4466	AMERICAN VINTAGE BEVERAGE	2024-10-12	12321	2024-09-26	2024-11-19	172	1685.98	7.59	None
43	4466	AMERICAN VINTAGE BEVERAGE	2024-10-20	12466	2024-10-05	2024-11-26	280	2798.60	14.55	None
44	4466	AMERICAN VINTAGE BEVERAGE	2024-10-27	12515	2024-10-09	2024-11-30	178	1763.28	8.64	None
45	4466	AMERICAN VINTAGE BEVERAGE	2024-11-07	12702	2024-10-21	2024-12-11	183	1812.77	8.70	None
46	4466	AMERICAN VINTAGE BEVERAGE	2024-11-12	12752	2024-10-25	2024-12-11	216	2156.16	10.57	None
47	4466	AMERICAN VINTAGE BEVERAGE	2024-11-20	12828	2024-10-30	2024-12-18	262	2597.36	12.99	None
48	4466	AMERICAN VINTAGE BEVERAGE	2024-11-27	12929	2024-11-06	2025-01-04	270	2622.32	12.85	None
49	4466	AMERICAN VINTAGE BEVERAGE	2024-11-28	13092	2024-11-16	2024-12-30	209	2036.17	11.20	None
50	4466	AMERICAN VINTAGE BEVERAGE	2024-12-06	13134	2024-11-20	2025-01-18	305	3018.89	15.70	None
51	4466	AMERICAN VINTAGE BEVERAGE	2024-12-16	13254	2024-11-28	2025-01-13	262	2530.36	11.39	None
52	4466	AMERICAN VINTAGE BEVERAGE	2024-12-26	13432	2024-12-09	2025-01-27	231	2263.43	11.32	None
53	4466	AMERICAN VINTAGE BEVERAGE	2024-12-30	13483	2024-12-13	2025-02-11	221	2178.27	11.33	None
54	4466	AMERICAN VINTAGE BEVERAGE	2025-01-09	13627	2024-12-22	2025-02-05	413	3985.03	19.53	None

In [9]:
```
sales = pd.read_sql_query("""select * from sales where VendorNo = 4466""",conn)
sales
```

Out[9]:

	InventoryId	Store	Brand	Description	Size	SalesQuantity	SalesDollars	SalesPrice	SalesDate	Volume	Class
0	1_HARDERSFIELD_5215	1	5215	TGI Fridays Long Island Iced	1.75L	1	12.99	12.99	2024-01-09	1750.0	
1	1_HARDERSFIELD_5215	1	5215	TGI Fridays Long Island Iced	1.75L	1	12.99	12.99	2024-01-12	1750.0	
2	1_HARDERSFIELD_5215	1	5215	TGI Fridays Long Island Iced	1.75L	1	12.99	12.99	2024-01-15	1750.0	
3	1_HARDERSFIELD_5215	1	5215	TGI Fridays Long Island Iced	1.75L	1	12.99	12.99	2024-01-21	1750.0	
4	1_HARDERSFIELD_5215	1	5215	TGI Fridays Long Island Iced	1.75L	1	12.99	12.99	2024-01-23	1750.0	
...	...	...	...	...	...	...	...	...	...	...	...
9448	9_BLACKPOOL_5215	9	5215	TGI Fridays Long Island Iced	1.75L	1	12.99	12.99	2024-12-21	1750.0	
9449	9_BLACKPOOL_5255	9	5255	TGI Fridays Ultimte Mudslide	1.75L	1	12.99	12.99	2024-12-02	1750.0	
9450	9_BLACKPOOL_5255	9	5255	TGI Fridays Ultimte Mudslide	1.75L	1	12.99	12.99	2024-12-09	1750.0	
9451	9_BLACKPOOL_5255	9	5255	TGI Fridays Ultimte Mudslide	1.75L	1	12.99	12.99	2024-12-23	1750.0	
9452	9_BLACKPOOL_5255	9	5255	TGI Fridays Ultimte Mudslide	1.75L	1	12.99	12.99	2024-12-31	1750.0	

9453 rows × 14 columns

In [10]:
```
purchases.groupby(['Brand','PurchasePrice'])[['Quantity','Dollars']].sum()
```

Out[10]:

Brand	PurchasePrice	Quantity	Dollars
3140	**11.19**	4640	51921.60
5215	**9.41**	4923	46325.43
5255	**9.35**	6215	58110.25

In [11]:
```
sales.groupby('Brand')[['SalesDollars','SalesPrice','SalesQuantity']].sum()
```

Out[11]:

Brand	SalesDollars	SalesPrice	SalesQuantity
3140	50531.10	30071.85	3890
5215	60416.49	41542.02	4651
5255	79187.04	51180.60	6096

In [12]:
```
vendor_invoice.columns
```

Out[12]:
```
Index(['VendorNumber', 'VendorName', 'InvoiceDate', 'PONumber', 'PODate',
       'PayDate', 'Quantity', 'Dollars', 'Freight', 'Approval'],
      dtype='object')
```

In [13]:
```
freight_summary = pd.read_sql_query("""select VendorNumber, SUM(Freight) as FreightCost
From vendor_invoice
GROUP BY VendorNumber""", conn)
```

In [14]:
```
freight_summary
```

Out[14]:

	VendorNumber	FreightCost
0	2	27.08
1	54	0.48
2	60	367.52
3	105	62.39
4	200	6.19
...	...	...
121	98450	856.02
122	99166	130.09
123	172662	178.34
124	173357	202.50
125	201359	0.09

126 rows × 2 columns

In [15]:
```
pd.read_sql_query("""SELECT
    p.VendorNumber,
    p.VendorName,
    p.Brand,
    p.PurchasePrice,
    pp.Volume,
    pp.Price as ActualPrice,
    SUM(p.Quantity) as TotalPurchaseQuantity,
    SUM(p.Dollars) as TotalPurchaseDollars
    FROM purchases p
    JOIN purchase_prices pp
    ON p.Brand = pp.Brand
    Where p.PurchasePrice > 0
    GROUP BY p.VendorNumber, p.VendorName, p.Brand
    ORDER BY TotalPurchaseDollars""",conn)
```

Out[15]:

	VendorNumber	VendorName	Brand	PurchasePrice	Volume	ActualPrice	TotalPurchaseQuantity	TotalPurchaseDollars
0	7245	PROXIMO SPIRITS INC.	3065	0.71	50	0.99	1	0.71
1	3960	DIAGEO NORTH AMERICA INC	6127	1.47	200	1.99	1	1.47
2	3924	HEAVEN HILL DISTILLERIES	9123	0.74	50	0.99	2	1.48
3	8004	SAZERAC CO INC	5683	0.39	50	0.49	6	2.34
4	9815	WINE GROUP INC	8527	1.32	750	4.99	2	2.64
...	...	...	...	...	...	...	...	...
10687	3960	DIAGEO NORTH AMERICA INC	3545	21.89	1750	29.99	138109	3023206.01
10688	3960	DIAGEO NORTH AMERICA INC	4261	16.17	1750	22.99	201682	3261197.94
10689	17035	PERNOD RICARD USA	8068	18.24	1750	24.99	187407	3418303.68
10690	4425	MARTIGNETTI COMPANIES	3405	23.19	1750	28.99	164038	3804041.22
10691	1128	BROWN-FORMAN CORP	1233	26.27	1750	36.99	145080	3811251.60

10692 rows × 8 columns

In [16]:
```
sales.columns
```

Out[16]:
```
Index(['InventoryId', 'Store', 'Brand', 'Description', 'Size', 'SalesQuantity',
       'SalesDollars', 'SalesPrice', 'SalesDate', 'Volume', 'Classification',
       'ExciseTax', 'VendorNo', 'VendorName'],
      dtype='object')
```

In [17]:
```
pd.read_sql_query("""SELECT
    VendorNo,
    Brand,
    SUM(SalesDollars) as TotalSalesDollars,
    SUM(SalesPrice) as TotalSalesPrice,
    SUM(SalesQuantity) as TotalSalesQuantity,
    SUM(ExciseTax) as TotalExciseTax
    FROM sales
    GROUP BY VendorNo, Brand
    ORDER BY TotalSalesDollars""", conn)
```

Out[17]:

	VendorNo	Brand	TotalSalesDollars	TotalSalesPrice	TotalSalesQuantity	TotalExciseTax
0	8004	5287	0.98	0.98	2	0.10
1	9206	2773	0.99	0.99	1	0.05
2	3252	3933	1.98	0.99	2	0.10
3	3924	9123	1.98	0.99	2	0.10
4	10050	3623	1.98	1.98	2	0.10
...	...	...	...	...	...	...
11267	3960	3545	4223107.62	545778.28	135838	249587.83
11268	3960	4261	4475972.88	420050.01	200412	368242.80
11269	17035	8068	4538120.60	461140.15	187140	343854.07
11270	4425	3405	4819073.49	561512.37	160247	294438.66
11271	1128	1233	5101919.51	672819.31	142049	260999.20

11272 rows × 6 columns

In [18]:
```
vendor_sales_summary = pd.read_sql_query("""WITH FreightSummary AS (
    SELECT
        VendorNumber,
        SUM(Freight) AS FreightCost
    FROM vendor_invoice
    GROUP BY VendorNumber
```

```
),
PurchaseSummary AS (
    SELECT
        p.VendorNumber,
        p.VendorName,
        p.Brand,
        p.Description,
        p.PurchasePrice,
        pp.Price AS ActualPrice,
        pp.Volume,
        SUM(p.Quantity) AS TotalPurchaseQuantity,
        SUM(p.Dollars) AS TotalPurchaseDollars
    FROM purchases p
    JOIN purchase_prices pp
        ON p.Brand = pp.Brand
    WHERE p.PurchasePrice > 0
    GROUP BY p.VendorName, p.Brand, p.Description, p.PurchasePrice, pp.Price, pp.Volume
),
SalesSummary AS (
    SELECT
        VendorNo,
        Brand,
        SUM(SalesQuantity) AS TotalSalesQuantity,
        SUM(SalesDollars) AS TotalSalesDollars,
        SUM(SalesPrice) AS TotalSalesPrice,
        SUM(ExciseTax) AS TotalExciseTax
    FROM sales
    GROUP BY VendorNo, Brand
)
SELECT
    ps.VendorNumber,
    ps.VendorName,
    ps.Brand,
    ps.Description,
    ps.ActualPrice,
    ps.Volume,
    ps.TotalPurchaseQuantity,
    ps.TotalPurchaseDollars,
    ss.TotalSalesQuantity,
    ss.TotalSalesDollars,
    ss.TotalSalesPrice,
    ss.TotalExciseTax,
    fs.FreightCost
FROM PurchaseSummary ps
LEFT JOIN SalesSummary ss
    ON ps.VendorNumber = ss.VendorNo
    AND ps.Brand = ss.Brand
LEFT JOIN FreightSummary fs
    ON ps.VendorNumber = fs.VendorNumber
ORDER BY ps.TotalPurchaseDollars DESC""",conn)
```

In [19]:
```
vendor_sales_summary
```

Out[19]:

	VendorNumber	VendorName	Brand	Description	ActualPrice	Volume	TotalPurchaseQuantity	TotalPurchaseDollars	Tot
0	1128	BROWN-FORMAN CORP	1233	Jack Daniels No 7 Black	36.99	1750	145080	3811251.60	
1	4425	MARTIGNETTI COMPANIES	3405	Tito's Handmade Vodka	28.99	1750	164038	3804041.22	
2	17035	PERNOD RICARD USA	8068	Absolut 80 Proof	24.99	1750	187407	3418303.68	
3	3960	DIAGEO NORTH AMERICA INC	4261	Capt Morgan Spiced Rum	22.99	1750	201682	3261197.94	
4	3960	DIAGEO NORTH AMERICA INC	3545	Ketel One Vodka	29.99	1750	138109	3023206.01	
...	...	...	...	...	...	...	...	...	
10687	9815	WINE GROUP INC	8527	Concannon Glen Ellen Wh Zin	4.99	750	2	2.64	
10688	8004	SAZERAC CO INC	5683	Dr McGillicuddy's Apple Pie	0.49	50	6	2.34	
10689	3924	HEAVEN HILL DISTILLERIES	9123	Deep Eddy Vodka	0.99	50	2	1.48	
10690	3960	DIAGEO NORTH AMERICA INC	6127	The Club Strawbry Margarita	1.99	200	1	1.47	
10691	7245	PROXIMO SPIRITS INC.	3065	Three Olives Grape Vodka	0.99	50	1	0.71	

10692 rows × 13 columns

In [20]:
```
vendor_sales_summary.dtypes
```

Out[20]:
```
VendorNumber              int64
VendorName               object
Brand                     int64
Description              object
ActualPrice             float64
Volume                   object
TotalPurchaseQuantity     int64
TotalPurchaseDollars    float64
TotalSalesQuantity      float64
TotalSalesDollars       float64
TotalSalesPrice         float64
TotalExciseTax          float64
FreightCost             float64
dtype: object
```

In [21]:
```
vendor_sales_summary.isnull().sum()
```

Out[21]:
```
VendorNumber              0
VendorName                0
Brand                     0
Description               0
ActualPrice               0
Volume                    0
TotalPurchaseQuantity     0
TotalPurchaseDollars      0
TotalSalesQuantity      178
TotalSalesDollars       178
TotalSalesPrice         178
TotalExciseTax          178
FreightCost               0
dtype: int64
```

In [22]:
```
vendor_sales_summary['VendorName'].unique()
```

Out[22]:
```
array(['BROWN-FORMAN CORP          ', 'MARTIGNETTI COMPANIES',
       'PERNOD RICARD USA          ', 'DIAGEO NORTH AMERICA INC   ',
       'BACARDI USA INC            ', 'JIM BEAM BRANDS COMPANY    ',
       'MAJESTIC FINE WINES        ', 'ULTRA BEVERAGE COMPANY LLP ',
       'STOLI GROUP,(USA) LLC      ', 'PROXIMO SPIRITS INC.       ',
       'MOET HENNESSY USA INC      ', 'CAMPARI AMERICA            ',
       'SAZERAC CO INC             ', 'CONSTELLATION BRANDS INC   ',
       'M S WALKER INC             ', 'SAZERAC NORTH AMERICA INC. ',
       'PALM BAY INTERNATIONAL INC ', 'REMY COINTREAU USA INC     ',
       'SIDNEY FRANK IMPORTING CO  ', 'E & J GALLO WINERY         ',
       'WILLIAM GRANT & SONS INC   ', 'HEAVEN HILL DISTILLERIES   ',
       'DISARONNO INTERNATIONAL LLC', 'EDRINGTON AMERICAS         ',
       'CASTLE BRANDS CORP.        ', 'SOUTHERN WINE & SPIRITS NE ',
       'STE MICHELLE WINE ESTATES  ', 'TRINCHERO FAMILY ESTATES   ',
       'MHW LTD                    ', 'WINE GROUP INC             ',
       'PERFECTA WINES             ', 'LUXCO INC                  ',
       'TREASURY WINE ESTATES      ', 'DIAGEO CHATEAU ESTATE WINES',
       'SHAW ROSS INT L IMP LTD    ', 'PINE STATE TRADING CO      ',
       'PHILLIPS PRODUCTS CO.      ', 'CALEDONIA SPIRITS INC      ',
       'STATE WINE & SPIRITS   ', 'KOBRAND CORPORATION        ',
       'BANFI PRODUCTS CORP        ', 'VINEYARD BRANDS INC        ',
       'DELICATO VINEYARDS INC     ', 'FABRIZIA SPIRITS LLC       ',
       'DUGGANS DISTILLED PRODUCTS ', 'Serralles Usa LLC          ',
       'SEA HAGG DISTILLERY LLC    ', 'OLE SMOKY DISTILLERY LLC   ',
       'VRANKEN AMERICA            ', 'KLIN SPIRITS LLC           ',
       'LAIRD & CO                 ', 'ADAMBA IMPORTS INTL INC    ',
       'LATITUDE BEVERAGE COMPANY  ', 'FREDERICK WILDMAN & SONS   ',
       'MCCORMICK DISTILLING CO    ', 'CHARLES JACQUIN ET CIE INC ',
       'WESTERN SPIRITS BEVERAGE CO', 'MARSALLE COMPANY           ',
       'AMERICAN VINTAGE BEVERAGE  ', 'MANGO BOTTLING INC         ',
       'SWEET BABY VINEYARD        ', 'NICHE W & S                ',
       'LABELLE VYDS AND WINERY    ', 'FLAG HILL WINERY & VINEYARD',
       'SMOKY QUARTZ DISTILLERY LLC', 'PREMIUM PORT WINES, INC.   ',
       'Russian Standard Vodka     ', 'Dunn Wine Brokers          ',
       'WEIN BAUER INC             ', 'BULLY BOY DISTILLERS       ',
       'ATLANTIC IMPORTING COMPANY ', 'PREMIER DISTRIBUTORS       ',
       'VINILANDIA USA             ', 'PARK STREET IMPORTS LLC    ',
       'TAKARA SAKE USA INC        ', 'SEA BREEZE CELLARS LLC     ',
       'STARK BREWING COMPANY      ', 'TY KU LLC                  ',
       'PSP WINES ', 'TAMWORTH DISTILLING        ',
       'ZORVINO VINEYARDS          ', 'SOUTHERN GLAZERS W&S OF NE ',
       'HOOD RIVER DISTILLERS, Inc.', 'CRUSH WINES                ',
       'POVERTY LANE ORCHARDS      ', 'DJINN SPIRITS LLC          ',
       'MOONLIGHT MEADERY          ', 'TALL SHIP DISTILLERY LLC   ',
       'FORTUNE WINE BROKERS LLC   ', 'BLACK COVE BEVERAGES       ',
       'VINEXTRA INC               ', 'SURVILLE ENTERPRISES CORP  ',
       'JEWELL TOWNE VINEYARDS     ', 'SWEETWATER FARM         ',
       'MARTIGNETTI COMPANIES ', 'ALTAMAR BRANDS LLC         ',
       'CANDIA VINEYARDS           ', 'INCREDIBREW INC            ',
       'ALISA CARR BEVERAGES          ', 'STELLAR IMPORTING CO LLC   ',
       'FULCHINO VINEYARD INC      ',
       'IRA GOLDMAN AND WILLIAMS, LLP          ',
       'Circa Wines                ', 'VINEDREA WINES LLC         ',
       'BLACK PRINCE DISTILLERY INC', 'VINEYARD BRANDS LLC        ',
       'THE IMPORTED GRAPE LLC     ', 'WALPOLE MTN VIEW WINERY    ',
       'GILMANTON WINERY & VINEYARD', 'HAUNTING WHISPER VYDS      ',
       'STAR INDUSTRIES INC.       ', 'LOYAL DOG WINERY           ',
       'R.P.IMPORTS INC            ', 'THE PIERPONT GROUP LLC     ',
       'APPOLO VINEYARDS LLC       ', 'BLACK ROCK SPIRITS LLC     ',
       'CENTEUR IMPORTS LLC        ', 'HIGHLAND WINE MERCHANTS LLC',
       'AMERICAN SPIRITS EXCHANGE  ', 'UNCORKED       ',
       'BRONCO WINE COMPANY        ', 'MILTONS DISTRIBUTING CO    ',
       'TRUETT HURST               ', 'LAUREATE IMPORTS CO        ',
       'FANTASY FINE WINES CORP    ', 'AAPER ALCOHOL & CHEMICAL CO',
       'SILVER MOUNTAIN CIDERS     ', 'CAPSTONE INTERNATIONAL     ',
       'FLAVOR ESSENCE INC         '], dtype=object)
```

In [23]:
```
vendor_sales_summary['Volume'] = vendor_sales_summary['Volume'].astype('float64')
```

In [24]:
```
vendor_sales_summary.fillna(0, inplace = True)
```

In [25]:
```
vendor_sales_summary['VendorName'] = vendor_sales_summary['VendorName'].str.strip()
```

In [26]:
```
vendor_sales_summary['GrossProfit'] = vendor_sales_summary['TotalSalesDollars'] - vendor_sales_summary['TotalPu
```

In [27]:
```
vendor_sales_summary['ProfitMargin'] = (vendor_sales_summary['GrossProfit'] / vendor_sales_summary['TotalSalesD
```

In [28]:
```
vendor_sales_summary['StockTurnover'] = vendor_sales_summary['TotalSalesQuantity'] / vendor_sales_summary['Tota
```

In [29]:
```
vendor_sales_summary['SalesPurchaseRatio'] = vendor_sales_summary['TotalSalesDollars'] / vendor_sales_summary['
```

In [ ]:

In [30]:
```
cursor = conn.cursor()
```

In [31]:
```
cursor.execute("""CREATE TABLE vendor_sales_summary (

VendorNumber INT,

VendorName VARCHAR(100),

Brand INT,

Description VARCHAR(100),

PurchasePrice DECIMAL(10,2),

ActualPrice DECIMAL(10,2),

Volume,

TotalPurchaseQuantity INT,

TotalPurchaseDollars DECIMAL(15, 2),

TotalSalesQuantity INT,

TotalSalesDollars DECIMAL(15,2),

TotalSalesPrice DECIMAL(15,2),

TotalExciseTax DECIMAL(15,2),

FreightCost DECIMAL(15,2),

GrossProfit DECIMAL(15,2),

ProfitMargin DECIMAL(15,2),

StockTurnover DECIMAL(15,2),

SalesToPurchaseRatio DECIMAL(15, 2),

PRIMARY KEY (VendorNumber, Brand)
);
""")
```

```
---------------------------------------------------------------------------
OperationalError                          Traceback (most recent call last)
Cell In[31], line 1
----> 1 cursor.execute("""CREATE TABLE vendor_sales_summary (
      2
      3 VendorNumber INT,
      4
      5 VendorName VARCHAR(100),
      6
      7 Brand INT,
      8
      9 Description VARCHAR(100),
     10
     11 PurchasePrice DECIMAL(10,2),
     12
     13 ActualPrice DECIMAL(10,2),
     14
     15 Volume,
     16
     17 TotalPurchaseQuantity INT,
     18
     19 TotalPurchaseDollars DECIMAL(15, 2),
     20
     21 TotalSalesQuantity INT,
     22
     23 TotalSalesDollars DECIMAL(15,2),
     24
     25 TotalSalesPrice DECIMAL(15,2),
     26
     27 TotalExciseTax DECIMAL(15,2),
     28
     29 FreightCost DECIMAL(15,2),
     30
     31 GrossProfit DECIMAL(15,2),
     32
     33 ProfitMargin DECIMAL(15,2),
     34
     35 StockTurnover DECIMAL(15,2),
     36
     37 SalesToPurchaseRatio DECIMAL(15, 2),
     38
     39 PRIMARY KEY (VendorNumber, Brand)
     40 );
     41 """)

OperationalError: table vendor_sales_summary already exists
```

In [ ]:
```
pd.read_sql_query("select * from vendor_sales_summary", conn)
```

In [ ]:
```
vendor_sales_summary.to_sql('vendor_sales_summary',conn, if_exists = 'replace', index = False)
```

In [ ]:
```
import sqlite3
import pandas as pd
import logging
from ingestion_db import ingest_db

logging.basicConfig(
    level=logging.DEBUG,
    format="%(asctime)s - %(levelname)s - %(message)s",
    handlers=[
        logging.FileHandler("logs/get_vendor_summary.log"),
        logging.StreamHandler()   # <-- prints to console
    ]
)


def create_vendor_summary(conn):
        vendor_sales_summary = pd.read_sql_query("""WITH FreightSummary AS (
            SELECT
                VendorNumber,
                SUM(Freight) AS FreightCost
            FROM vendor_invoice
            GROUP BY VendorNumber
        ),
        PurchaseSummary AS (
            SELECT
                p.VendorNumber,
                p.VendorName,
                p.Brand,
                p.Description,
                p.PurchasePrice,
                pp.Price AS ActualPrice,
                pp.Volume,
```

```
                SUM(p.Quantity) AS TotalPurchaseQuantity,
                SUM(p.Dollars) AS TotalPurchaseDollars
            FROM purchases p
            JOIN purchase_prices pp
                ON p.Brand = pp.Brand
            WHERE p.PurchasePrice > 0
            GROUP BY p.VendorName, p.Brand, p.Description, p.PurchasePrice, pp.Price, pp.Volume
        ),
        SalesSummary AS (
            SELECT
                VendorNo,
                Brand,
                SUM(SalesQuantity) AS TotalSalesQuantity,
                SUM(SalesDollars) AS TotalSalesDollars,
                SUM(SalesPrice) AS TotalSalesPrice,
                SUM(ExciseTax) AS TotalExciseTax
            FROM sales
            GROUP BY VendorNo, Brand
        )
        SELECT
            ps.VendorNumber,
            ps.VendorName,
            ps.Brand,
            ps.Description,
            ps.ActualPrice,
            ps.Volume,
            ps.TotalPurchaseQuantity,
            ps.TotalPurchaseDollars,
            ss.TotalSalesQuantity,
            ss.TotalSalesDollars,
            ss.TotalSalesPrice,
            ss.TotalExciseTax,
            fs.FreightCost
        FROM PurchaseSummary ps
        LEFT JOIN SalesSummary ss
            ON ps.VendorNumber = ss.VendorNo
            AND ps.Brand = ss.Brand
        LEFT JOIN FreightSummary fs
            ON ps.VendorNumber = fs.VendorNumber
        ORDER BY ps.TotalPurchaseDollars DESC""",conn)

        return vendor_sales_summary


def clean_data(df):

    df['Volume'] = df['Volume'].astype('float')
    df.fillna(0, inplace= True)

    df['VendorName']= df['VendorName'].str.strip()
    df['Description'] = df['Description'].str.strip()

    df['GrossProfit'] = df['TotalSalesDollars'] - df['TotalPurchaseDollars']
    df['ProfitMargin'] = (df['GrossProfit'] / df['TotalSalesDollars']) * 100
    df['StockTurnover'] = df['TotalSalesQuantity'] / df['TotalPurchaseQuantity']
    df['SalesPurchaseRatio'] = df['TotalSalesDollars'] / df['TotalPurchaseDollars']


    return df

if __name__ == '__main__':
    conn = sqlite3.connect('inventory.db')

    logging.info('Creating Vendor Summary Table....')
    summary_df = create_vendor_summary(conn)
    logging.info(summary_df.head())

    logging.info('Cleaning Data...')
    clean_df = clean_data(summary_df)
    logging.info(clean_df.head())

    logging.info('Ingestion data...')
    ingest_db(clean_df,'vendor_sales_summary',conn)
    logging.info('completed')
```

In [ ]:
```
print(summary_df.head())
print(clean_df.head())
```

In [ ]:
```
VendorNumber,VendorName, Brand,ActualPrice, Volume,  TotalPurchaseQuantity,  TotalPurchaseDollars,TotalSalesQua
```