



# WALMART

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# Objective

To analyse and derive insights from Walmart's sales data to improve business decision-making processes.



# Dataset



- The dataset consists of the following columns:
- **Invoice\_ID**: Unique identifier for each invoice.
- **Branch**: Branch of the store where the sale took place.
- **City**: City where the store branch is located.
- **Customer\_type**: Type of customer (e.g., Member, Normal).
- **Gender**: Gender of the customer.
- **Product\_line**: Category of the product sold.
- **Unit\_price**: Price per unit of the product.
- **Quantity**: Quantity of the product sold.
- **Tax\_5%**: Tax applied on the sale.
- **Total**: Total amount of the sale.
- **Date**: Date of the transaction.
- **Time**: Time of the transaction.
- **Payment**: Payment method used (e.g., Cash, Credit Card).
- **cogs**: Cost of goods sold.
- **gross\_margin\_percentage**: Gross margin percentage.
- **gross\_income**: Gross income from the sale.
- **Rating**: Customer rating for the purchase.





01

# Sales Analysis

Retrieve all columns for sales made in a specific branch (e.g., Branch 'A').

```
create database Walmart;  
use Walmart;
```

```
SELECT * FROM w_sales  
WHERE Branch = 'A'
```

Branch	City	Customer_type	Gender	Product_line	Unit_price	Quantity	Tax	Total	Date	Time	Payment	cogs	gross_margin_percentage	gross_profit
Yangon	Yangon	Member	Female	Health and beauty	74.69	7	26.1415	548.9715	05-01-2019	13:08:00	Ewallet	522.83	4.761904762	26.1415
Yangon	Yangon	Normal	Male	Home and lifestyle	46.33	7	16.2155	340.5255	03-03-2019	13:23:00	Credit card	324.31	4.761904762	16.2155
Yangon	Yangon	Member	Male	Health and beauty	58.22	8	23.288	489.048	27-01-2019	20:33:00	Ewallet	465.76	4.761904762	23.288
Yangon	Yangon	Normal	Male	Sports and travel	86.31	7	30.2085	634.3785	08-02-2019	10:37:00	Ewallet	604.17	4.761904762	30.2085
Yangon	Yangon	Member	Female	Electronic accessories	68.84	6	20.652	433.692	25-02-2019	14:36:00	Ewallet	413.04	4.761904762	20.652
Yangon	Yangon	Member	Female	Health and beauty	36.26	2	3.626	76.146	10-01-2019	17:15:00	Credit card	72.52	4.761904762	3.626
Yangon	Yangon	Normal	Female	Electronic accessories	46.95	5	11.7375	246.4875	12-02-2019	10:25:00	Ewallet	234.75	4.761904762	11.7375
Yangon	Yangon	Normal	Male	Food and beverages	43.19	10	21.595	453.495	07-02-2019	16:48:00	Ewallet	431.9	4.761904762	21.595
Yangon	Yangon	Normal	Female	Health and beauty	71.38	10	35.69	749.49	29-03-2019	19:21:00	Cash	713.8	4.761904762	35.69
Yangon	Yangon	Member	Female	Health and beauty	68.93	7	24.1255	506.6355	11-03-2019	11:03:00	Credit card	482.51	4.761904762	24.1255
Yangon	Yangon	Normal	Male	Sports and travel	72.61	6	21.783	457.443	01-01-2019	10:39:00	Credit card	435.66	4.761904762	21.783
Yangon	Yangon	Normal	Male	Food and beverages	54.67	3	8.2005	172.2105	21-01-2019	18:00:00	Credit card	164.01	4.761904762	8.2005
Yangon	Yangon	Normal	Male	Electronic accessories	34.56	5	8.64	181.44	17-02-2019	11:15:00	Ewallet	172.8	4.761904762	8.64
Yangon	Yangon	Member	Male	Sports and travel	88.63	3	13.2945	279.1845	02-03-2019	17:36:00	Ewallet	265.89	4.761904762	13.2945
Yangon	Yangon	Member	Female	Home and lifestyle	52.59	8	21.036	441.756	22-03-2019	19:20:00	Credit card	420.72	4.761904762	21.036
Yangon	Yangon	Normal	Female	Fashion accessories	87.67	2	8.767	184.107	10-03-2019	12:17:00	Credit card	175.34	4.761904762	8.767
Yangon	Yangon	Normal	Male	Health and beauty	24.89	9	11.2005	235.2105	15-03-2019	15:36:00	Cash	224.01	4.761904762	11.2005
Yangon	Yangon	Normal	Male	Health and beauty	96.58	2	9.658	202.818	15-03-2019	10:12:00	Credit card	193.16	4.761904762	9.658
Yangon	Yangon	Member	Male	Sports and travel	62.62	5	15.655	332.755	18-03-2019	18:15:00	Ewallet	317.1	4.761904762	15.655





# »» Sales Analysis

02

Find the total sales for each product line.

SELECT

Product\_Line, ROUND(SUM(Total), 2) AS Total\_Sales

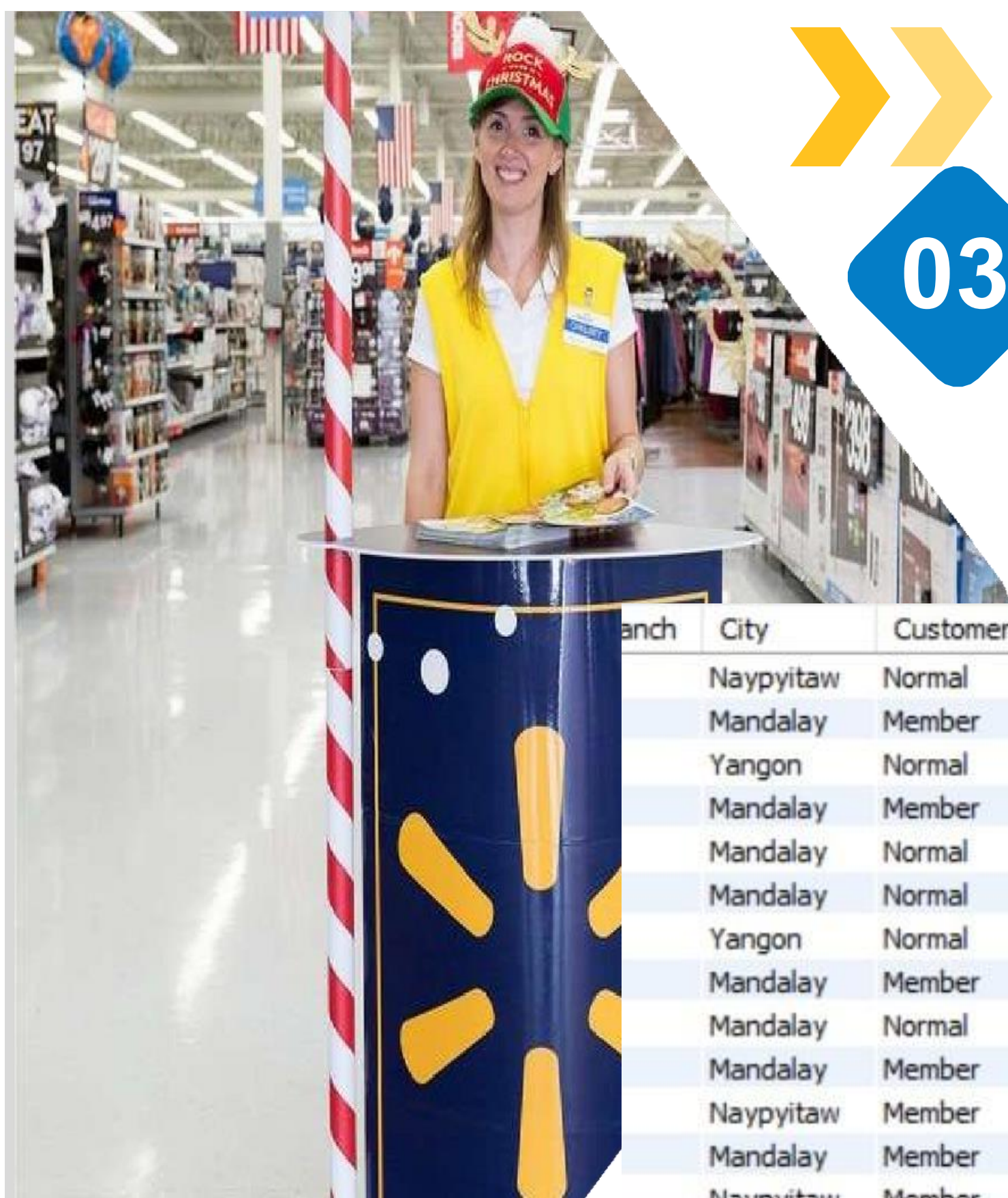
FROM

w\_sales

GROUP BY Product\_line;

Product_Line	Total_Sales
Health and beauty	49193.74
Electronic accessories	54337.53
Home and lifestyle	53861.91
Sports and travel	55122.83
Food and beverages	56144.84
Fashion accessories	54305.9





# Sales Analysis

03

List all sales transactions where the payment method was 'Cash'

```
SELECT * FROM
```

```
w_sales
```

```
WHERE
```

```
Payment = 'CASH'
```

Branch	City	Customer_type	Gender	Product_line	Unit_price	Quantity	Tax	Total	Date	Time	
	Naypyitaw	Normal	Female	Electronic accessories	15.28	5	3.82	80.22	08-03-2019	10:29:00	C
	Mandalay	Member	Male	Electronic accessories	25.51	4	5.102	107.142	09-03-2019	17:03:00	C
	Yangon	Normal	Female	Health and beauty	71.38	10	35.69	749.49	29-03-2019	19:21:00	C
	Mandalay	Member	Female	Sports and travel	93.72	6	28.116	590.436	15-01-2019	16:19:00	C
	Mandalay	Normal	Male	Fashion accessories	33.52	1	1.676	35.196	08-02-2019	15:31:00	C
	Mandalay	Normal	Female	Food and beverages	88.36	5	22.09	463.89	25-01-2019	19:48:00	C
	Yangon	Normal	Male	Health and beauty	24.89	9	11.2005	235.2105	15-03-2019	15:36:00	C
	Mandalay	Member	Male	Sports and travel	78.07	9	35.1315	737.7615	28-01-2019	12:43:00	C
	Mandalay	Normal	Male	Sports and travel	83.78	8	33.512	703.752	10-01-2019	14:49:00	C
	Mandalay	Member	Male	Home and lifestyle	30.12	8	12.048	253.008	03-03-2019	13:01:00	C
	Naypyitaw	Member	Male	Home and lifestyle	56.11	2	5.611	117.831	02-02-2019	10:11:00	C
	Mandalay	Member	Female	Sports and travel	69.12	6	20.736	435.456	08-02-2019	13:03:00	C
	Naypyitaw	Member	Female	Food and beverages	98.7	8	39.48	829.08	04-03-2019	20:39:00	C
	Naypyitaw	Member	Male	Health and beauty	15.37	2	1.537	32.277	16-03-2019	19:47:00	C
	Mandalay	Member	Female	Electronic accessories	93.96	4	18.792	394.632	09-03-2019	18:00:00	C
	Naypyitaw	Member	Male	Food and beverages	91.4	7	31.99	671.79	03-02-2019	10:19:00	C
	Yangon	Member	Female	Food and beverages	44.59	5	11.1475	234.0975	10-02-2019	15:10:00	C
	Naypyitaw	Normal	Female	Electronic accessories	85.98	8	34.392	722.232	28-02-2019	19:01:00	C
	Yangon	Member	Male	Home and lifestyle	44.34	2	4.434	88.114	27-03-2019	11:26:00	C



# » Sales Analysis



04

Calculate the total gross income generated in each city.

SELECT

```
city, ROUND(SUM(gross_income), 2) AS Gross_income
```

FROM

```
w_sales
```

GROUP BY City

city	Gross_income
Yangon	5057.16
Naypyitaw	5265.18
Mandalay	5057.03



# >> Sales Analysis

05

Find the average rating given by customers in each branch.

```
SELECT  
    Branch, ROUND(AVG(Rating), 1) AS Avg_rating  
FROM  
    w_sales  
GROUP BY Branch;
```

Branch	Avg_rating
A	7
C	7.1
B	6.8







# Sales Analysis

06

Determine the total quantity of each product line sold.

SELECT

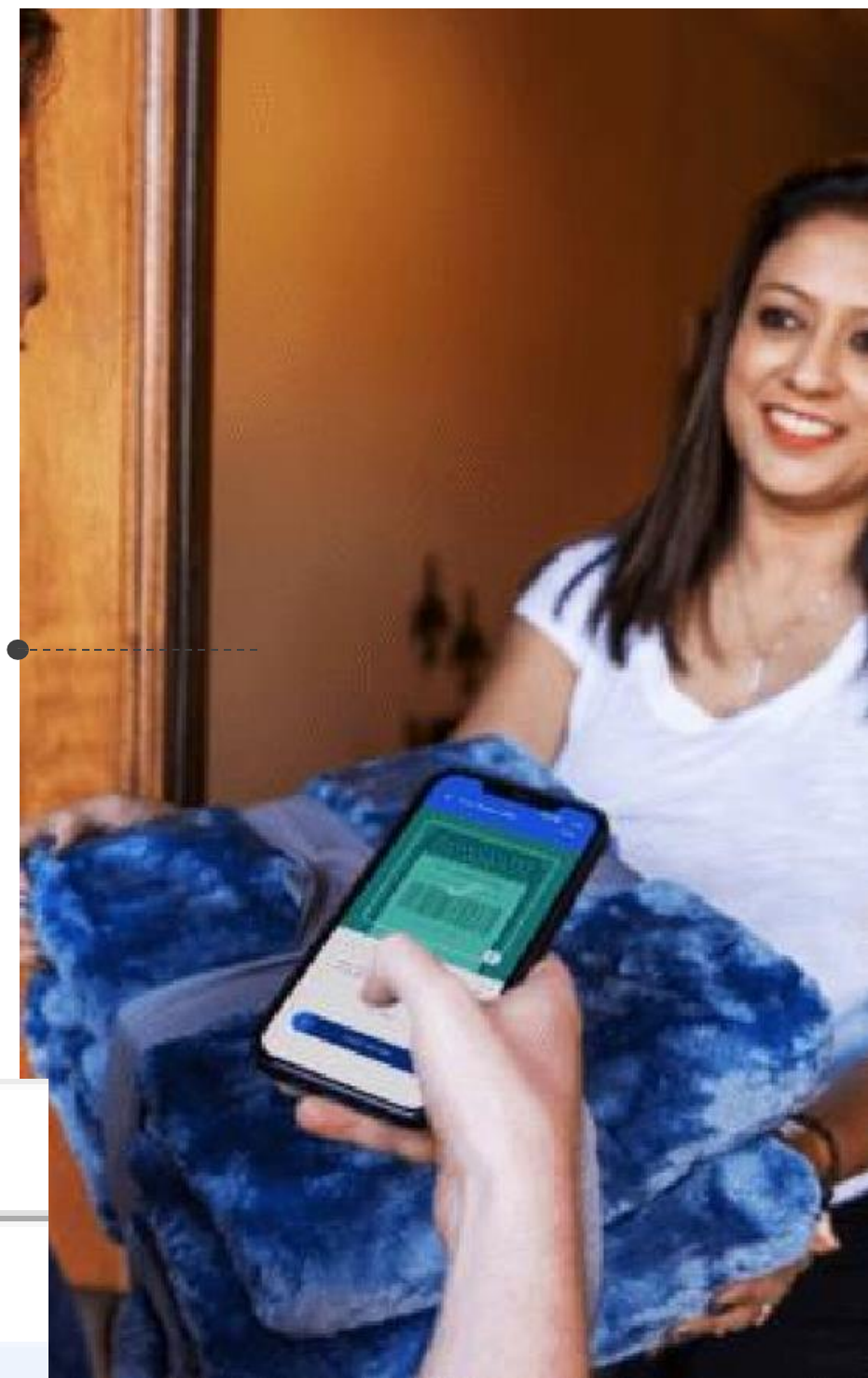
Product\_line, SUM(Quantity) AS Product\_quantity

FROM

w\_sales

GROUP BY Product\_line;

Product_line	Product_quantity
Health and beauty	854
Electronic accessories	971
Home and lifestyle	911
Sports and travel	920
Food and beverages	952
Fashion accessories	902







# Sales Analysis

07

List the top 5 products by unit price.

SELECT

Product\_line, Unit\_price

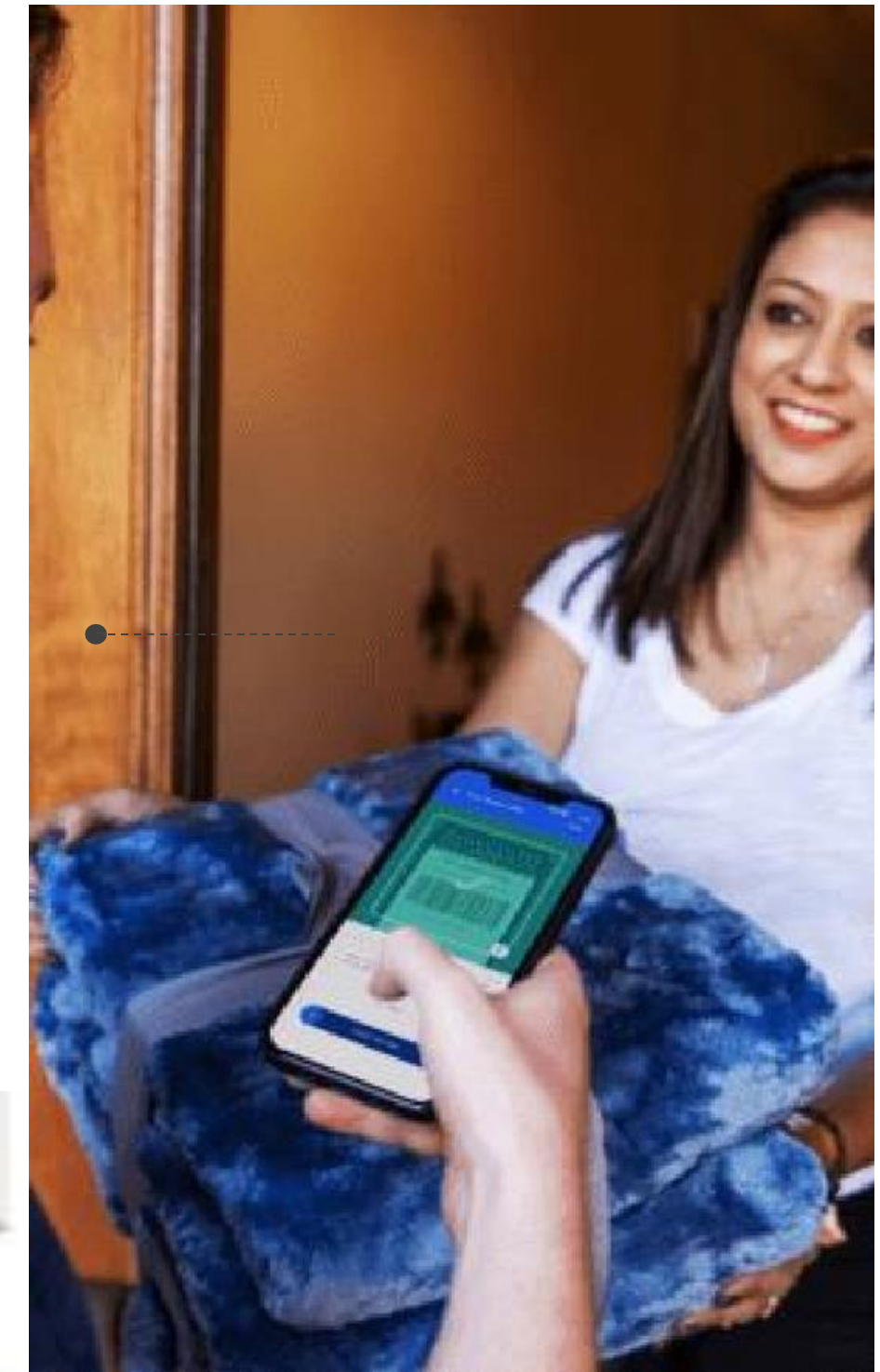
FROM

w\_sales

ORDER BY Unit\_price DESC

LIMIT 5;

Product_line	Unit_price
Health and beauty	99.96
Sports and travel	99.96
Home and lifestyle	99.92
Fashion accessories	99.89
Health and beauty	99.83







# Sales Analysis

08

Find sales transactions with a gross income greater than 30.

```
SELECT * FROM
```

```
w_sales
```

```
WHERE
```

```
gross_income > 30;
```

Invoice_ID	Branch	City	Customer_type	Gender	Product_line	Unit_price	Quantity	VAT	Total	Date_	Time_	Payment	cogs	gross_margin_percentage	gross_income
373-73-7910	A	Yangon	Normal	Male	Sports and travel	86.31	7	30.2085	634.3785	08-02-2019	10:37:00	Ewallet	604.17	4.761904762	30.2085
315-22-5665	C	Naypyitaw	Normal	Female	Home and lifestyle	73.56	10	36.78	772.38	24-02-2019	11:38:00	Ewallet	735.6	4.761904762	36.78
829-34-3910	A	Yangon	Normal	Female	Health and beauty	71.38	10	35.69	749.49	29-03-2019	19:21:00	Cash	713.8	4.761904762	35.69
149-71-6266	B	Mandalay	Member	Male	Sports and travel	78.07	9	35.1315	737.7615	28-01-2019	12:43:00	Cash	702.63	4.761904762	35.1315
640-49-2076	B	Mandalay	Normal	Male	Sports and travel	83.78	8	33.512	703.752	10-01-2019	14:49:00	Cash	670.24	4.761904762	33.512
228-96-1411	C	Naypyitaw	Member	Female	Food and beverages	98.7	8	39.48	829.08	04-03-2019	20:39:00	Cash	789.6	4.761904762	39.48
574-22-5561	C	Naypyitaw	Member	Female	Fashion accessories	82.63	10	41.315	867.615	19-03-2019	17:08:00	Ewallet	826.3	4.761904762	41.315
326-78-5178	C	Naypyitaw	Member	Male	Food and beverages	91.4	7	31.99	671.79	03-02-2019	10:19:00	Cash	639.8	4.761904762	31.99
399-46-5918	C	Naypyitaw	Normal	Female	Electronic accessories	85.98	8	34.392	722.232	28-02-2019	19:01:00	Cash	687.84	4.761904762	34.392
635-40-6220	A	Yangon	Normal	Male	Health and beauty	89.6	8	35.84	752.64	07-02-2019	11:28:00	Ewallet	716.8	4.761904762	35.84
817-48-8732	A	Yangon	Member	Female	Home and lifestyle	72.35	10	36.175	759.675	20-01-2019	15:55:00	Cash	723.5	4.761904762	36.175
232-11-3025	A	Yangon	Normal	Male	Sports and travel	78.77	10	39.385	827.085	24-01-2019	10:04:00	Cash	787.7	4.761904762	39.385
393-65-2792	C	Naypyitaw	Normal	Male	Food and beverages	89.48	10	44.74	939.54	06-01-2019	12:46:00	Credit c...	894.8	4.761904762	44.74
796-12-2025	C	Naypyitaw	Normal	Male	Fashion accessories	62.12	10	31.06	652.26	11-02-2019	16:19:00	Cash	621.2	4.761904762	31.06
287-21-9091	A	Yangon	Normal	Male	Home and lifestyle	74.67	9	33.6015	705.6315	22-01-2019	10:55:00	Ewallet	672.03	4.761904762	33.6015
829-49-1914	C	Naypyitaw	Member	Female	Food and beverages	78.31	10	39.155	822.255	05-03-2019	16:24:00	Ewallet	783.1	4.761904762	39.155
766-85-7061	B	Mandalay	Normal	Male	Health and beauty	87.87	10	43.935	922.635	29-03-2019	10:25:00	Ewallet	878.7	4.761904762	43.935
189-98-2939	C	Naypyitaw	Normal	Male	Fashion accessories	78.55	9	35.3475	742.2975	01-03-2019	13:22:00	Cash	706.95	4.761904762	35.3475
704-48-3927	A	Yangon	Member	Male	Electronic accessories	88.67	10	44.335	931.035	12-01-2019	14:50:00	Ewallet	886.7	4.761904762	44.335
861-77-0145	C	Naypyitaw	Member	Male	Electronic accessories	81.97	10	40.985	860.685	03-03-2019	14:30:00	Cash	819.7	4.761904762	40.985
237-01-6122	C	Naypyitaw	Member	Female	Home and lifestyle	80.79	9	36.3555	763.4655	01-02-2019	20:31:00	Credit c...	727.11	4.761904762	36.3555
638-60-7125	A	Yangon	Normal	Female	Electronic accessories	99.56	8	39.824	836.304	14-02-2019	17:03:00	Credit c...	796.48	4.761904762	39.824
219-22-9386	B	Mandalay	Member	Male	Sports and travel	99.96	9	44.982	944.622	09-03-2019	17:26:00	Credit c...	899.64	4.761904762	44.982





# Sales Analysis



09

Retrieve sales transactions that occurred on weekends.

SELECT

Total, DATE\_FORMAT(STR\_TO\_DATE(Date\_, '%Y-%m-%d'), '%Y-%m-%d') as Transaction\_date

FROM

w\_sales

WHERE

DAYOFWEEK(DATE\_FORMAT(STR\_TO\_DATE(Date\_, '%Y-%m-%d'), '%Y-%m-%d')) IN (1, 7);

Total	Transaction_date
506.6355	2011-03-20
457.443	2001-01-20
84.63	2011-03-20
277.137	2005-03-20
441.756	2022-03-20
184.107	2010-03-20
71.526	2007-01-20
328.755	2010-03-20
829.08	2004-03-20
32.277	2016-03-20
535.7205	2027-02-20
119.259	2010-02-20
234.0975	2010-02-20
75.054	2022-03-20
722.232	2028-02-20
93.114	2027-03-20
70.287	2010-02-20
614.943	2007-01-20
827.085	2024-01-20
652.26	2011-02-20
152.838	2005-03-20





# Sales Analysis



10

Calculate the total sales and gross income for each city and each month.

SELECT

DATE\_FORMAT(STR\_TO\_DATE(Date\_, '%Y-%m-%d'), '%Y-%m') AS month,

SUM(Total) AS Total\_Sales,

SUM(gross\_income) AS Total\_Gross\_Income

FROM w\_sales

GROUP BY month

ORDER BY month;

month	Total_Sales	Total_Gross_Income
2001-01	4745.18100000000005	225.961
2001-02	2444.53649999999997	116.406500000000001
2001-03	2634.36600000000004	125.446
2002-01	1945.50300000000002	92.64299999999999
2002-02	4140.948	197.188
2002-03	6560.3055	312.3955
2003-01	2078.1285	98.9585
2003-02	5467.9275000000002	260.3775
2003-03	4853.1735	231.1035
2004-01	1623.6885	77.3185
2004-02	2439.4965	116.166500000000001
2004-03	3894.43949999999995	185.449499999999997
2005-01	3536.68349999999996	168.4135
2005-02	3031.1295	144.339500000000002
2005-03	6230.8784999999999	296.7085
2006-01	3614.205	172.105
2006-02	2905.42350000000003	138.3535
2006-03	3092.59649999999997	147.266499999999998
2007-01	2834.24399999999997	134.964
2007-02	7228.2105000000001	344.200500000000003
2007-03	1438.2585	68.4885
2008-01	5202.7225000000001	252.602400000000002





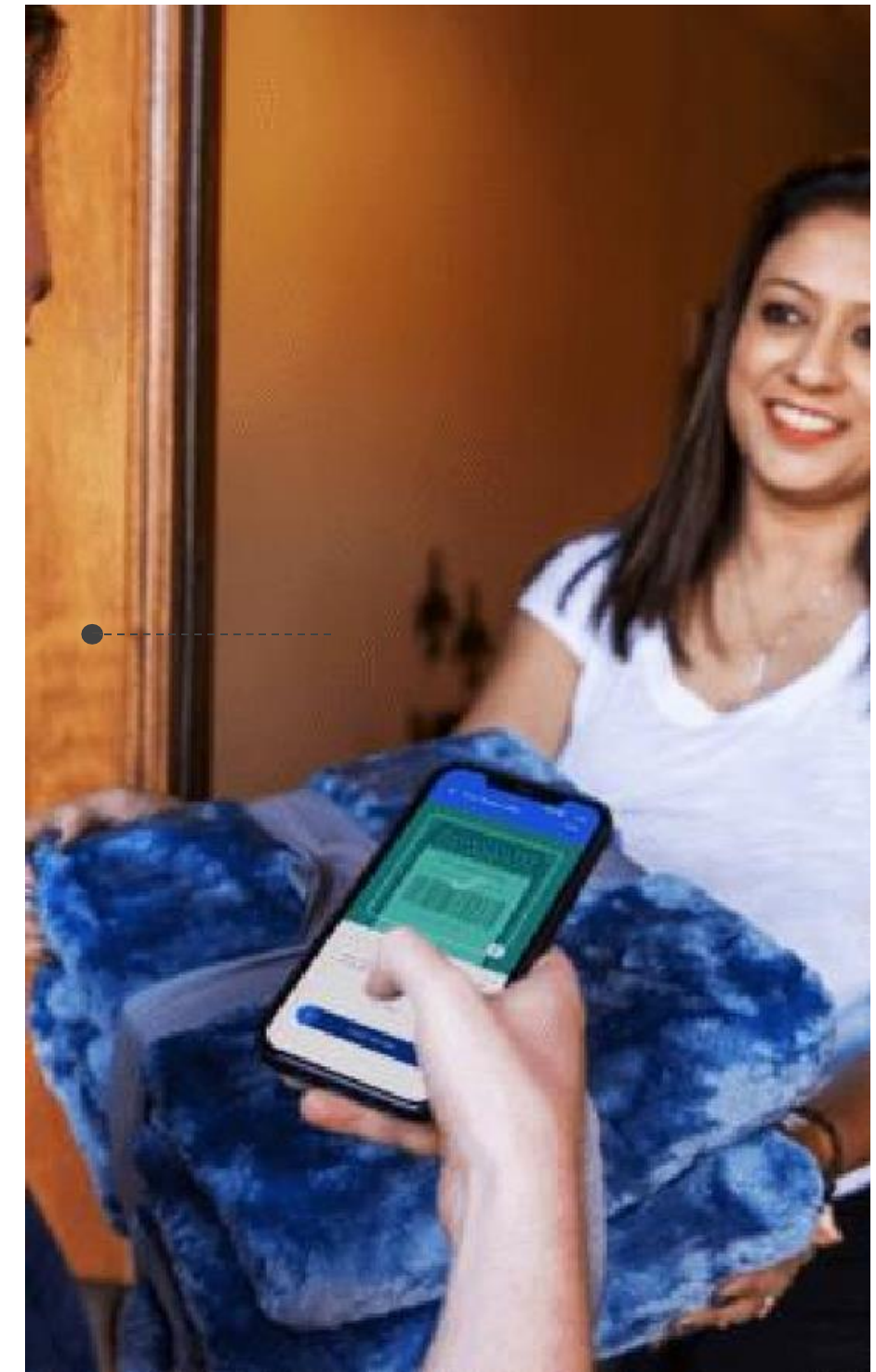
# Sales Analysis

11

Find the number of sales transactions that occurred after 6 PM.

```
select count(*) as number_of_transaction from w_sales  
where time(Time_) > '18:00:00'
```

number_of_transaction
281





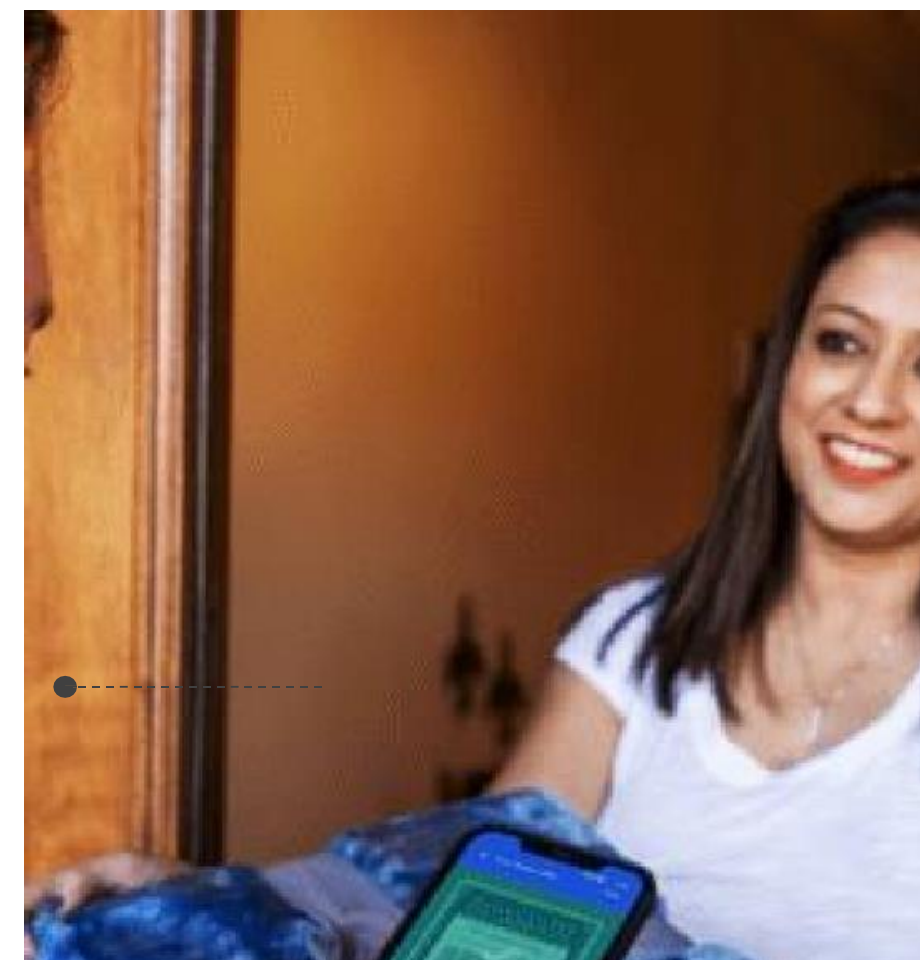


# Sales Analysis

12

List the sales transactions that have a higher total than the average total of all transactions.

```
select * from w_sales
where total > (select avg(Total) from w_sales)
```



Invoice_ID	Branch	City	Customer_type	Gender	Product_line	Unit_price	Quantity	VAT	Total	Date_	Time_	Payment	cogs	gross_margin_percentage	gross_income	Ra
750-67-8428	A	Yangon	Member	Female	Health and beauty	74.69	7	26.1415	548.9715	05-01-2019	13:08:00	Ewallet	522.83	4.761904762	26.1415	9.1
631-41-3108	A	Yangon	Normal	Male	Home and lifestyle	46.33	7	16.2155	340.5255	03-03-2019	13:23:00	Credit card	324.31	4.761904762	16.2155	7.4
123-19-1176	A	Yangon	Member	Male	Health and beauty	58.22	8	23.288	489.048	27-01-2019	20:33:00	Ewallet	465.76	4.761904762	23.288	8.4
373-73-7910	A	Yangon	Normal	Male	Sports and travel	86.31	7	30.2085	634.3785	08-02-2019	10:37:00	Ewallet	604.17	4.761904762	30.2085	5.3
699-14-3026	C	Naypyitaw	Normal	Male	Electronic accessories	85.39	7	29.8865	627.6165	25-03-2019	18:30:00	Ewallet	597.73	4.761904762	29.8865	4.1
355-53-5943	A	Yangon	Member	Female	Electronic accessories	68.84	6	20.652	433.692	25-02-2019	14:36:00	Ewallet	413.04	4.761904762	20.652	5.8
315-22-5665	C	Naypyitaw	Normal	Female	Home and lifestyle	73.56	10	36.78	772.38	24-02-2019	11:38:00	Ewallet	735.6	4.761904762	36.78	8
252-56-2699	A	Yangon	Normal	Male	Food and beverages	43.19	10	21.595	453.495	07-02-2019	16:48:00	Ewallet	431.9	4.761904762	21.595	8.2
829-34-3910	A	Yangon	Normal	Female	Health and beauty	71.38	10	35.69	749.49	29-03-2019	19:21:00	Cash	713.8	4.761904762	35.69	5.7
299-46-1805	B	Mandalay	Member	Female	Sports and travel	93.72	6	28.116	590.436	15-01-2019	16:19:00	Cash	562.32	4.761904762	28.116	4.5
656-95-9349	A	Yangon	Member	Female	Health and beauty	68.93	7	24.1255	506.6355	11-03-2019	11:03:00	Credit card	482.51	4.761904762	24.1255	4.6
765-26-6951	A	Yangon	Normal	Male	Sports and travel	72.61	6	21.783	457.443	01-01-2019	10:39:00	Credit card	435.66	4.761904762	21.783	6.9
300-71-4605	C	Naypyitaw	Member	Male	Electronic accessories	86.04	5	21.51	451.71	25-02-2019	11:24:00	Ewallet	430.2	4.761904762	21.51	4.8
227-03-5010	A	Yangon	Member	Female	Home and lifestyle	52.59	8	21.036	441.756	22-03-2019	19:20:00	Credit card	420.72	4.761904762	21.036	8.5
145-94-9061	B	Mandalay	Normal	Female	Food and beverages	88.36	5	22.09	463.89	25-01-2019	19:48:00	Cash	441.8	4.761904762	22.09	9.6
871-79-8483	B	Mandalay	Normal	Male	Fashion accessories	94.13	5	23.5325	494.1825	25-02-2019	19:39:00	Credit card	470.65	4.761904762	23.5325	4.8
149-71-6266	B	Mandalay	Member	Male	Sports and travel	78.07	9	35.1315	737.7615	28-01-2019	12:43:00	Cash	702.63	4.761904762	35.1315	4.5
640-49-2076	B	Mandalay	Normal	Male	Sports and travel	83.78	8	33.512	703.752	10-01-2019	14:49:00	Cash	670.24	4.761904762	33.512	5.1
183-56-6882	C	Naypyitaw	Member	Female	Food and beverages	99.42	4	19.884	417.564	06-02-2019	10:42:00	Ewallet	397.68	4.761904762	19.884	7.5
129-29-8530	A	Yangon	Member	Male	Sports and travel	62.62	5	15.655	328.755	10-03-2019	19:15:00	Ewallet	313.1	4.761904762	15.655	7





# Sales Analysis



13

Calculate the cumulative gross income for each branch by date.

SELECT

Branch, Date\_, SUM(gross\_income)

FROM w\_sales

GROUP BY Branch , Date ;

Branch	Date_	SUM(gross_income)
A	05-01-2019	96.405
C	08-03-2019	68.598
A	03-03-2019	38.7865000000000004
A	27-01-2019	79.7275
A	08-02-2019	80.6835
C	25-03-2019	60.8455
A	25-02-2019	86.01599999999999
C	24-02-2019	68.409
A	10-01-2019	34.833
B	20-02-2019	81.562000000000001
B	06-02-2019	51.460499999999996
B	09-03-2019	143.166
A	12-02-2019	26.5295000000000002
A	07-02-2019	98.41
A	29-03-2019	46.553
B	15-01-2019	136.303
A	11-03-2019	81.4845
A	01-01-2019	112.92
A	21-01-2019	75.797000000000001
B	11-03-2019	23.016
C	25-02-2019	23.9405





# Sales Analysis

14

Find the total cogs for each customer type in each city.

```
select City, Customer_type, round(sum(cogs),2) as Total_Cogs from w_sales
group by City, Customer_type
```

City	Customer_type	Total_Cogs
Yangon	Member	51083.31
Naypyitaw	Normal	51130.88
Yangon	Normal	50059.9
Mandalay	Member	51147.32
Mandalay	Normal	49993.32
Naypyitaw	Member	54172.65





# Insights

# WALMART



**Naypyitaw has highest total cogs value.  
Food and beverages has the maximum total sales.**

**Number of transactions occurred after 6PM is 281  
Number of quantities sold for the electronic  
accessories is the highest(971)**

**Branch C has highest average rating by  
Customers.**

**Naypyitaw city has highest total gross income.**



THANK  
YOU!

