# SQL Report

The Biz wants to analyze its meeting and client data to gain insights and make informed decisions. The Biz must identify trends, patterns, and potential risks in its financial operations. They also want to explore the possibility of introducing new financial products or services based on their analysis.

The objective of this analysis is to provide the Biz with actionable insights that can help them make informed decisions about their operations. The analysis will involve data cleaning, exploratory data analysis, and predictive modeling to identify patterns and trends in the data.

The Biz has identified the following questions as important for their analysis:

Data Modeling ER Diagram:
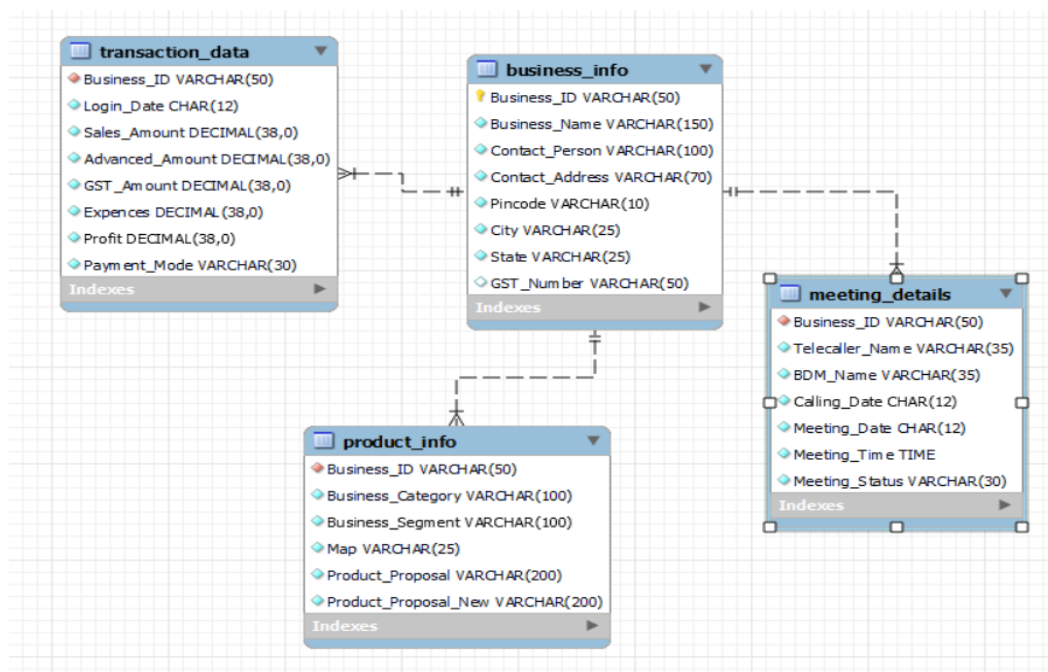
1. **What is the demographic profile of the clients and how does it vary across Cities?**

Query:

```
Select business_info.City, product_info.Business_Segment, count(*) as "Category Count"
from business_info
join product_info on business_info.Business_Id =product_info.Business_ID
group by business_info.city, product_info.Business_Segment;
```

City	Business_Segment	Category Count
Bhopal	Clinic	1354
Nagpur	Clinic	1193
Chandrapur	Clinic	493
Aurangabad	Clinic	406
Bhopal	Hospital	384
Nagpur	Hospital	383
Bhopal	Classes	348
Nagpur	Classes	273
Akola	Clinic	236
Amravati	Clinic	229
Aurangabad	Classes	211
Chandrapur	Classes	209
Aurangabad	Hospital	195
Akola	Classes	165
Bhopal	Salon	144
Chandrapur	Hospital	135
Nagpur	Manufacturers	134

Analysis:

- Bhopal has the most clinics which are 1354, followed by Nagpur having 1193 clinics, Chandrapur has 493 clinics and Aurangabad has 406 Clinics, second number in the business category is Hospital Bhopal has the greatest number of hospitals which are 384

- The business has most clients from the Medical Field.

2. How the Biz has performed over the years. Give their detailed analysis year & month-wise.

```
SELECT
    YEAR(Meeting_Date) AS year,
    COUNT(*) AS "No of meetings per Year",
    COUNT(DISTINCT CASE WHEN YEAR(transaction_data.Login_Date) = YEAR(meeting_details.Meeting_Date) THEN transaction_data.Business_ID END) AS
FROM meeting_details
LEFT JOIN transaction_data ON YEAR(meeting_details.Meeting_Date) = YEAR(transaction_data.Login_Date)
GROUP BY YEAR(Meeting_Date)
ORDER BY YEAR(Meeting_Date);
```

year	No of meetings per Year	No of sales per Year
2019	6689520	621
2023	2499270	369
2020	816308	263
2022	814200	206
2021	207014	86
2012	1	0
2018	5	0
2024	13	0

- This query checks the conversion rate per year which seems to be pretty low per year

Approach-2

```
Select product_info.Business_Segment,
    count(*) as Category_Count,
    AVG(transaction_data.Profit) as Average_Profit
from product_info
Join transaction_data on product_info.Business_Id = transaction_data.Business_Id
group by product_info.Business_Segment;
#Approach 3
Select Year(Login_Date) as year, sum(Profit) as "Profit That Year in Rs"
from transaction_data
GROUP BY
    YEAR(login_date);
```

Business_Segment	Category_Count	Average_Profit
Marketing Services	5	18786.0000
General Merchendises	9	8850.0000
Agro Product	130	7381.0154
Organization	33	7125.4545
Fire Equipment	27	6997.7778
Architect	21	6088.7143
Construction Supplies	24	6077.5000
College	126	5890.2857
Tours & Travells	42	5531.4286
Contractor	17	5434.9412
Services	30	5224.9000
School	115	5146.0957
Manufacturers	68	5145.4559
Celebration Hall	148	5131.2365
Restaurent	75	4814.6000
Hospitality	45	4812.2667
Industrial Equipment & ...	31	4804.7097
Photographer	7	4791.4286
Plumbing Materials	2	4779.0000
Enterprises	89	4643.7978

Analysis:

- It can be observed that Marketing services is the Business Segment which has given good profit overall

```
#Approach 3
Select Year(Login_Date) as year, sum(Profit) as "Profit That Year in Rs"
from transaction_data
GROUP BY
    YEAR(login_date);
```

year	Profit That Year in Rs
2019	3776817
2023	1852497
2020	1463480
2022	1104547
2021	428219

Analysis:

- Profit Generated in the year 2019 is Rs 3776817 which is the highest followed by 2023 (Rs 1852497) and the least profitable year is 2021(Rs 428213)

3 What are the most common types of clients and how do they differ in terms of usage and profitability?

```
SELECT pi.Business_Category, SUM(td.Sales_Amount) AS Total_Profit
FROM transaction_data td
JOIN product_info pi ON td.Business_Id = pi.Business_Id
GROUP BY pi.Business_Category
ORDER BY Total_Profit DESC;
```

Business_Category	Total_Profit
Hospital	5648064
Agriculture	3138860
School	1658415
Coaching Classes	1657480
Dental Clinic	1140260
Enterprises	1130788
Hotel Management College	1117740
Restaurant	1024200
Clinic	943670
Real Estate	923200

Analysis:

- Hospitals generate the highest amount of profit Rs 5648064, followed by Agriculture Rs 3138860, and Schools Rs 1658415.

4. Which types of products are most frequently used by the clients and what is the overall profitability of the client need?

```sql
Select product_info.Product_Proposal_New,
count(*) as "Product_Count",
SUM(transaction_data.profit) AS "Total_Profit in Rs"
from product_info
Join transaction_data on product_info.Business_Id = transaction_data.Business_Id
group by product_info.Product_Proposal_New;
```

Product_Proposal_New	Product_Count	Total_Profit in Rs
GMVT	2171	8188636
Social Media Management+Ads Management	113	824430
Social Media Management	114	500339
No Data	121	442782
GMVT+Social Media Management	92	436086
GMVT+Facebook	92	369129
Facebook Ad	73	365916
GMVT+Google Ad	90	345648
Managment Services	78	341256
GMVT+Facebook Ad	45	292398
GMVT+Qr Code+Blogger	77	249537
Google Ad	32	247425
GMVT+Google blogger	54	199287
Facebook Ads	27	163655

Analysis:

- The Most Profitable Product for the Business is GMVT which has generated a Total Profit of Rs 8188636 Followed by SMM and Ads Management Rs 824430

5. What are the major expenses of the Biz and how can they be reduced to improve profitability?

```sql
SELECT business_info.Business_Name,Product_info.product_Proposal_New,
       SUM(transaction_data.Expences) AS Total_Expenses
FROM business_info
JOIN transaction_data ON business_info.Business_Id = transaction_data.Business_Id
JOIN Product_info ON business_info.Business_Id = product_info.Business_Id
WHERE business_info.Business_Id = transaction_data.Business_Id
GROUP BY business_info.Business_Name,Product_info.product_Proposal_New;
```

Business_Name	product_Proposal_New	Total_Expenses
Farme	Social Media Managem...	1897280
Center Point Hospital	Managment Services	679072
Ayushman Hospital	GMVT	388920
Maya Center Of Learning	Facebook	305200
Mahalaxmi Devlopers	Facebook Ad	260400
Lotus Garden And Celebration	GMVT+Facebook Ad	260190
Dr. Sushama P Khandagale Wome...	GMVT	247800
Gandhi Nursing Home	Facebook Ads	247800
7StarUpvc Windoors Manufacturer	GMVT	237888
Diligent Academy	GMVT	237888
Indian Institute Of Fire Engineering	No Data	230160
Kidney Care Hospital And Researc...	GMVT	214760
Central India Public School	No Data	212726
Akanksha Marriage Garden	GMVT	210000
Maitreya Developers	GMVT+Social Media M...	208250
Adarsh Engineering Work	Website	200718
Farme	Website Technology S...	189728
Datta Enterprises Or Flip Interior	GMVT	185850

Analysis:

- Total Expenses are most for the business name Frame which is Rs 18,97,280

6. What is the client portfolio and how does it vary across different purposes and client segments?

```sql
Select business_info.Business_Name, product_info.Business_Category, product_info.product_proposal_New
from business_info
join product_info on business_info.Business_Id =product_info.Business_Id
join transaction_data on business_info.Business_Id = transaction_data.Business_Id
where business_info.Business_Id = transaction_data.Business_Id
group by business_info.Business_Name, product_info.Business_Category,product_info.product_proposal_New;
```

Business_Name	Business_Segment	product_proposal_New
Azkaban The Gaming Alley	Game Zone	Whatsapp Software
Bajaj Dental Clinic	Clinic	Whatsapp Software
Brighten Arya Lifestyle Pvt Ltd	Home and Living	Whatsapp Software
Civil Hub Institute	College	WhatsApp software
Cadence Medical Square	No Data	Whatsapp Software
Gateforum Engineering Success	No Data	Whatsapp Software
IidsInternational Institute Of Design ...	Home and Living	Whatsapp Software
Legacy Venture	No Data	Whatsapp Software
Cadd Center / Livewire	Classes	Whatsapp Sofrware
Hotel Jasnagara	Hospitality	Whatsapp Message
M.R. Furniture Mall	Furniture Store	Whatsapp Massage
Dwarka Water Park	Water Park	Whats App Software
Dr Manish Juneja	Clinic	Website+Google Management F...
Adarsh Naturals	Manufacturers	Website+GMVT
Farme	Agro Product	Website Technology Shift
Adarsh Engineering Work	Services	Website
Adarsh Engineering Work	Manufacturers	Website

Analysis:

- Azkaban Gaming Alley which is categorized as a Gaming zone has bought Whatsapp Software

7. How can the Biz improve its customer service and satisfaction levels?

```sql
# 7. How can the Biz improve its customer service and satisfaction levels?
SELECT business_info.Business_Id, Business_Info.Business_Name, COUNT(transaction_data.business_id) AS Total_Transactions
FROM Business_Info
JOIN transaction_data ON Business_Info.Business_ID = transaction_data.Business_ID
GROUP BY Business_Info.Business_ID, Business_Info.Business_Name
HAVING Total_Transactions >= 2
LIMIT 0, 1000;
```

Business_Id	Business_Name	Total_Transactions
MCND6524	Maitreya Developers	12
FANH3953	Farme	11
PJAD8370	Pallavi Jewellers	11
CHND1988	Center Point Hospital	8
HPAN4922	Holy Child English School	6
NHNS7546	Nibe College Of Hotel Manage…	6
SMNV10921	7StarUpvc Windoors Manufact…	6
UINM12225	Utkarsh Paramedical Institute	6
ACBM225	Akanksha Marriage Garden	5
AHND679	Ayushman Hospital	5

Analysis:

- It can be seen that several Businesses have returned to avail the services many times business Maitreya Developers has a good relationship we can consider understanding the services provided by us and how we can maintain similar relationships with other clients as well

8. Can the Biz introduce new products or services to attract more customers and increase profitability?

```
SELECT Business_Segment, COUNT(DISTINCT Product_Proposal_New) AS Product_Types
FROM Product_Info
GROUP BY Business_Segment
ORDER BY Product_Types desc;
```

Business_Segment	Product_Types
Clinic	89
Classes	62
Hospital	60
Builders and Developers	38
School	32
Hardware Shop	30
Makeup Studio	29
Real Estate	29
Salon	29
Restaurant	27

Analysis:

- Businesses should introduce new products for business segments Clinic Classes and Hospital

9. What is the Telle caller's role in sales?

```
#Before Sales
Select meeting_details.Telecaller_Name, count(*) as "No Of calls Made"
from meeting_details
group by meeting_details.Telecaller_Name;
```

Telecaller_Name	No Of calls Made
Gayatri	3235
Nisha	2096
Mayuri	1890
Mahima	1199
Komal	1148
Shital	911
Vishakha	841
Neelam	691
Monika	621
Shreya	608
Muskan	470
Apeksha	465
Dikshita	460
Sunidhi	446
Varsha	427

Analysis:

- Gayatri Has made the greatest number of calls till now counting up to 3225

```
# contribution in Profit
SELECT meeting_details.Telecaller_Name, SUM(transaction_data.profit) AS Total_Profit
FROM meeting_details
JOIN transaction_data ON meeting_details.Business_Id = transaction_data.Business_Id
GROUP BY meeting_details.Telecaller_Name;
```

Telecaller_Name	Total_Profit
Mayuri	2124881
Shital	2112395
Gayatri	1402122
Monika	921224
Gaurav	757331
Nisha	620478
Jitesh	601883
Dhupendra	596615
Abhishek	558636
Sunidhi	461801
Mahima	451341
Vishakha	444510
Dikshita	414257
Shreya	383072
Pranita	376806

Analysis:

- Mayuri Tops the list in terms of the profit she has generated Rs 2124881 Profit for the company to date

10. What is BDM's performance with various segments of clients?

```
# Before_Sales
Select meeting_details.BDM_Name, product_info.business_category,
    count(*) as "No of Meetings",
    SUM(Profit) AS "Total Profit"
from meeting_details
Join product_info on meeting_details.Business_Id = product_info.Business_Id
Join transaction_data On meeting_details.Business_Id=transaction_data.Business_Id
group by meeting_details.BDM_Name, product_info.business_category;
```

BDM_Name	business_category	No of Meetings	Total Profit
Vikrant	Agriculture	364	2688606
Prateek	Agriculture	247	1830780
Shreya	Agriculture	242	1788864
Dheeraj	Hospital	351	1536900
Himanshu	Agriculture	121	894432
Dupendra	Agriculture	121	894432
Aniket	Agriculture	121	894432
Praful	Agriculture	121	894432
Gaurav	Hospital	130	778635
Joshana	Real Estate	101	747000
Shital	Hotel Management College	72	670644
Abhishek	Hotel Management College	72	670644

Analysis:

- Vikrant has worked on the greatest number of meetings until now which counts to 364 meetings generating Rs 26,88,606 Toping in terms of both the meetings and generated profit as well

11. How many businesses retain with same or different products?

```
SELECT COUNT(*) AS "Number of Businesses Retaining Products"
FROM (
    SELECT Business_ID, COUNT(DISTINCT Product_Proposal) AS Num_Products
    FROM product_info
    GROUP BY Business_ID
) AS Business_Products
WHERE Num_Products > 1;
```

Number of Businesses Retaining Products
1259

Analysis:

- The number of Businesses retaining the same product is 1259

12 Which is best Selling Product Category?

```
SELECT product_info.Product_Proposal, product_info.Business_Category, COUNT(*) AS Product_Sales_Count
FROM transaction_data
JOIN product_info  ON transaction_data.Business_Id = product_info.Business_Id
GROUP BY product_info.Product_Proposal, product_info.Business_Category
ORDER BY Product_Sales_Count DESC
LIMIT 1;
```

Product_Proposal	Business_Category	Product_Sales_Count
GMVT	Hospital	187

Analysis:

- GMVT is top selling product

13. What is the popular selling amount?

```
select Sales_Amount, count(*) as "No_of_count"
from Transaction_data
group by Sales_Amount
order by No_of_count DESC
Limit 1 ;
Select count(*) from product_info;
```

Sales_Amount	No_of_count
10000	232

Analysis:

- The most selling amount is Rs 10,000