DATA ANALYSIS CASE STUDIES:

You've been provided with a few csv files. Kindly, go through them and perform analysis on the same. You're free to use whichever data analysis tool you're comfortable with(few ex: MS Excel, Python, Tableau etc.)

1. Students Adaptability to Online Learning:

- Examine how well students adapt to the online environment in terms of their ability to persist and earn strong grades in online courses relative to their ability to do so in face-to-face courses.
- Government vs Non-Government Institutions which among the two of them have offered a smooth transition from traditional mode of education to online mode?
- Do you think location and load shedding plays an important role in a student's adaptability to an online learning environment ? How so, provide concrete examples.
- Visualize the data distribution for each variables.s
- Build a hypothesis for comparative analysis. Show which hypothesis is suited best for the particular dataset.

Link to the Dataset : ⊞ students_adaptability

2. Employee Database:

- What Statistical tools would you implement to perform analysis on the following data? Formulate and provide conclusions/analysis.
- What are important variables in order to determine the key performance of an employee?
- Formulate a complete analysis.
- Build a hypothesis for comparative analysis. Provide conclusive results.
- How would you handle the missing values in the data?

Link to the Dataset : ⊞ Employee

SQL Case Studies:

1.

Table: customer

Customer ID	C.Name	City	Grade	Salesman_id
3002	Shreya	Delhi	100	5001
3007	Suresh	Delhi	200	5001
3005	Deeksha	Bangalore	200	5002
3008	Ragini	Mumbai	300	5002
3004	Anshul	Hyderabad	300	5006
3009	Tisha	Pune	100	5003

Table : Salesman

Salesman_id	S.Name	City	Commission
5002	Rahul	Bangalore	0.15
5005	Manav	Hyderabad	0.13
5006	Akash	Hyderabad	0.11
5007	Riya	Delhi	0.12
5003	Mayank	Pune	0.13

Queries:
- From the following tables, write a SQL query to find the salespersons and customers who live in the same city. Return customer name, salesperson name and salesperson city.
- write a SQL query to find those salespeople who generated orders for their customers but not located in the same city. Return ord_no, cust_name, customer_id (orders table), salesman_id (orders table).
- Create a view tagging which customers are handled by which sales person. Display Customer name, Salesman name.

2. Extract the leading two accounts having the highest total distinctive customers based on every month.

Table Name: Customers

	Account ID	Date	Customer ID
1	1	2022-01-02	10
2	1	2022-01-27	20
3	2	2022-01-01	30
4	2	2022-01-21	40
5	2	2022-01-21	30
6	2	2022-01-01	50
7	3	2022-01-20	40
8	1	2022-01-04	50
9	3	2022-01-20	45

3. Write an SQL query to display:
- Employee having the highest salary
- Department having the highest total salary
- Employees who either earn the highest salary or the lowest salary in each department from the employee table.

Table Name: EMPLOYEE

	emp_id[PK]	emp_name	dept_name	salary
1	11	A	Admin	2000

2	14	B	Admin	4000
3	15	C	Admin	4000
4	65	D	Admin	5000
5	76	E	Finance	5000
6	23	F	Finance	5500
7	45	G	Finance	6500
8	72	H	Finance	6500
9	17	I	HR	3000
10	87	J	HR	3000
11	99	K	HR	3000
12	123	L	HR	3500
13	321	M	HR	7000
14	115	N	HR	8000
15	93	O	IT	4000
16	49	P	IT	4500
17	90	Q	IT	6000
18	95	R	IT	6500
19	117	T	IT	7000
20	111	S	IT	8000
21	213	U	IT	8000
22	223	V	IT	8000
23	342	W	IT	10000
24	234	X	IT	11000

4.

Table1 Name:Source

Id	Name
1	A
2	B
3	C
4	D

Table2 Name: Target

Id	Name
1	A
2	B
4	X
5	F

Display the below Output Table by writing queries using the above two tables(Table1 and Table2).

Table Name: Output:

Id	Comment
3	New in Source
5	New in Target
4	Mismatch

5. What will be the result of the following query:

```
SELECT P.First_Name, P.Last_Name
FROM Persons AS P
LEFT OUTER JOIN
Vaccinations AS V
ON P.Email = V.Recipient
WHERE V.Comments IS NULL;
```

6. How can a supermarket(Ex:Big Bazar), use its customer data(Ex: Name, Phone Number, Items Purchased,etc) to provide better services to its customers and improve corporate performance?