

PROJECT: TABLEAU DATA ANALYSIS: SALES_INSIGHTS

“Data may disappoint, but it never lies.”

Step 1 : Problem Statement

Step 2 : Data Discovery

Step 3 : Data Analysis Using SQL

Step 4 : Data Cleaning & ETL in Tableau

Step 5 : Build tableau Dashboard

Step 6 : Feedback From Stockholder & Profit Analysis

Step 1 : Problem Statement

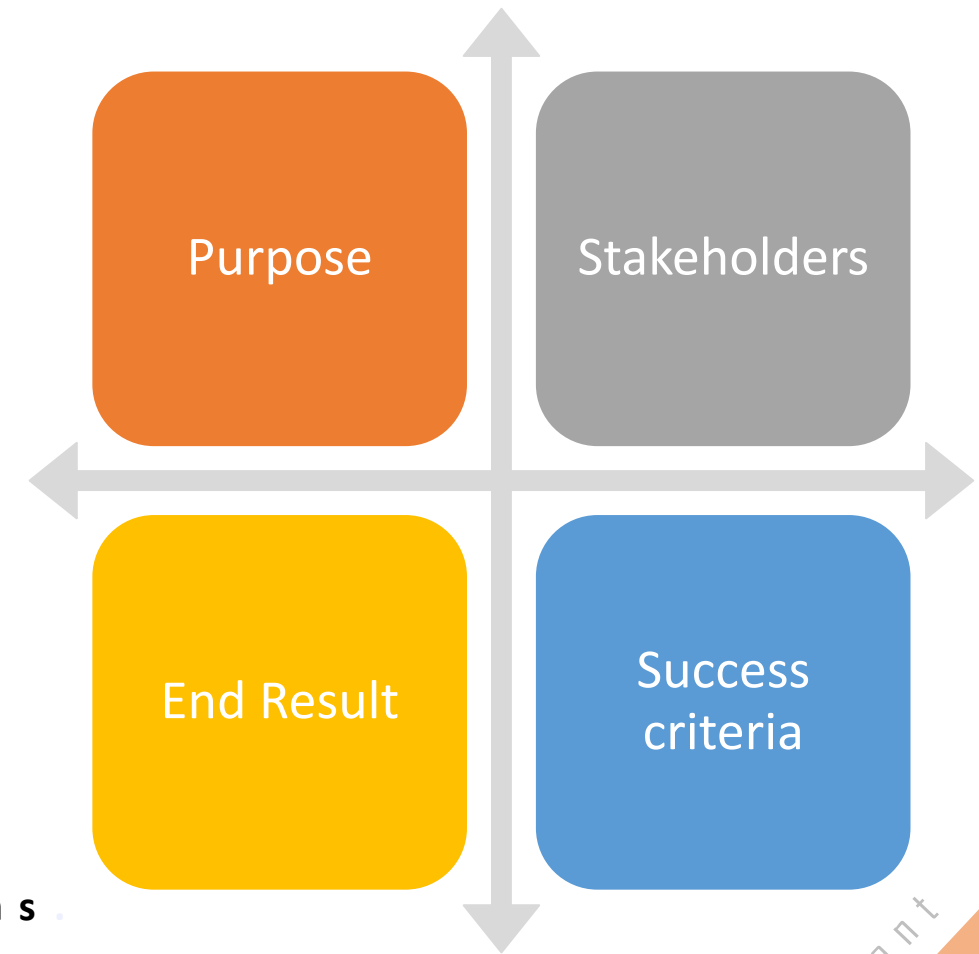
1. Problem Statement:

- Revenue Breakdown by Cities?
- Revenue Breakdown by Year & months?
- Top 5 Customer by Revenue & sales Quantity?
- Top 5 product by Revenue Number?
- Visualization better than Spreadsheets!

Step 2: Data Discovery

AIMS GRID

Analytics and Informatics Management Systems .

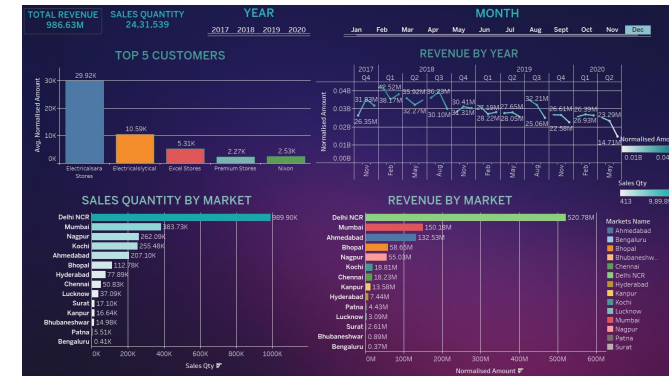


Mr. Sandesh Sawant

SALES MGMT
SYSTEM



OLTP – Online Transaction Processing



SQL Shell +
Workbench +
Server Download Steps



<https://youtu.be/hbNRULz6GFA?si=9LR644eQ1Mv6VqdM>

Mr. Sandesh Sawant

Step 3 : Data Analysis Using SQL

DATA ANALYSIS USING SQL

1. Show all customer records

```
SELECT * FROM customers;
```

2. Show total number of customers

```
SELECT count(*) FROM customers;
```

3. Show transactions for Chennai market (market code for chennai is Mark001)

```
SELECT * FROM transactions where market_code='Mark001';
```

4. Show distinct product codes that were sold in chennai

```
SELECT distinct product_code FROM transactions where market_code='Mark001';
```

5. Show transactions where currency is US dollars

```
SELECT * from transactions where currency="USD"
```

6. Show transactions in 2020 join by date table

```
SELECT transactions.*, date.* FROM transactions INNER JOIN date ON transactions.order_date=date.date where date.year=2020;
```

7. Show total revenue in year 2020,

```
SELECT SUM(transactions.sales_amount) FROM transactions INNER JOIN date ON transactions.order_date=date.date where date.year=2020 and transactions.currency="INR\r" or transactions.currency="USD\r";
```

8. Show total revenue in year 2020, January Month,

```
SELECT SUM(transactions.sales_amount) FROM transactions INNER JOIN date ON transactions.order_date=date.date where date.year=2020 and and date.month_name="January" and (transactions.currency="INR\r" or transactions.currency="USD\r");
```

9. Show total revenue in year 2020 in Chennai

```
SELECT SUM(transactions.sales_amount) FROM transactions INNER JOIN date ON transactions.order_date=date.date where date.year=2020 and transactions.market_code="Mark001";
```


SCHEMAS

Filter objects

- ▶ sakila
- ▼ sales
 - ▶ Tables
 - ▶ customers
 - ▶ date
 - ▶ markets
 - ▶ products
 - ▶ transactions
 - ▶ Views
 - ▶ Stored Procedures
 - ▶ Functions
- ▶ sys
- ▶ world

Administration Schemas

Information

Schema: sales

Limit to 1000 rows

```
1 • SELECT *
2 FROM sales.customers;
3
4
```

Result Grid

| | customer_code | customer_name | customer_type |
|---|---------------|-------------------------|----------------|
| ▶ | Cus001 | Surge Stores | Brick & Mortar |
| | Cus002 | Nomad Stores | Brick & Mortar |
| | Cus003 | Excel Stores | Brick & Mortar |
| | Cus004 | Surface Stores | Brick & Mortar |
| | Cus005 | Premium Stores | Brick & Mortar |
| | Cus006 | Electricalsara Stores | Brick & Mortar |
| | Cus007 | Info Stores | Brick & Mortar |
| | Cus008 | Acclaimed Stores | Brick & Mortar |
| | Cus009 | Electricalsquipo Stores | Brick & Mortar |
| | Cus010 | Atlas Stores | Brick & Mortar |
| | Cus011 | Flawless Stores | Brick & Mortar |
| | Cus012 | Integration Stores | Brick & Mortar |
| | Cus013 | Unity Stores | Brick & Mortar |
| | Cus014 | Forward Stores | Brick & Mortar |
| | Cus015 | Electricalsbea Stores | Brick & Mortar |
| | Cus016 | Logic Stores | Brick & Mortar |
| | Cus017 | Epic Stores | Brick & Mortar |
| | Cus018 | Electricalslance Stores | Brick & Mortar |

customers 22 x

Apply Rev

Result Grid
Form Editor
Field Types
Query Stats
Execution Plan

Navigation

SCHEMAS

Filter objects

▶ sakila

▶ sales

▶ sys

▶ world

Administration

Schemas

Information

Schema: sales

Object Info

Session

customers

date

markets

products

transactions

Limit to 1000 rows

1

2

3

4

SELECT *

FROM sales.customers;

Result Grid

Filter Rows:

Edit:

Export/Import:

Wrap Cell Content:

| customer_code | customer_name | customer_type |
|---------------|-------------------------|----------------|
| Cus001 | Surge Stores | Brick & Mortar |
| Cus002 | Nomad Stores | Brick & Mortar |
| Cus003 | Excel Stores | Brick & Mortar |
| Cus004 | Surface Stores | Brick & Mortar |
| Cus005 | Premium Stores | Brick & Mortar |
| Cus006 | Electricalsara Stores | Brick & Mortar |
| Cus007 | Info Stores | Brick & Mortar |
| Cus008 | Acclaimed Stores | Brick & Mortar |
| Cus009 | Electricalsquipo Stores | Brick & Mortar |
| Cus010 | Atlas Stores | Brick & Mortar |
| Cus011 | Flawless Stores | Brick & Mortar |
| Cus012 | Integration Stores | Brick & Mortar |
| Cus013 | Unity Stores | Brick & Mortar |
| Cus014 | Forward Stores | Brick & Mortar |
| Cus015 | Electricalsbea Stores | Brick & Mortar |
| Cus016 | Logic Stores | Brick & Mortar |
| Cus017 | Epic Stores | Brick & Mortar |
| Cus018 | Electricalslance Stores | Brick & Mortar |

customers 22

Apply

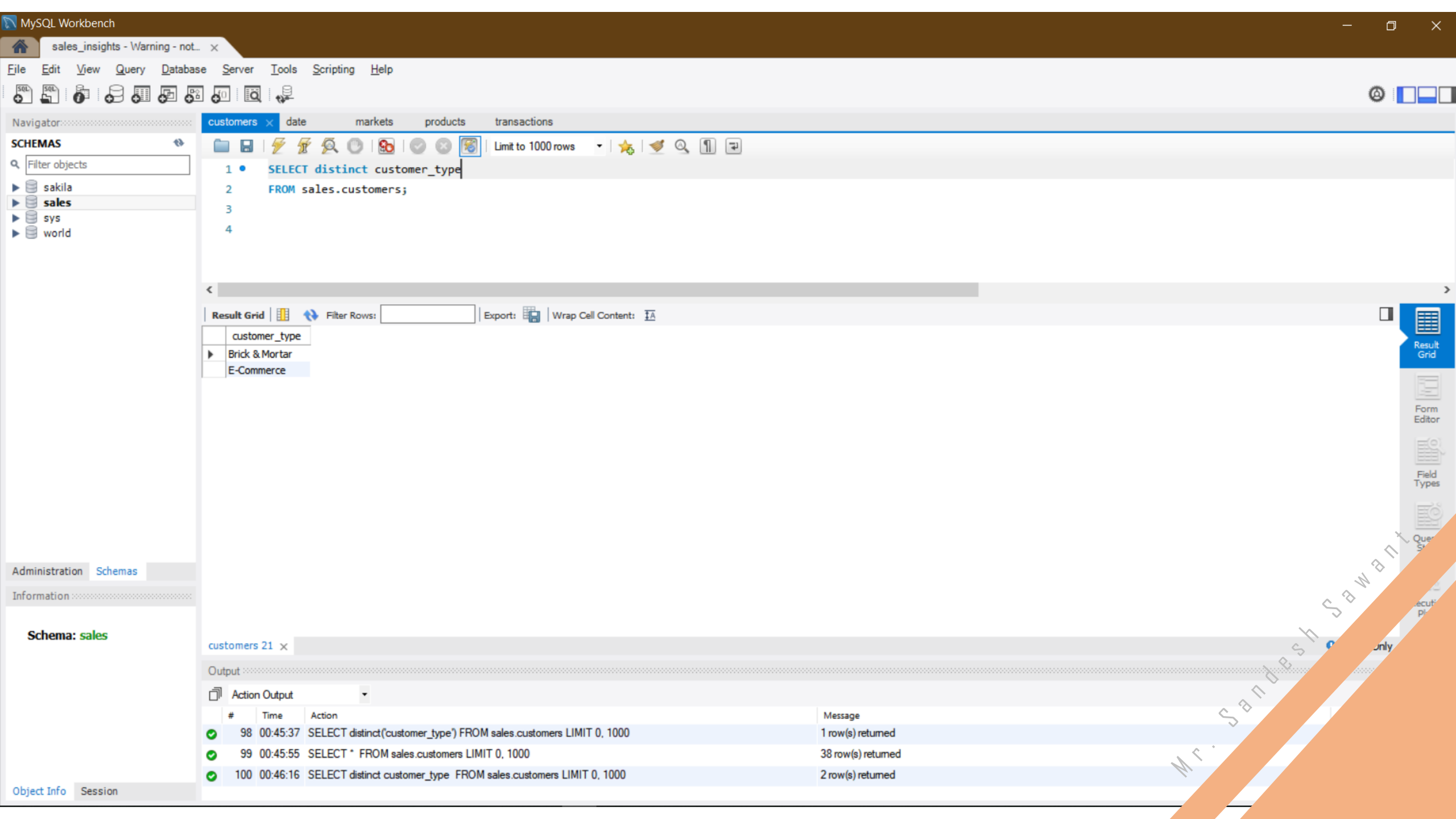
Revert

Output

Action Output

| # | Time | Action | Message | Duration |
|-----|----------|------------------------------------------------------------------|--------------------|-----------|
| 99 | 00:45:55 | SELECT * FROM sales.customers LIMIT 0, 1000 | 38 row(s) returned | 0.000 sec |
| 100 | 00:46:16 | SELECT distinct customer_type FROM sales.customers LIMIT 0, 1000 | 2 row(s) returned | 0.000 sec |
| 101 | 00:54:00 | SELECT * FROM sales.customers LIMIT 0, 1000 | 38 row(s) returned | 0.000 sec |

Mr. Sandesh Pawar



Step 4 : Data Cleaning & ETL in Tableau

Sort by Name (a-z) ▾

Connect

Search for Data

Tableau Server

To a File

Microsoft Excel

Text file

JSON file

Microsoft Access

PDF file

Spatial file

Statistical file

More...

To a Server

Vertica

Web Data Connector (de...)

Other Databases (JDBC)

Other Databases (ODBC)

More... >

Saved Data Sources

Sample - Superstore

World Indicators

Search

Installed Connectors (71)

Action Vector

Alibaba AnalyticDB for MySQL

Alibaba Data Lake Analytics

Alibaba MaxCompute

Amazon Athena

Amazon Aurora for MySQL

Amazon EMR Hadoop Hive

Amazon Redshift

Anaplan (deprecated)

Apache Drill

Azure Data Lake Storage Gen2

Azure SQL Database

Azure Synapse Analytics

Box

Cloudera Hadoop

Customer Data Platform (deprecated)

Databricks

Denodo (deprecated)

Dremio

Dropbox

Esri

Exasol

Firebird 3

Google Analytics

Google BigQuery

Google BigQuery (JDBC)

Presto

MySQL

General

Initial SQL

Server

localhost

Port

3306

Database

sales

Username

root

Password

☐ Require SSL

Sign In

OneDrive and SharePoint Online

Oracle

Oracle Eloqua (deprecated)

Oracle Essbase

Pivotal Greenplum Database

PostgreSQL

Other Databases (JDBC)

Other Databases (ODBC)

Additional Connectors (33) ⓘ

Action JDBC by Action

Action ODBC by Action

Agiloft by Agiloft

Altinity Connector for ClickHouse by Altinity Inc

Amazon DocumentDB by Amazon

Amazon S3 by Tableau

BI Connector by Guidanz Inc

Couchbase Analytics by Couchbase Analytics

Data Virtuality JDBC by Data Virtuality

Denodo JDBC by Denodo Technologies

Exasol JDBC by Exasol

Firebolt by Firebolt Analytics Inc

Google Analytics 4 by Tableau

Incorta by Incorta

Jethro ODBC by Jethro Data

Kyligence Connector by Kyligence

MarkLogic by MarkLogic

Ocient JDBC by Ocient

OpenSearch by Amazon

Oracle NetSuite by Tableau

Palantir Foundry by Palantir

Qubole Hive by Qubole

Rockset by Rockset, Inc.

Salesforce Marketing Cloud by Tableau

SAP SuccessFactors by Tableau

ServiceNow by Tableau

Sharepoint Lists (JDBC) by Tableau

SingleStoreDB JDBC by Singlestore

Splunk by Tableau

SQream DB by SQream Technologies

Starburst Enterprise by Starburst

Stratio Crossdata by Stratio BD

Yellowbrick by Yellowbrick Data

Mr. Sandesh Sawant

Home | Back | Forward | Refresh | Save | Undo | Redo

Connections [Add](#)

localhost
MySQL

Database

sales

Table

- customers
- date
- markets
- products
- transactions

New Custom SQL

New Union

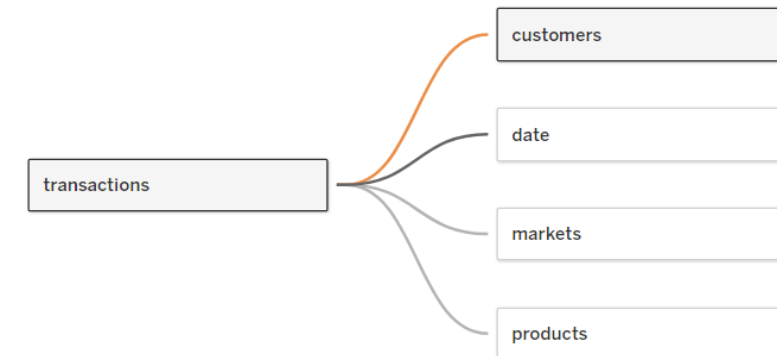
New Table Extension

transactions+ (sales)

Connection

☒ Live☐ Extract

Filters

0 | [Add](#)

transactio... — customers

17

rows

How do relationships differ from joins? [Learn more](#)

transactions Operator customers

Abc Customer Code = Abc Customer Code

⊕ Add more fields

> Performance Options

| Abc markets Markets Code | Abc markets Markets Name | Abc markets Zone |
|--------------------------------|--------------------------------|------------------------|
| Mark001 | Chennai | South |
| Mark002 | Mumbai | Central |
| Mark003 | Ahmedabad | North |
| Mark004 | Delhi NCR | North |
| Mark005 | Kanpur | North |
| Mark006 | Bengaluru | South |
| Mark007 | Bhopal | Central |

STAR SCHEMA

A multi-dimensional data model used to organize data in a database so that it is easy to understand and analyze.



Connections

Add

localhost
MySQL

Database

sales

Table

- customers
- date
- markets
- products
- transactions

New Custom SQL

New Union

New Table Extension

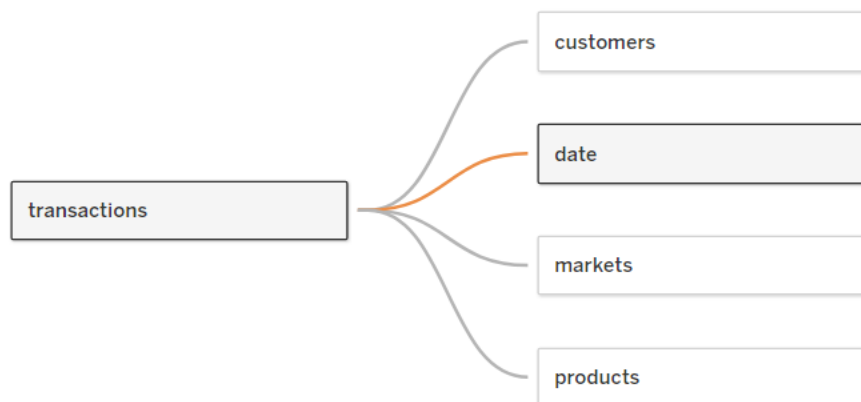
transactions+ (sales)

Connection

☒ Live☐ Extract

Filters

0 | Add



transactio... — date

17 → rows

How do relationships differ from joins? [Learn more](#)

transactions

Operator

date

Order Date

=

Date

⊕ Add more fields

> Performance Options

| Abc markets | Abc markets | Abc markets |
|----------------|----------------|----------------|
| Markets Code | Markets Name | Zone |
| Mark001 | Chennai | South |
| Mark002 | Mumbai | Central |
| Mark003 | Ahmedabad | North |
| Mark004 | Delhi NCR | North |
| Mark005 | Kanpur | North |
| Mark006 | Bengaluru | South |
| Mark007 | Bhopal | Central |





Connections

Add

localhost
MySQL

Database

sales

Table

- customers
- date
- markets
- products
- transactions

New Custom SQL

New Union

New Table Extension

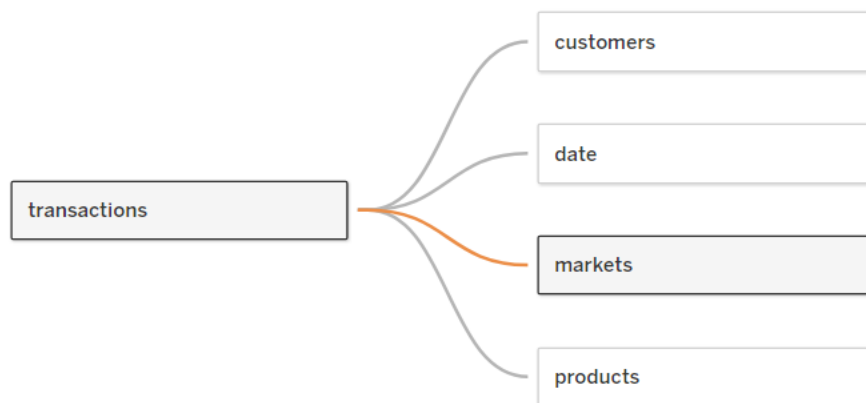
transactions+ (sales)

Connection

☒ Live☐ Extract

Filters

0 | Add



transacio... — markets

17 → rows

How do relationships differ from joins? [Learn more](#)

transactions

Operator

markets

Abc Market Code

=







Abc Markets Code

⊕ Add more fields

> Performance Options

| Abc markets Markets Code | Abc markets Markets Name | Abc markets Zone |
|-----------------------------|-----------------------------|---------------------|
| Mark001 | Chennai | South |
| Mark002 | Mumbai | Central |
| Mark003 | Ahmedabad | North |
| Mark004 | Delhi NCR | North |
| Mark005 | Kanpur | North |
| Mark006 | Bengaluru | South |
| Mark007 | Bhopal | Central |





Connections [Add](#)

localhost
MySQL

Database

sales

Table

customers

date

markets

products

transactions




New Custom SQL

New Union

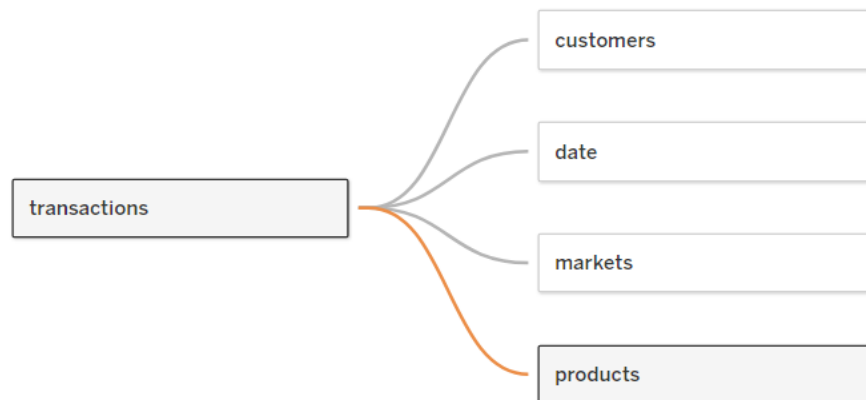
New Table Extension

Data Source

Sheet 1



transactions+ (sales)

Connection
☒ Live ☐ ExtractFilters
0 | [Add](#)

transacio... — products

17 → rows  How do relationships differ from joins? [Learn more](#)

transactions


Operator

products

Abc Product Code

=

Abc Product Code (P

 Add more fields

> Performance Options

| Abc markets | Abc markets | Abc markets |
|--------------|--------------|-------------|
| Markets Code | Markets Name | Zone |
| Mark001 | Chennai | South |
| Mark002 | Mumbai | Central |
| Mark003 | Ahmedabad | North |
| Mark004 | Delhi NCR | North |
| Mark005 | Kanpur | North |
| Mark006 | Bengaluru | South |
| Mark007 | Bhopal | Central |

Mr. Sandesh Sawant

New Data Source Ctrl+D

Refresh Data Source

Duplicate Data Source

Paste Data as Connection Ctrl+V

Paste Data as Data Source

Export Data to CSV

Close Data Source

Edit Data Source Filters...

Convert to Custom SQL

Join Null Values to Null Values

Maintain Character Case (Excel)

localhost

localhost

markets

products

transactions

New Custom SQL

New Union

New Table Extension

transactions+ (sales)

Connection
☒ Live ☐ Extract

Filters
2 | Edit

transactions is made of 1 table. ⓘ

transactions

transactions

8 fields 148670 rows

1000 → rows

| | | | | | | | | | |
|---------------|------------------|------------------|------------------|--------------|------------------|----------------|-------------------|----------------|--|
| Table Details | Abc transactions | Abc transactions | Abc transactions | transactions | Abc transactions | # transactions | =# Calculation | # transactions | |
| | Currency | Customer Code | Market Code | Order Date | Product Code | Sales Amount | Normalised Amount | Sales Qty | |
| | USD | Cus005 | Mark004 | 22-11-2017 | Prod003 | 250.00 | 20,750.00 | 36 | |
| | USD | Cus005 | Mark004 | 20-11-2017 | Prod003 | 500.00 | 41,500.00 | 59 | |
| | INR | Cus007 | Mark004 | 20-04-2020 | Prod005 | 102.00 | 102.00 | 1 | |
| | INR | Cus007 | Mark004 | 03-08-2018 | Prod005 | 157.00 | 157.00 | 1 | |
| | INR | Cus007 | Mark004 | 09-11-2018 | Prod005 | 157.00 | 157.00 | 1 | |
| | INR | Cus007 | Mark004 | 07-12-2018 | Prod005 | 157.00 | 157.00 | 1 | |
| | INR | Cus007 | Mark004 | 14-12-2018 | Prod005 | 157.00 | 157.00 | 1 | |
| | INR | Cus007 | Mark004 | 01-02-2019 | Prod005 | 157.00 | 157.00 | 1 | |
| | INR | Cus007 | Mark004 | 15-03-2019 | Prod005 | 157.00 | 157.00 | 1 | |
| | INR | Cus007 | Mark004 | 07-06-2019 | Prod005 | 157.00 | 157.00 | 1 | |
| | INR | Cus007 | Mark004 | 06-09-2019 | Prod005 | 157.00 | 157.00 | 1 | |
| | INR | Cus005 | Mark004 | 21-11-2017 | Prod016 | 157.00 | 157.00 | 1 | |

transactions is made of 1 table. ⓘ

transactions

| transactions | | 8 fields 148670 rows | | | 1000 → rows | |
|---------------|------------------|----------------------|---------|------------|-------------------|----|
| Table Details | Abc transactions | Abc transactions | | | transactions | |
| | Currency | Customer Code | | | Amount | |
| | USD | Cus005 | | | 250.00 | |
| | USD | Cus005 | | | 500.00 | |
| | INR | Cus007 | | | 102.00 | |
| | INR | Cus007 | Mark004 | 03-08-2018 | Prod005 | |
| | INR | Cus007 | Mark004 | 09-11-2018 | Prod005 | |
| | INR | Cus007 | Mark004 | 07-12-2018 | Prod005 | |
| | INR | Cus007 | Mark004 | 14-12-2018 | Prod005 | |
| | INR | Cus007 | Mark004 | 01-02-2019 | Prod005 | |
| | INR | Cus007 | Mark004 | 15-03-2019 | Prod005 | |
| | INR | Cus007 | Mark004 | 07-06-2019 | Prod005 | |
| | INR | Cus005 | Mark004 | 21-11-2017 | Prod016 | |
| | | | | | Calculation | |
| | | | | | Normalised Amount | |
| | | | | | Sales Qty | |
| | | | | | 20,750.00 | 36 |
| | | | | | 41,500.00 | 59 |
| | | | | | 157.00 | 1 |
| | | | | | 157.00 | 1 |
| | | | | | 157.00 | 1 |
| | | | | | 157.00 | 1 |
| | | | | | 157.00 | 1 |
| | | | | | 157.00 | 1 |
| | | | | | 157.00 | 1 |
| | | | | | 157.00 | 1 |
| | | | | | 157.00 | 1 |

Filter

Markets Code

Sales Amount

Add...

Edit...

Remove

Details

excludes Mark097 and Mark999

includes values greater than or equal to 1

OK

Cancel

transactions is made of 1 table. ⓘ

transactions

Normalised Amount

```
IF [Currency] == 'USD'
THEN [Sales Amount] * 83
ELSE [Sales Amount]
END
```

The calculation is valid.

Apply

OK

transactions

1000

rows

Table Details

| Abc transactions | Abc transactions |
|---------------------|---------------------|
| Currency | Customer Co |
| USD | Cus005 |
| USD | Cus005 |
| INR | Cus007 |
| INR | Cus007 |
| INR | Cus007 |
| INR | Cus007 |
| INR | Cus007 |
| INR | Cus007 |
| INR | Cus007 |
| INR | Cus007 |
| INR | Cus007 |
| INR | Cus005 |

| Mark004 | 03-08-2018 | Prod005 | 157.00 | 1 |
|---------|------------|---------|--------|---|
| Mark004 | 09-11-2018 | Prod005 | 157.00 | 1 |
| Mark004 | 07-12-2018 | Prod005 | 157.00 | 1 |
| Mark004 | 14-12-2018 | Prod005 | 157.00 | 1 |
| Mark004 | 01-02-2019 | Prod005 | 157.00 | 1 |
| Mark004 | 15-03-2019 | Prod005 | 157.00 | 1 |
| Mark004 | 07-06-2019 | Prod005 | 157.00 | 1 |
| Mark004 | 06-09-2019 | Prod005 | 157.00 | 1 |
| Mark004 | 21-11-2017 | Prod016 | 157.00 | 1 |

transactions
Sales Qty

| | |
|--------|----|
| 157.00 | 36 |
| 157.00 | 59 |
| 157.00 | 1 |
| 157.00 | 1 |
| 157.00 | 1 |
| 157.00 | 1 |
| 157.00 | 1 |
| 157.00 | 1 |
| 157.00 | 1 |
| 157.00 | 1 |

Mr. Sandesh Sawant

transactions is made of 1 table. ⓘ

transactions

transactions ▼

8 fields 148670 rows

1000 → rows ⚙️ ▼

Table Details

| Abc transactions | Abc transactions | Abc transactions | transactions | Abc transactions | # transactions | # transactions |
|---------------------|---------------------|---------------------|--------------|---------------------|-------------------|-------------------|
| Currency | Customer Code | Market Code | Order Date | Product Code | Sales Amount | Sales Qty |
| USD | Cus005 | Mark004 | 22-11-2017 | Prod003 | 250.00 | 36 |
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| INR | Cus007 | Mark004 | 20-04-2020 | Prod005 | 102.00 | 1 |
| INR | Cus007 | Mark004 | 03-08-2018 | Prod005 | 157.00 | 1 |
| INR | Cus007 | Mark004 | 09-11-2018 | Prod005 | 157.00 | 1 |
| INR | Cus007 | Mark004 | 07-12-2018 | Prod005 | 157.00 | 1 |

- Rename
- Reset Name
- Copy Values
- Hide
- Create Calculated Field...
- Create Group...
- Create Bins...
- Describe...

Mr. Sandesh Sawant

Step 5 : Build tableau Dashboard



Dashboard

Layout

Default

Phone

Device Preview

Size

Custom size (1500 x 900)

Sheets

Total Revenue

Sales Quantity

Revenue By Markets

SALES QUANTITY BY ...

TOP 5 CUSTOMERS

REVENUE BY YEAR

YEAR

MONTH

Objects

Text

Extension

Ask Data

Data Story

Image

Blank

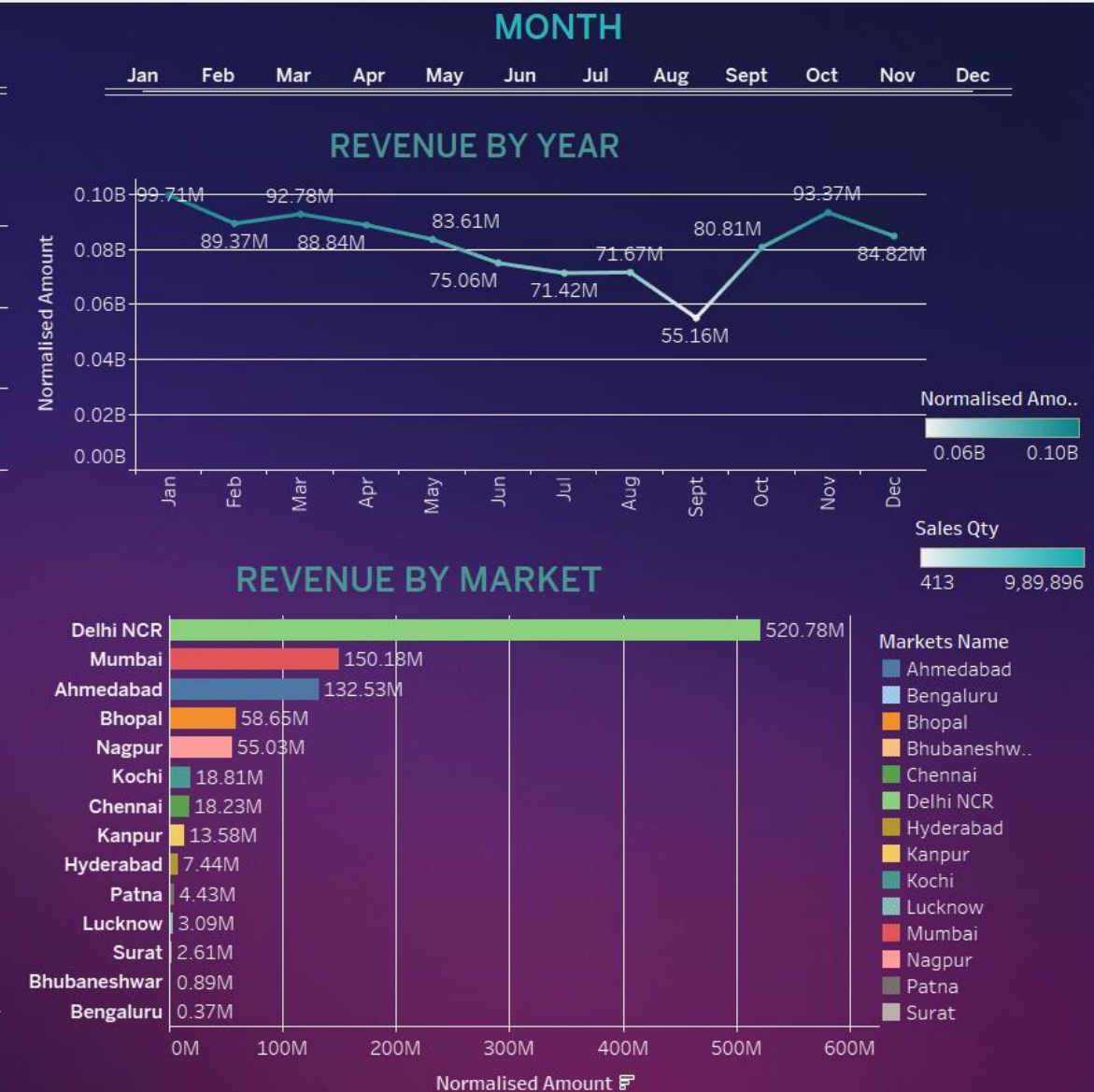
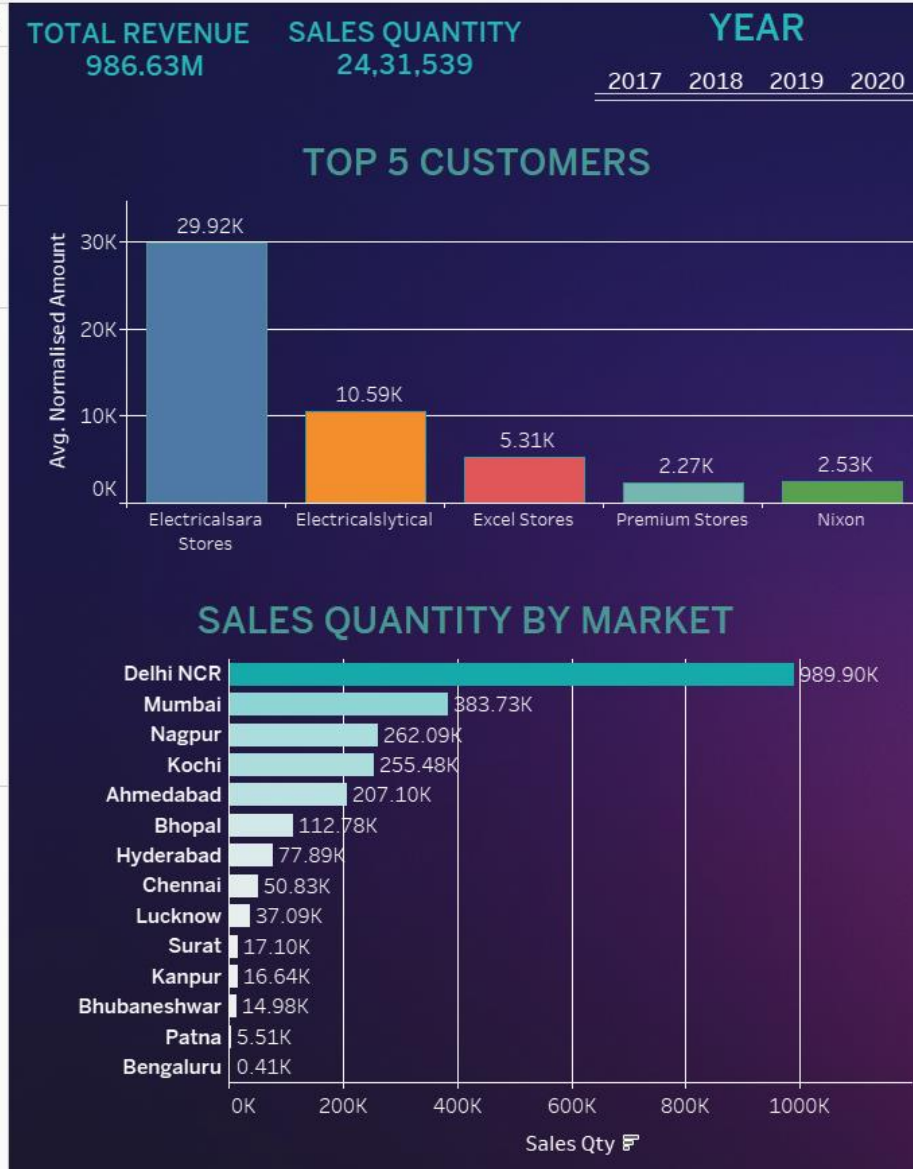
Workflow

Web Page

Tiled

Floating

☐ Show dashboard title



TOTAL REVENUE
986.63M

SALES QUANTITY
24,31,539

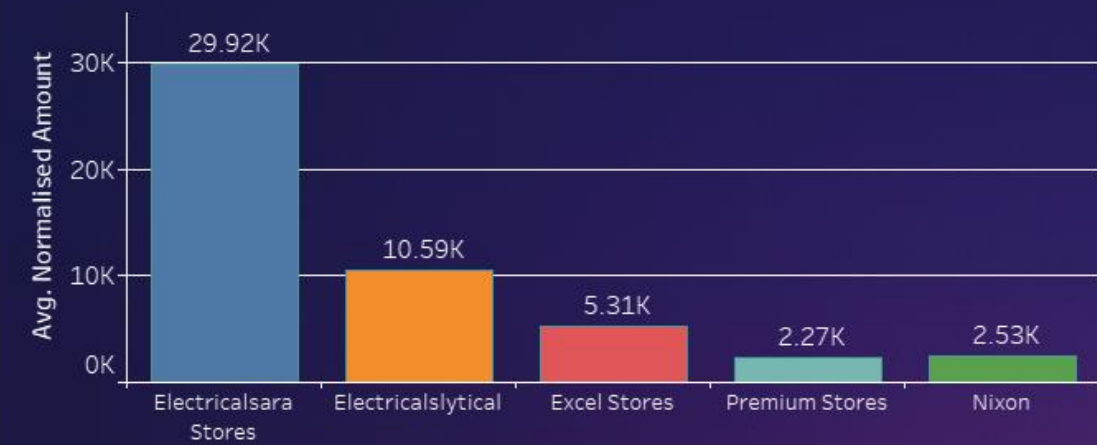
YEAR

2017201820192020

MONTH

JanFebMarAprMayJunJulAugSeptOctNovDec

TOP 5 CUSTOMERS



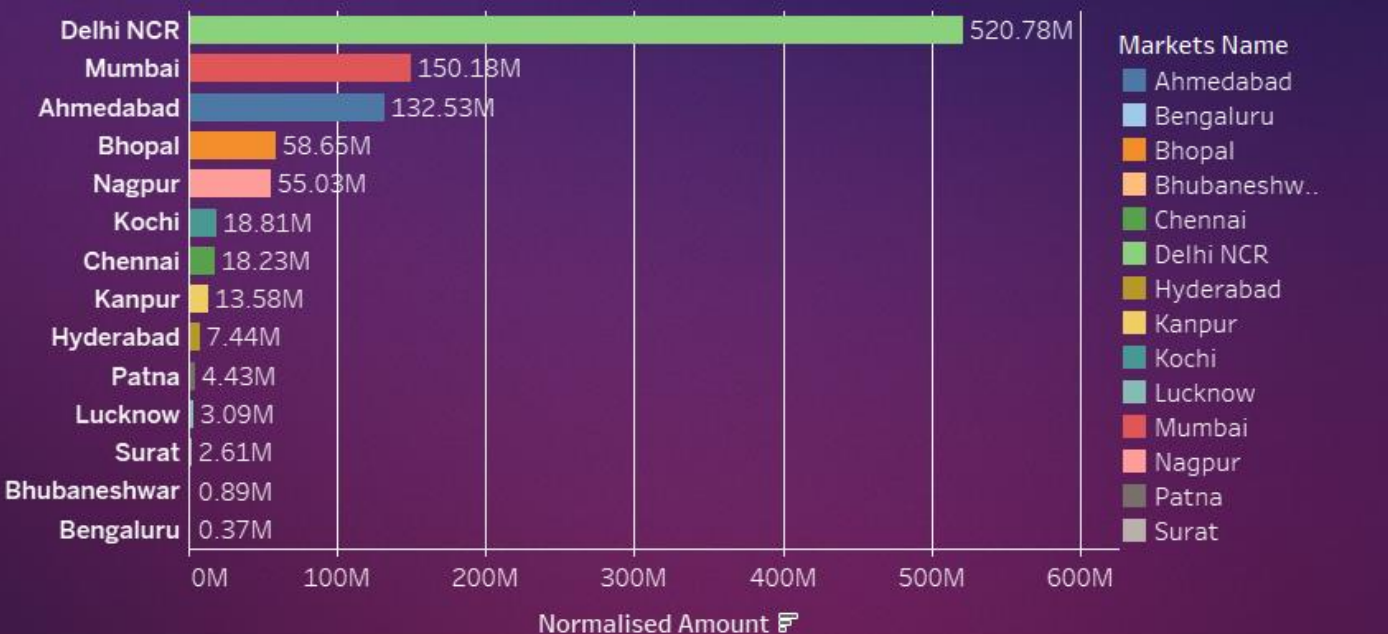
REVENUE BY YEAR



SALES QUANTITY BY MARKET



REVENUE BY MARKET



TOTAL REVENUE
986.63M

SALES QUANTITY
24,31,539

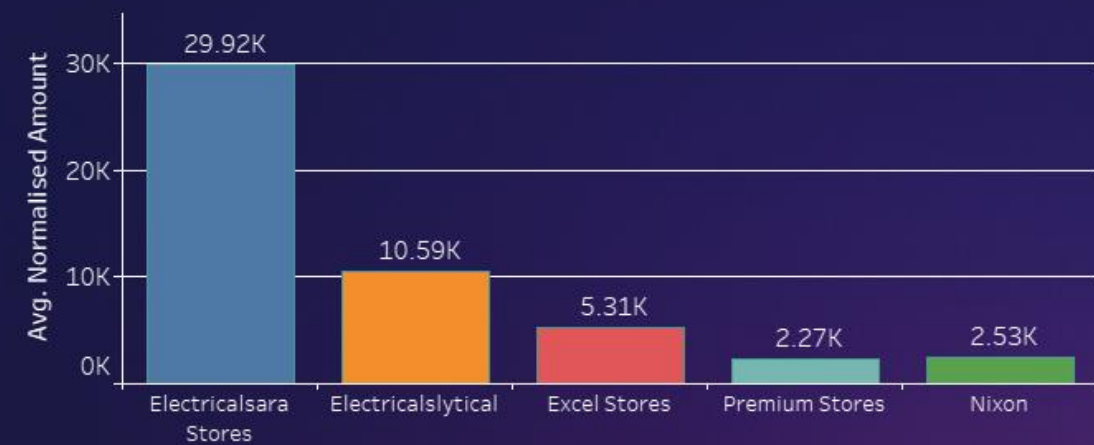
YEAR

2017201820192020

MONTH

JanFebMarAprMayJunJulAugSeptOctNovDec

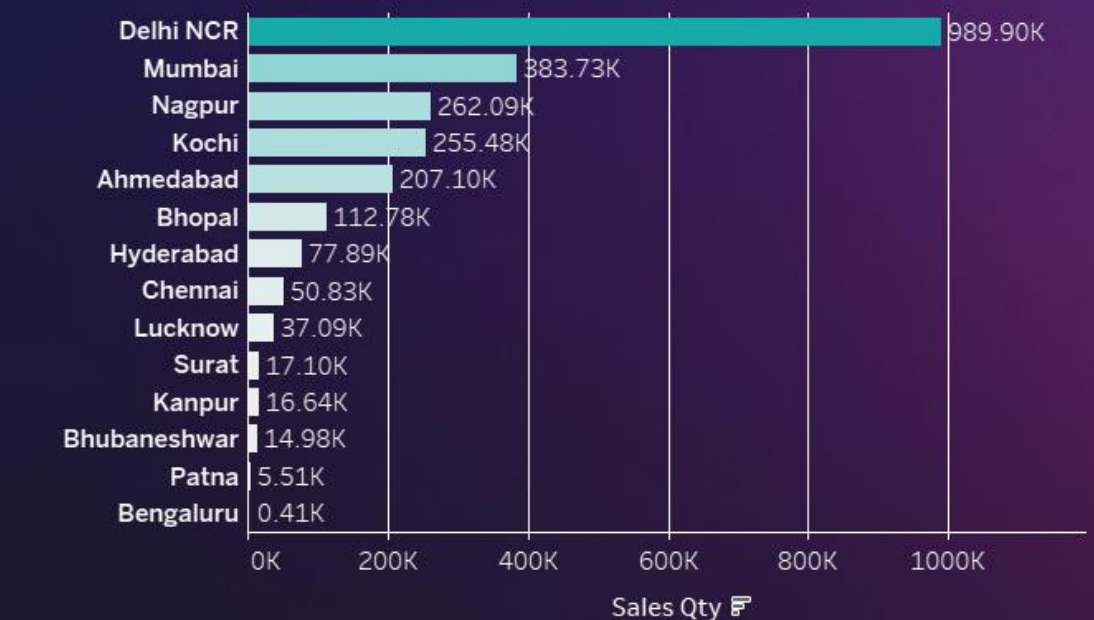
TOP 5 CUSTOMERS



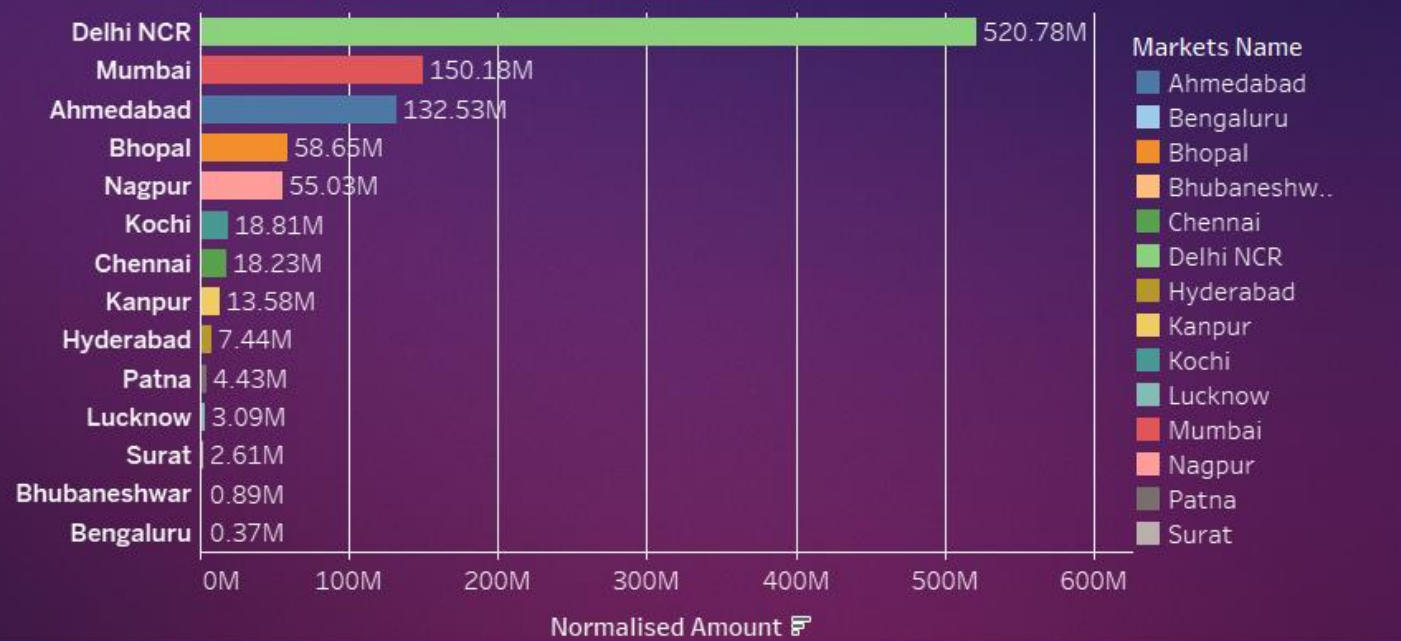
REVENUE BY YEAR



SALES QUANTITY BY MARKET



REVENUE BY MARKET



TOTAL REVENUE
986.63M

SALES QUANTITY
24,31,539

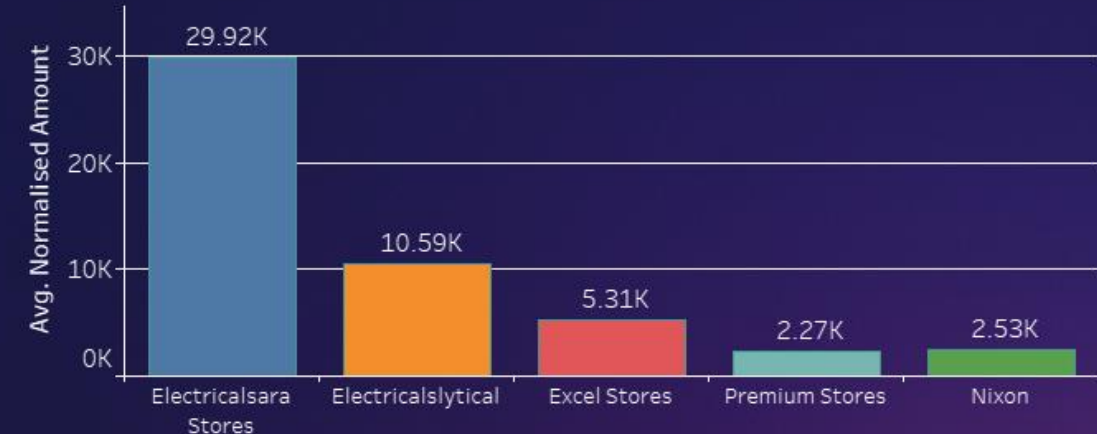
YEAR

2017 2018 2019 2020

MONTH

Jan Feb Mar Apr May Jun Jul Aug Sept Oct Nov Dec

TOP 5 CUSTOMERS



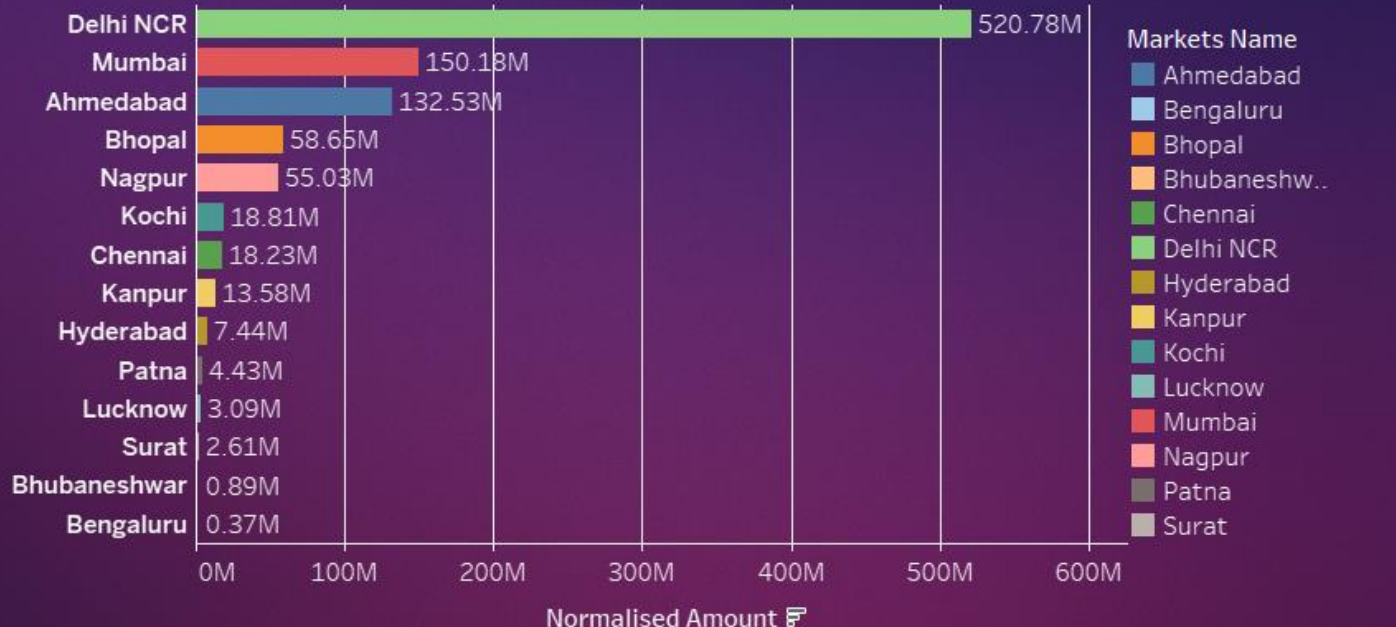
REVENUE BY YEAR



SALES QUANTITY BY MARKET



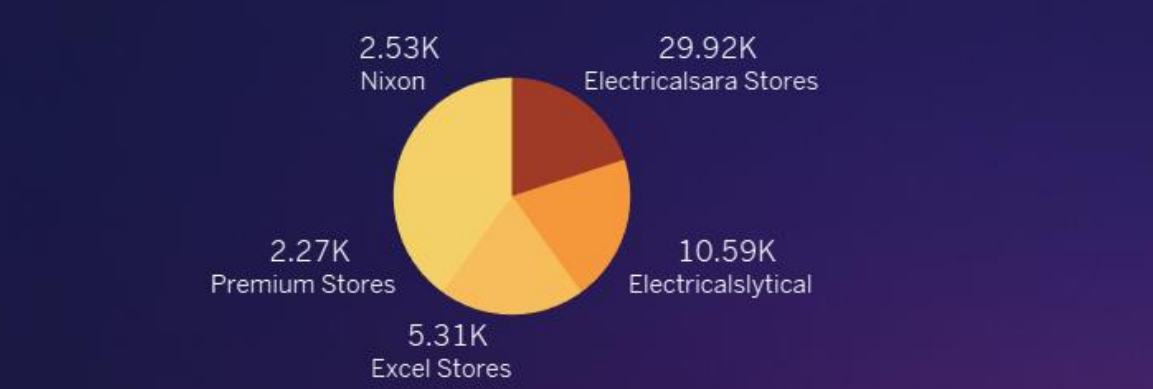
REVENUE BY MARKET



| TOTAL REVENUE | SALES QUANTITY | YEAR |
|---------------|----------------|------------------|
| 986.63M | 24,31,539 | 2017201820192020 |

| MONTH |
|---------------------------------------|
| JanFebMarAprMayJunJulAugSeptOctNovDec |

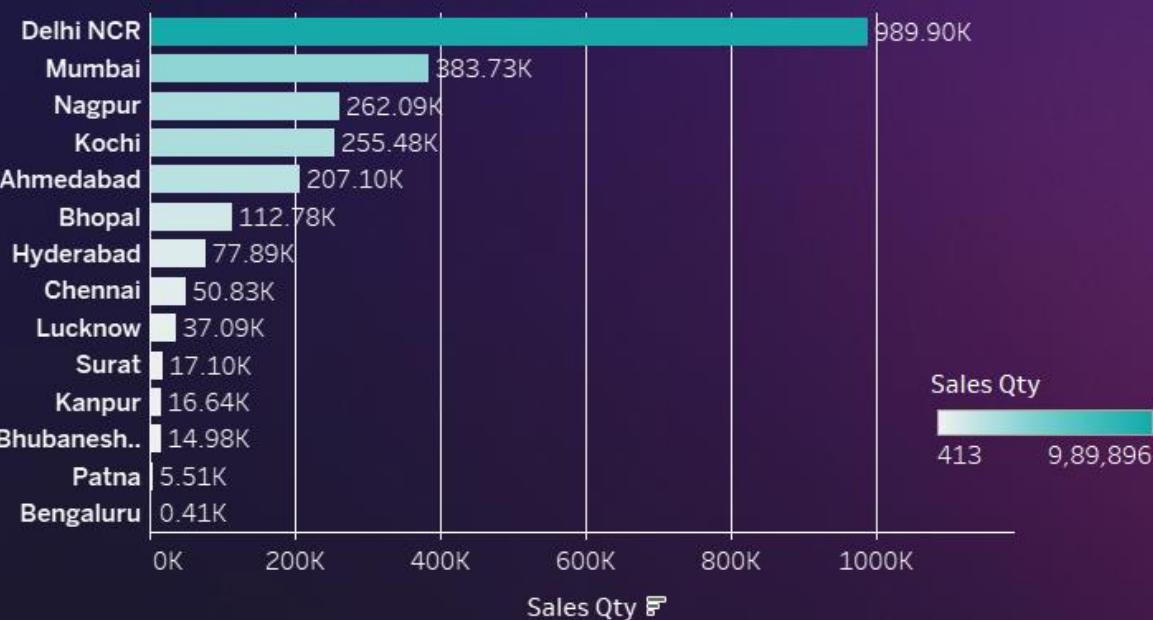
TOP 5 CUSTOMERS



REVENUE BY YEAR



SALES QUANTITY BY MARKET



REVENUE BY MARKET

