

# Sales Analytics Dashboard

Team #4: Aayush Singh, Andy Low Zhi Hao, Ezra Lerh, Fannisa Fahmi, Tee Yue Wan



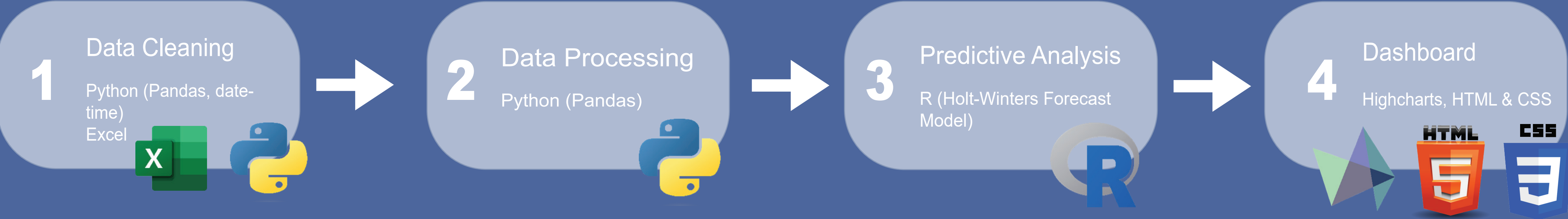
## ABOUT TSH

Founded by Mr. SH Tay in 2006, TSH Group is a **leading Contract Equipment Manufacturer** based in Singapore which specializes in engineering services including cable and box assembly contract manufacturing services, and precision machining to regional MNCs.

## PROBLEM STATEMENT

1. Analyze and improve existing **sales visualizations** to highlight key metrics
2. Develop a sales dashboard that includes a **sales forecasting model** and **drill-down function** for detailed data analysis

## METHODOLOGY



## FORECAST

Double exponential smoothing in R was used to forecast future demand for:

- 1 **REVENUE**
- 2 **SALES ORDER**

Calculated by:

$$\text{QUANTITY} \times \text{UNIT PRICE} \times \text{EXCHANGE RATE}$$

The forecast is broken down into 2 main categories:

- 1 **TOTAL AMOUNT**
- 2 **INDIVIDUAL CUSTOMER**

## EVALUATION OF FORECAST MODEL

### HOLT-WINTERS MODEL

Provides a range of values that the actual observation is likely to fall within  
Accounts for sampling uncertainty in the estimated model parameters

### PREDICTION INTERVAL

Accounts for seasonality in the data  
Allows for the incorporation of trend and level components

## ASSUMPTIONS



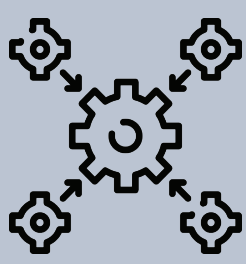
Format of data stored in ERP will not change.



Exchange rate is constant throughout current month.



No global financial crisis or pandemic occurs disrupting supply chains.

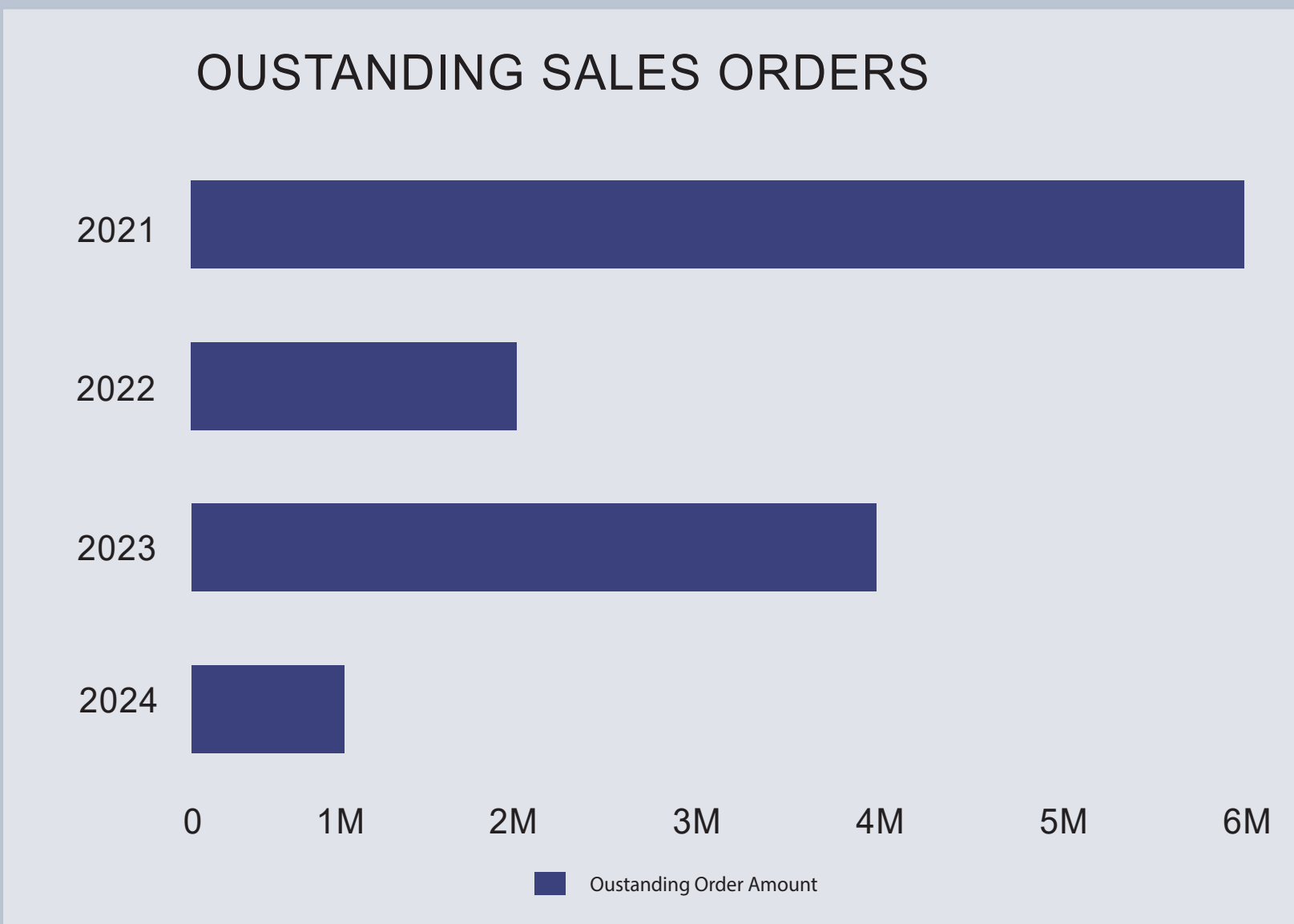


## INTEGRATION

Employees can **quickly and easily** access the forecast data using the dashboard and make **informed decisions** regarding forecasted sales order and revenue

## DASHBOARD

Display mainly 4 different information at one glance, such as:



### 1 REVENUE BY MONTH

### 2 SALES ORDER BY MONTH

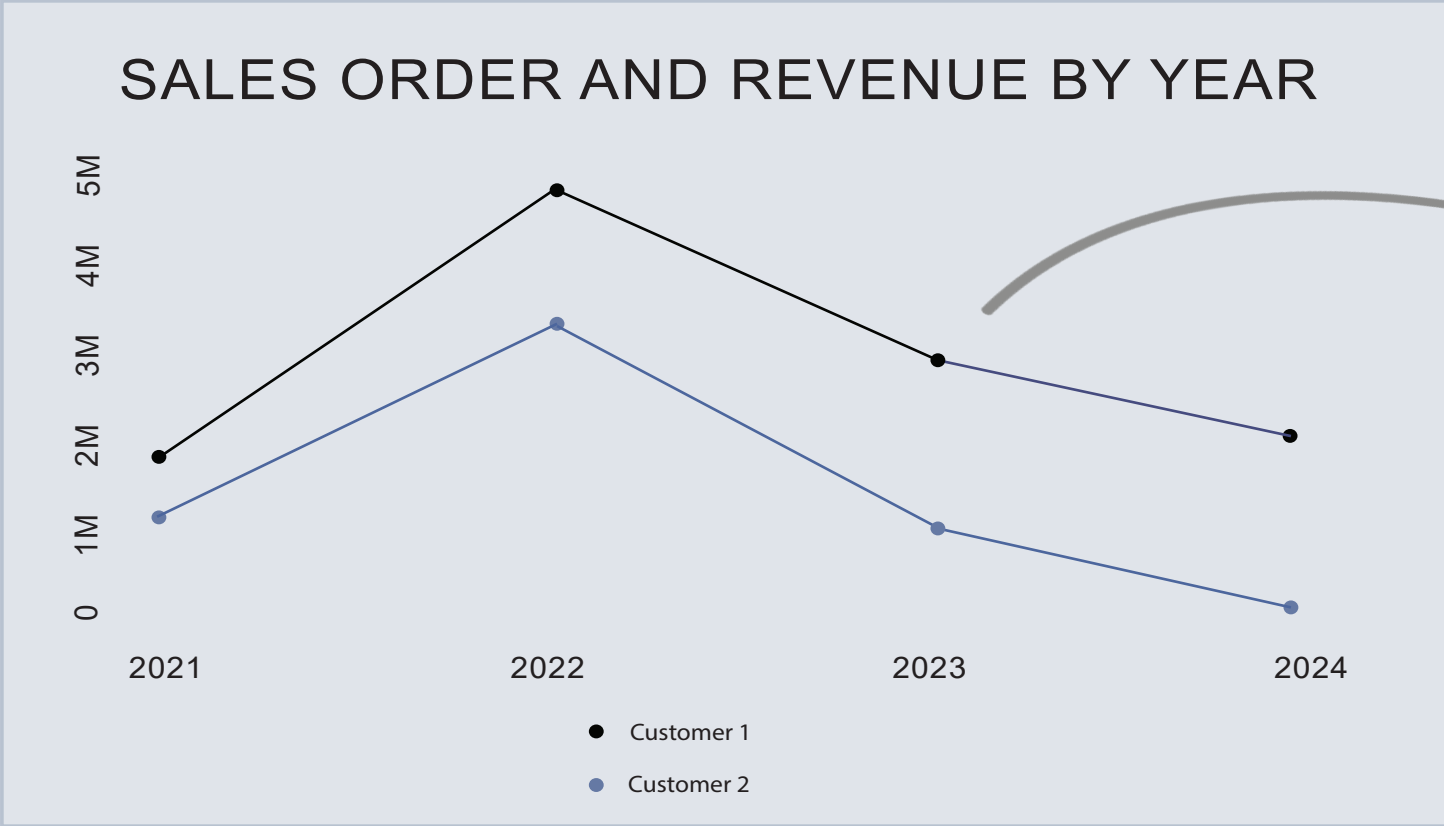
### 3 OUTSTANDING SALES ORDER

### 4 SALES ORDER AND REVENUE BY YEAR

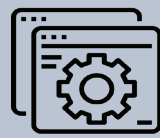
## FEATURES OF DASHBOARD

### INTERACTIVE GRAPH WITH DRILL-DOWN FUNCTION

### KPI & METRICES



2023  
Outstanding Orders: **\$16501.61**



Our drill-down feature lets users enlarge a particular month's worth of information

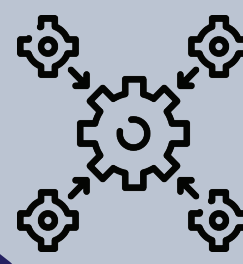
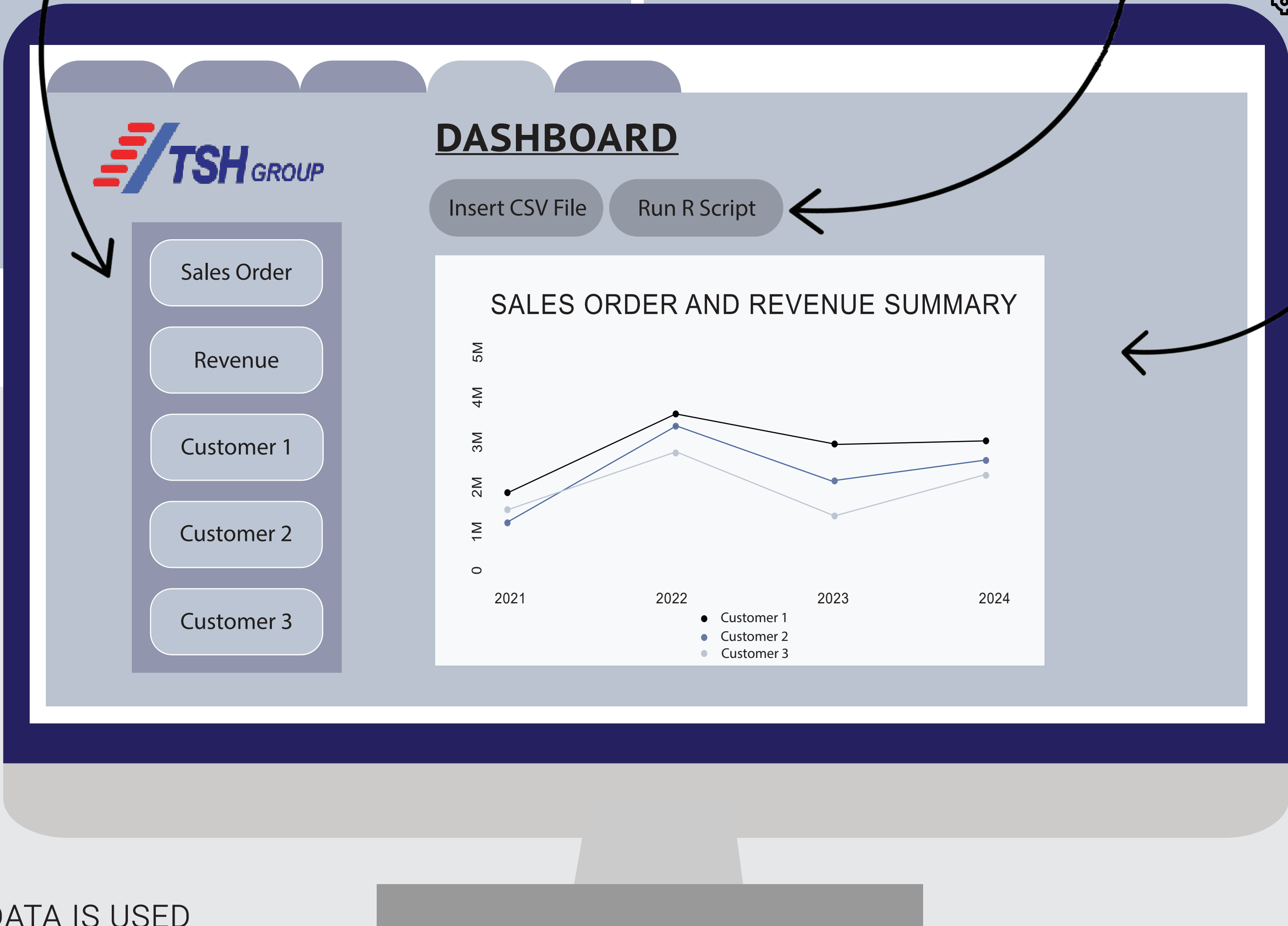


The dashboard provides a **clean, concise and macro** level summary of key details  
Prevents dashboard from being flooded with unimportant figures and diagrams



A button on the dashboard allows client to run the Forecasting R scripts to update the forecast with respect to **live data** instead of having a one-time forecast only

## FINAL SOLUTION



## INTEGRATION

We used **HTML** and **CSS** to position the information on the webpage based on our client's demand  
This ensured **seamless** navigation around our dashboard

## LIMITATIONS

The forecast model may not be able to handle **sudden changes** or **shocks** in the data  
Lower reliability of predictions due to the relatively **short duration** of the available data



## CONTRIBUTIONS

The dashboard serves as a **centralized platform** for senior mangement and sales staff to access the latest company sales order and revenue  
The forecast model allows for more **detailed insights** into its sales patterns and **better allocate** its resources accordingly

