

GOOD SAMARITAN HOSPITAL DASHBOARD



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BACKGROUND



Good Samaritan Hospital in the Bay Area initiated a project to tackle challenges in gauging patient satisfaction. The focus is on leveraging data to understand demographic and age-related influences on satisfaction scores, allowing for tailored services. Additionally, the project aims to optimize resource allocation by analyzing fluctuations in patient numbers throughout the year.



APPROACH



Constant meetings with the hospital, feedback on the progress and new metrics added.

PROBLEM UNDERSTANDING



Involves mining hospital data, pinpointing demographics and age-related factors influencing satisfaction scores, and refining data structure.

DATA PREPARATION



LOREM IPSUM DOLOR SIT AMET, CONSECTETUR ADIPISCING ELIT. Duis vulputate nulla at ante rhoncus, vel efficitur felis condimentum. Proin odio odio.

DASHBOARD DEVELOPMENT



The final step involves rigorous assessment of the dashboard's effectiveness in optimizing resource allocation, ensuring adaptability to evolving hospital needs.

EVALUATION

TOOLS



Data storage and data exploration

SQL SERVER



Data cleaning and feature engineering

POWER QUERY



Dashboard development and design of graphs and KPI.

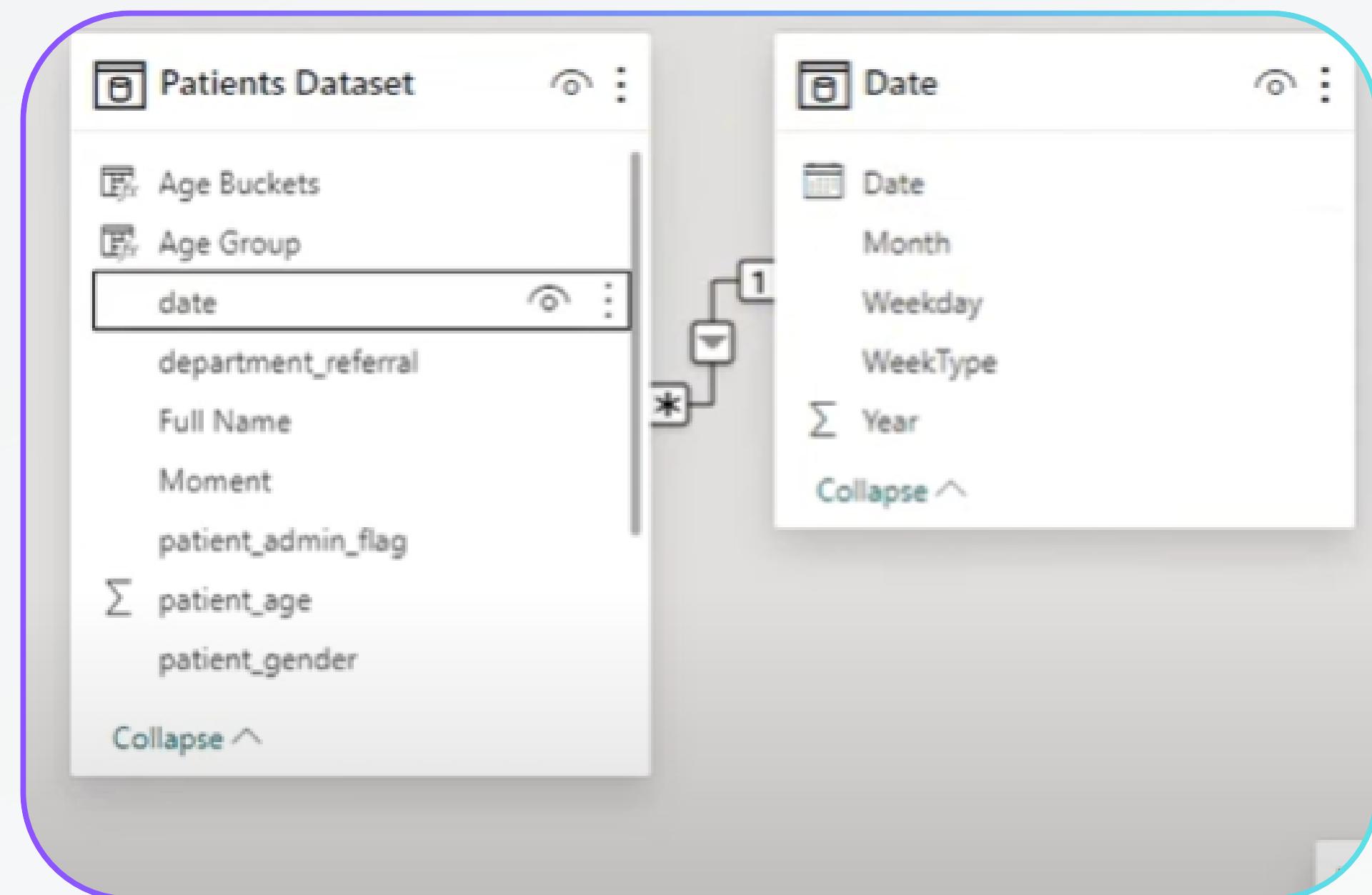
POWER BI



Metrics creation, calculations, functions.

DAX

DATA MODELING



DATA CLEANING

- 01** TRANSFORM DATE TO A YEAR/MONTH/DAY FORMAT
- 02** EXTRACT THE PARTS OF THE DAY (AM OR PM)
- 03** MERGE NAMES AND LAST NAMES
- 04** NULL IMPUTATION USING MEAN FOR SAT SCORE AND AGE
- 05** GENDER COLUMN CLEANING

FEATURE ENGINEERING

01 CREATE AN AGE BUCKET COLUMN FOR THE HEAT MAP

```
Age Buckets =  
SWITCH(  
    TRUE(),  
    'Patients Dataset'[patient_age]<=10, "0-10",  
    'Patients Dataset'[patient_age]<=20, "11-20",  
    'Patients Dataset'[patient_age]<=30, "21-30",  
    'Patients Dataset'[patient_age]<=40, "31-40",  
    'Patients Dataset'[patient_age]<=50, "41-50",  
    'Patients Dataset'[patient_age]<=60, "51-60",  
    'Patients Dataset'[patient_age]<=70, "61-70",  
    "70+"
```

FEATURE ENGINEERING

02 CREATE AGE GROUP COLUMN FOR BAR GRAPH

```
Age Group =  
  VAR _PatientAge = 'Patients Dataset'[patient_age]  
  RETURN  
  
  IF(  
    _PatientAge<=2, "Infancy",  
    IF(  
      _PatientAge<=6, "Early Childhood",  
      IF(  
        _PatientAge<=12, "Middle Childhood",  
        IF(  
          _PatientAge<=18, "Teenager",  
          "Adult"  
        )  
      )  
    )  
  )
```

FEATURE ENGINEERING

03 CREATE NEW TABLE FOR MORE DATE INFORMATION

```
Date =  
ADDCOLUMNS(  
CALENDARAUTO(),  
"Year", YEAR([Date]),  
"Month", FORMAT([Date], "mmm"),  
"WeekType", IF(WEEKDAY([Date])=1, "Weekend", IF(WEEKDAY([Date])=7, "Weekend", "Weekday")),  
"Weekday", FORMAT([Date], "ddd")  
)
```

FEATURE ENGINEERING

04

CREATE NEW AUXILIAR TABLE TO CARRY ANALYSIS ON PATIENTS FOR EVERY MONTH

```
CF Max Point (Month) =  
    VAR _PatientTable =  
        CALCULATETABLE(  
            ADDCOLUMNS(  
                SUMMARIZE('Date','Date'[Month]),  
                "@Total_Patients",[Total Patients]  
            ),  
            ALLSELECTED()  
        )  
    VAR _MinValu =MINX(_PatientTable,[@Total_Patients])  
    VAR _MaxValu =MAXX(_PatientTable,[@Total_Patients])  
    VAR _TotalPatients =[Total Patients]  
    RETURN  
    SWITCH(  
        TRUE(),  
        _TotalPatients =_MinValu,_MinValu,  
        TotalPatients = MaxValu, MaxValu
```

DASHBOARD METRICS

01 NONE- ADMINISTRATIVE SCHEDULE

```
% None - Administrative Schedule =  
DIVIDE(  
    COUNTROWS(  
        FILTER(  
            'Patients Dataset',  
            'Patients Dataset'[patient_admin_flag]=FALSE())  
    ),  
    [Total Patients]  
)
```

DASHBOARD METRICS

02 AVERAGE SATISFACTION SCORE

```
Average Satisfaction Score =  
CALCULATE(  
    AVERAGE('Patients Dataset'[patient_sat_score]),  
    'Patients Dataset'[patient_sat_score]<>BLANK()  
)
```

DASHBOARD METRICS

03 SATISFACTION SCORE MISSING

```
% No Rating =  
    VAR _NoRatings =  
        CALCULATE(  
            [Total Patients],  
            'Patients Dataset'[patient_sat_score]=BLANK()  
        )  
    RETURN  
    DIVIDE(  
        _NoRatings,  
        [Total Patients]  
    )
```

DASHBOARD METRICS

04 GENDER BREAKDOWN

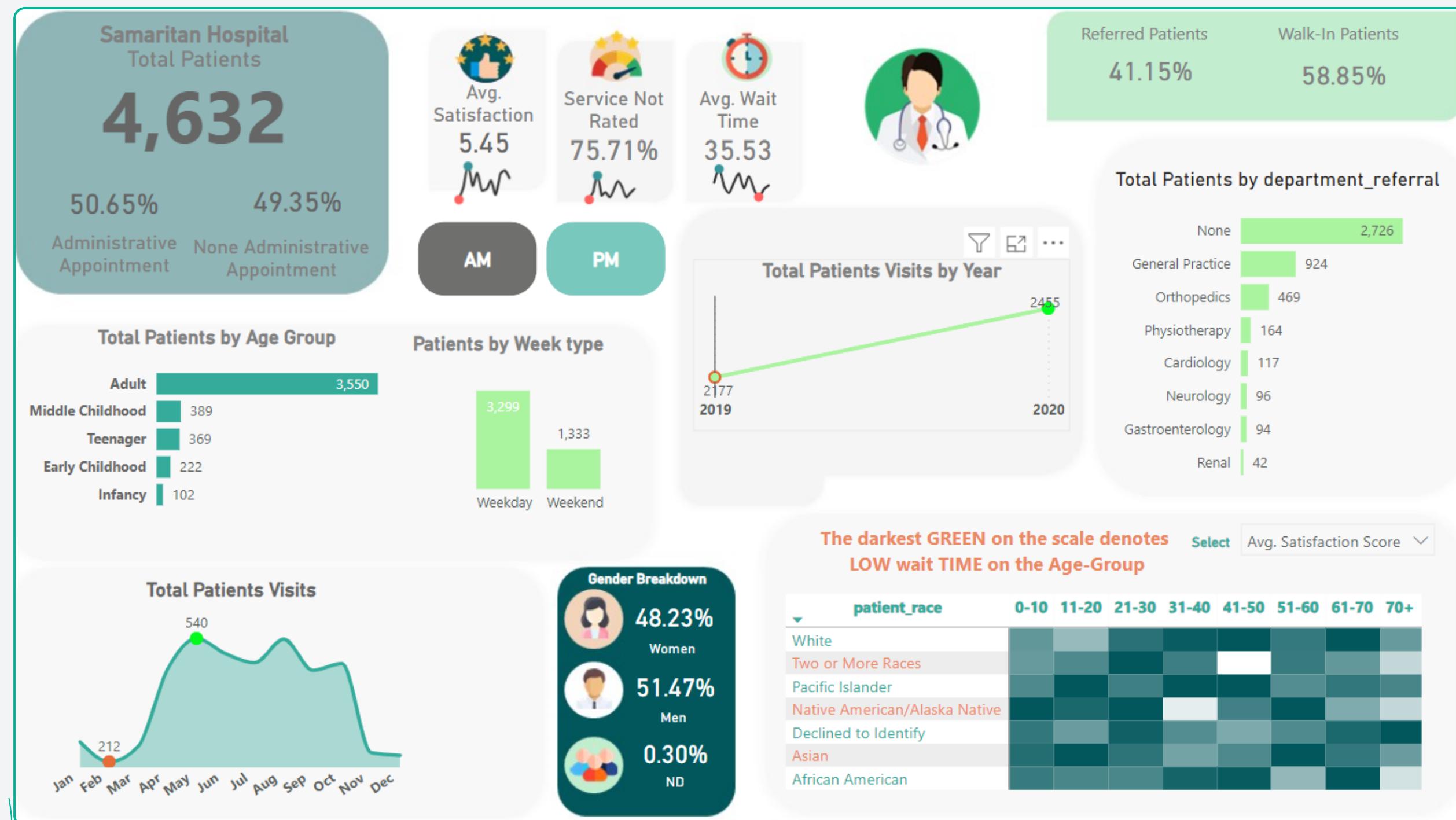
```
% Female Visit =  
    DIVIDE(  
        CALCULATE(  
            [Total Patients],  
            'Patients Dataset'[patient_gender] = "f"  
        ),  
        [Total Patients]  
    )
```

DASHBOARD METRICS

05 HEATMAP CAPTIONING

```
HitMap Caption =  
    VAR _SelectedMeasure =  
        SELECTEDVALUE(Parameter[Parameter Order])  
    RETURN  
    IF( _SelectedMeasure=0,  
        "The darkest GREEN on the Scale denotes LOW wait TIME on the  
        Age-Group",  
        "Patients are most SATISFIED when the SCALE shows the darkest  
        GREEN on the Age-Group"  
    )
```

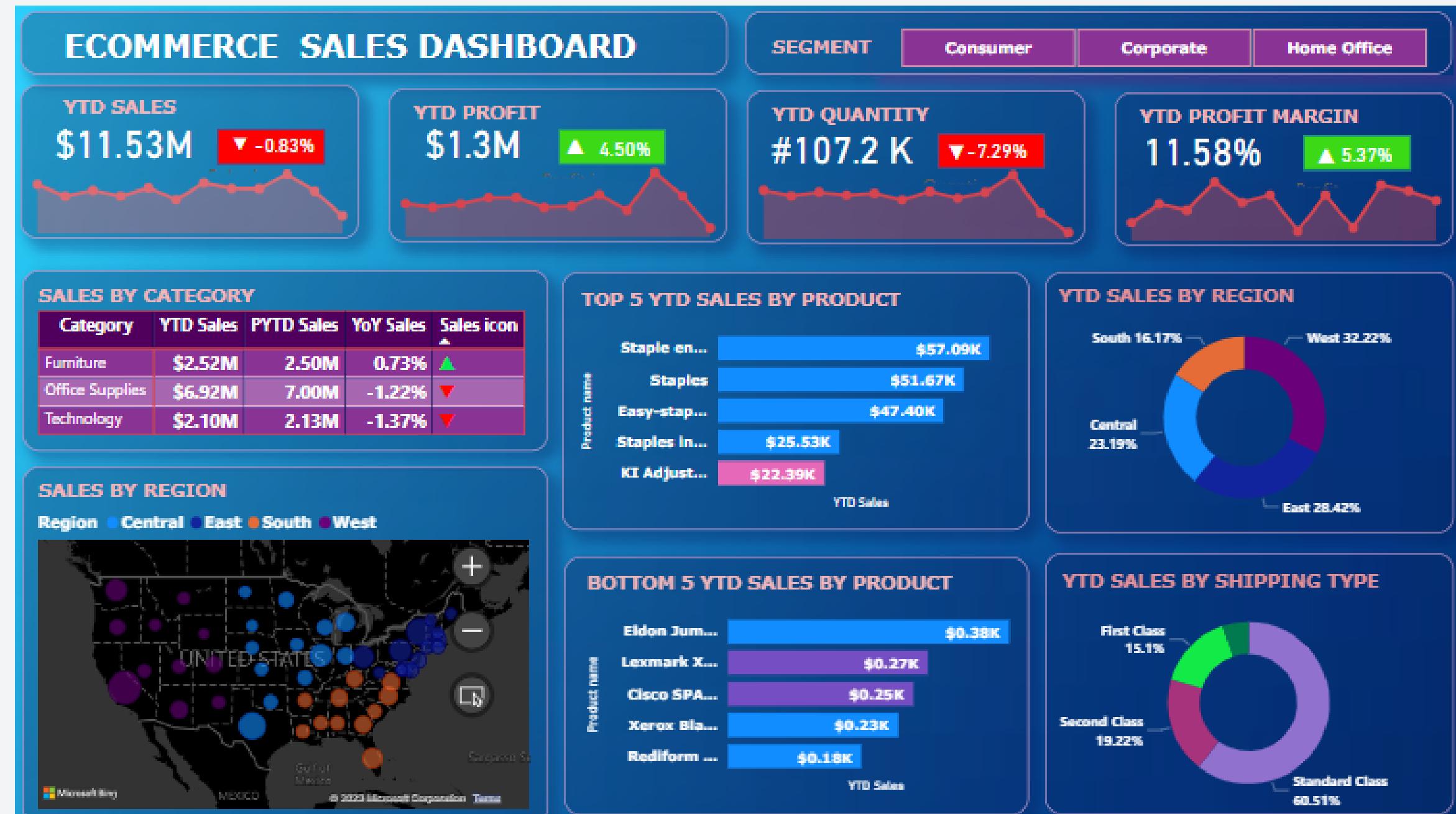
DASHBOARD



RESULTS SUMMARY

- 01** 30% INCREASE IN PATIENT SATISFACTION ACHIEVED: TAILORED SERVICES INFORMED BY DEMOGRAPHIC INSIGHTS LED TO A SUBSTANTIAL IMPROVEMENT.
- 02** ETHNICITY, AGE, AND WAIT TIME CORRELATIONS IDENTIFIED: ENHANCED UNDERSTANDING FOR TARGETED SERVICE IMPROVEMENTS.
- 03** OPTIMIZED RESOURCE ALLOCATION THROUGH SEASONAL PATIENT VARIATION ANALYSIS: IMPROVED OPERATIONAL EFFICIENCY ALIGNING WITH FLUCTUATING DEMAND.

EXTRA DASHBOARD



THANK YOU!!!

