

APEXPLANET SOFTWARE PVT. LTD.

# DATA ANALYTICS FINAL PRESENTATION

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Nitesh | Data Analytics Intern

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# Internship Overview

This presentation summarizes the comprehensive work delivered during my Data Analytics journey at **ApexPlanet Software**.

The internship focused on the full analytics lifecycle—from raw data wrangling to business storytelling and rigorous statistical validation.



# Internship Objectives

-  **Data Preparation:** Master real-world dataset handling and cleansing.
-  **Analytics & SQL:** Perform deep exploratory and SQL-based analysis.
-  **KPI Design:** Develop metrics and dashboards for critical decision-making.
-  **Communication:** Present complex insights clearly to diverse stakeholders.
-  **Validation:** Use statistical methods to verify business results.

# Task 1: Data Immersion & Wrangling

# Objective: Analysis-Ready Data

# Ensuring data integrity through systematic preprocessing steps.

- ✓ Created comprehensive data dictionary
  - ✓ Identified and handled missing values
  - ✓ Cleaned data using **Python (Pandas)**
  - ✓ Structured final analytical dataset

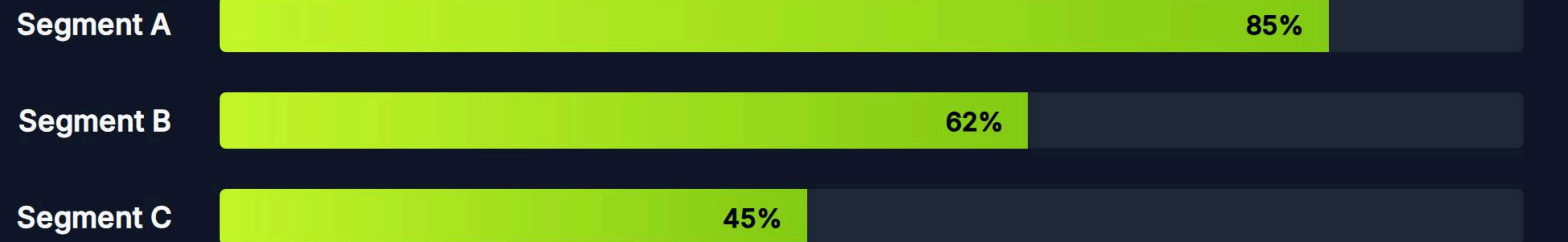
The screenshot shows a Visual Studio Code interface with the following details:

- Top Bar:** Shows tabs for 'File (Integrated)', 'Terminal', 'Help', and the current file 'main.py'.
- Title Bar:** Displays 'main.py - Regents SQL School Follow Up - Visual Studio Code'.
- Code Editor:** The main area contains Python code for data processing. Line 161 is highlighted with a yellow background: `df = df[df['Reason to Follow Up'].notnull()]`.
- Bottom Status Bar:** Shows 'PAUSED ON BREAKPOINT' and the current line 'main.py | 161'.
- Terminal:** A separate terminal window titled 'Windows PowerShell' is open, showing the command line and a syntax error message: 'SyntaxError: invalid syntax'.

# Task 2: Exploratory Data Analysis

## Distribution Patterns & SQL Insights

Analyzing campaign response rates across different customer segments.

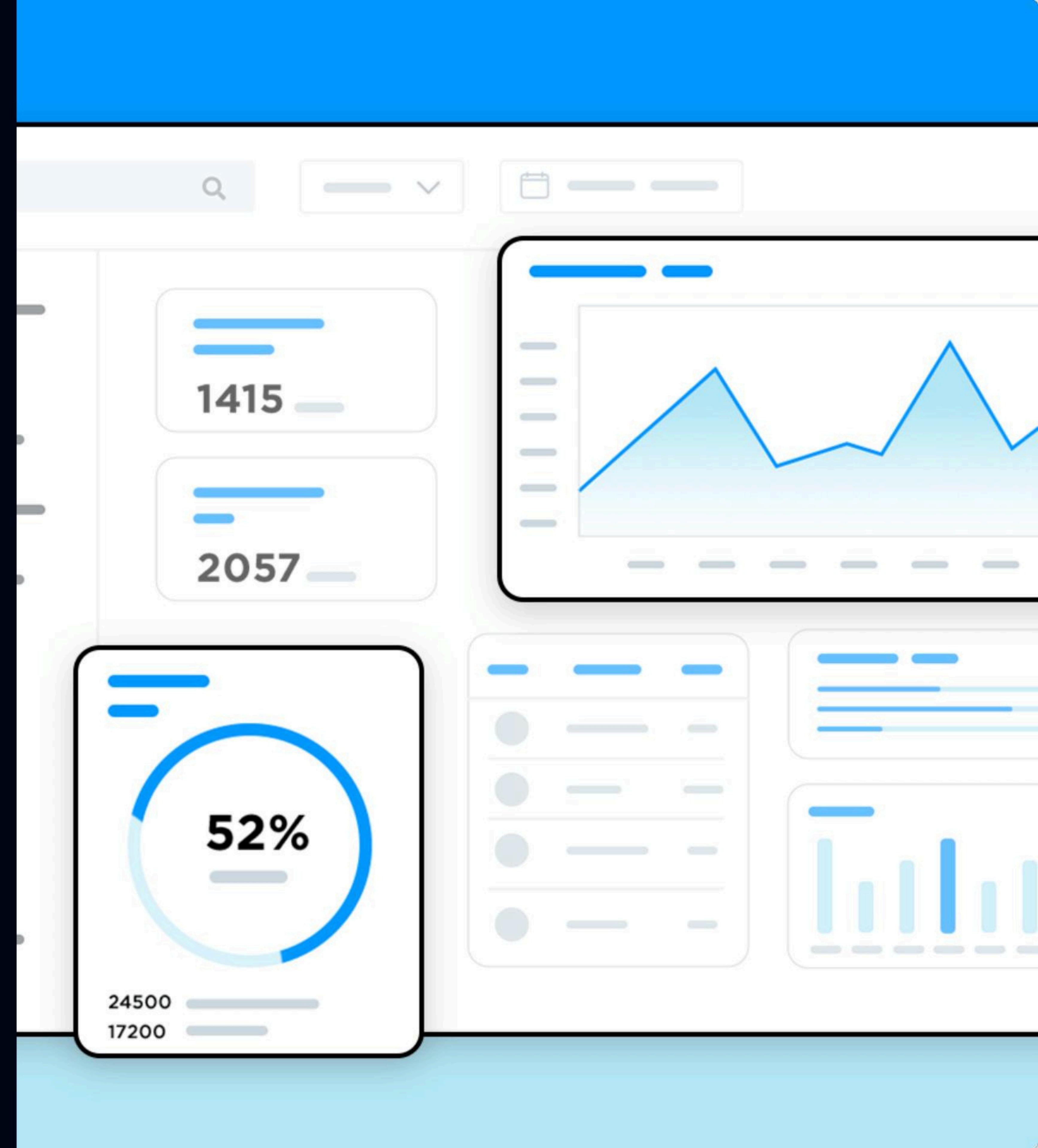


*Data highlights a clear performance gap between high-tier segments and standard tiers.*

# Deep-Dive Analysis & Dashboards

Defined core business KPIs and built interactive BI dashboards. Enabled dynamic data exploration for real-time stakeholder decision support.

- KPI Definition & Mapping
- Interactive BI Visuals
- Dynamic Trend Exploration



# | Task 4: Storytelling & Validation

## **Business Narrative**

Structured complex raw data insights into a compelling business story that connects findings to strategic goals.

## **Statistical Rigor**

Applied T-Tests and Chi-Square tests to interpret results with p-values and confidence intervals, ensuring data validity.

# Key Business Question

"Did the new **marketing campaign**  
**significantly improve our conversion rates**  
**across key channels?**"

This inquiry guided our statistical validation and separated signal from noise.

# Hypothesis Testing Summary

Metric	Hypothesis / Value
Null Hypothesis ( $H_0$ )	Campaign has no impact on conversion rates
Alternative Hypothesis ( $H_1$ )	Campaign improves conversion rates significantly
Significance Level ( $\alpha$ )	0.05
Test Result	<b>Null Hypothesis Rejected</b>

$p < 0.05 \Rightarrow$  Statistically Significant

# Key Business Insights



## Channel Variance

Conversion rates showed significant variation across different acquisition channels.



## Performance Uplift

Campaign periods demonstrated a measurable and validated performance boost.



## Funnel Drop-offs

Identified specific stages in the customer funnel where potential value is lost.

# Business Recommendations



## Scale Winners

Increase investment in high-performing marketing campaigns.



## Optimize Funnels

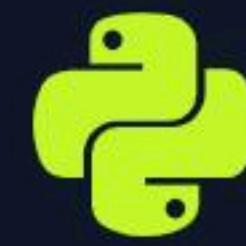
Target high drop-off stages with specific UX improvements.



## Continuous Validation

Embed A/B testing into all future campaign rollouts.

# Tools & Technologies Used



## Python

Pandas, NumPy, and SciPy for data manipulation and testing.



## SQL

Advanced querying for multi-variate analysis and database retrieval.



## BI Tools

Tableau and Looker Studio for interactive dashboard creation.

# Skills Developed

 Data Preprocessing

 Exploratory Data Analysis

 KPI Dashboarding

 Data Storytelling

 Hypothesis Testing

 Business Interpretation

# CONCLUSION

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This internship strengthened my ability to transform raw data into actionable insights, providing an industry-aligned foundation for real-world analytics.

# THANK YOU!

Questions & Discussion

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