Help Desk Data Analysis Project

1

Tools used in project :

- Python/Pandas : (Data Cleaning)
- Tableau : (Data Visual & Dashboard)
- Figma : (Dashboard layout design)

2 Project Overview

This project involves analyzing the performance of a company's help desk system using a dataset of support tickets. The analysis aims to provide insights into ticket volume, user satisfaction, ticket resolution rates, and other key metrics. The visualizations created in Tableau will help stakeholders understand the current state of the help desk and identify areas for improvement.

Data Source : Kaggle

Dataset Description

The dataset represents a collection of support tickets from the company's help desk system. Each row corresponds to an individual support ticket and includes various attributes such as ticket number, requester details, owner group, issue category, ticket type, days open, satisfaction score, ticket status, creation date, severity status, and satisfaction level.

Data columns Detail:

1. ticket_num: Unique identifier for each ticket.
2. requestor_fname: First name of the person who submitted the ticket.
3. requestor_lname: Last name of the person who submitted the ticket.
4. owner_group: The group responsible for handling the ticket (e.g., Software, Security and Governance).
5. issue_category: The category of the issue reported in the ticket (e.g., Access/Login).
6. ticket_type: The type of ticket (e.g., Request).
7. days_open: The number of days the ticket has been open.
8. satisfaction_score: The numerical satisfaction score provided for the ticket.
9. ticket_status: The current status of the ticket (e.g., Open, Resolved).
10. created_date: The date the ticket was created.
11. severity_status: The severity level of the issue reported (e.g., Low, Medium, High).
12. severity_level: The numerical representation of the severity status.
13. satisfaction: The descriptive satisfaction level (e.g., Unknown, Highly Satisfied, Satisfied).
14. Start Date: Date when the match took place.
15. Match Format: Type of cricket match (ODI, Test, T20).
16. Opposition: The opposing team faced by the player's team.
17. Result: Outcome of the match (Win, Loss, Tie, Draw).

ticket_num	requestor_fname	requestor_lname	owner_group	issue_category	ticket_type	days_open	satisfaction_score	ticket_status	created_date	severity_status	severity_level	satisfaction
INC-000001-US-I-A	Jeffrey	Jackson	Software	Access/Login	Request	1	4	Open	10-04-2022	Low	1	Unknown
INC-000002-US-I-A	Stacey	Mcmillan	Security and Governance	Access/Login	Request	17	4	Open	10-04-2022	Low	1	Unknown
INC-000003-US-I-A	Kathleen	Ortiz	Security and Governance	Access/Login	Request	17	4	Resolved	10-04-2022	Medium	2	Unknown
INC-000004-US-I-A	Jessica	Ortiz	Security and Governance	Access/Login	Request	17	4	Resolved	10-05-2022	Medium	2	Unknown
INC-000005-US-I-A	Jessica	Ortiz	Security and Governance	Access/Login	Request	17	4	Open	10-05-2022	Medium	2	Unknown
INC-000006-US-I-A	Jessica	Ortiz	Security and Governance	Access/Login	Request	17	4	Open	10-07-2022	High	3	Unknown
INC-000007-US-I-A	Jessica	Ortiz	Software	Access/Login	Request	17	4	Open	10-07-2022	High	3	Unknown
INC-000008-US-I-A	Michael	Hernandez	Software	Access/Login	Request	17	4	Open	10-08-2022	High	3	Satisfied
INC-000009-US-I-A	Jeffrey	Jackson	Software	Access/Login	Request	17	4	Open	10-08-2022	High	3	Unknown
INC-000010-US-I-A	Julie	Ortiz	Software	Access/Login	Request	17	4	Resolved	10-08-2022	High	3	Highly Satisfied
INC-000011-US-I-A	Jessica	Ortiz	Security and Governance	Access/Login	Request	17	4	Open	10-09-2022	High	3	Unknown
INC-000012-US-I-A	Jessica	Ortiz	Security and Governance	Access/Login	Request	17	4	Open	10-09-2022	High	3	Unknown
INC-000013-US-I-A	Jessica	Ortiz	Software	Access/Login	Request	17	4	Open	10-09-2022	Critical	4	Unknown
INC-000014-US-I-A	Jessica	Ortiz	Software	Access/Login	Request	17	4	Open	10-09-2022	High	3	Unknown
INC-000015-US-I-A	Jessica	Ortiz	Software	Access/Login	Request	17	4	Open	10-09-2022	High	3	Unknown
INC-000016-US-I-A	Jessica	Ortiz	Software	Access/Login	Request	17	4	Open	10-09-2022	High	3	Unknown
INC-000017-US-I-A	Jessica	Ortiz	Software	Access/Login	Request	17	4	Open	10-09-2022	High	3	Unknown
INC-000018-US-I-A	Jessica	Ortiz	Software	Access/Login	Request	17	4	Open	10-09-2022	High	3	Unknown
INC-000019-US-I-A	Jessica	Ortiz	Software	Access/Login	Request	17	4	Open	10-09-2022	High	3	Unknown
INC-000020-US-I-A	Jessica	Ortiz	Software	Access/Login	Request	17	4	Open	10-09-2022	High	3	Unknown
INC-000021-US-I-A	Jessica	Ortiz	Software	Access/Login	Request	17	4	Open	10-09-2022	High	3	Unknown
INC-000022-US-I-A	Jessica	Ortiz	Software	Access/Login	Request	17	4	Open	10-09-2022	High	3	Unknown
INC-000023-US-I-A	Jessica	Ortiz	Software	Access/Login	Request	17	4	Open	10-09-2022	High	3	Unknown
INC-000024-US-I-A	Jessica	Ortiz	Software	Access/Login	Request	17	4	Open	10-09-2022	High	3	Unknown
INC-000025-US-I-A	Jessica	Ortiz	Software	Access/Login	Request	17	4	Open	10-09-2022	High	3	Unknown
INC-000026-US-I-A	Jessica	Ortiz	Software	Access/Login	Request	17	4	Open	10-09-2022	High	3	Unknown
INC-000027-US-I-A	Jessica	Ortiz	Software	Access/Login	Request	17	4	Open	10-09-2022	High	3	Unknown
INC-000028-US-I-A	Jessica	Ortiz	Software	Access/Login	Request	17	4	Open	10-09-2022	High	3	Unknown
INC-000029-US-I-A	Jessica	Ortiz	Software	Access/Login	Request	17	4	Open	10-09-2022	High	3	Unknown
INC-000030-US-I-A	Jessica	Ortiz	Software	Access/Login	Request	17	4	Open	10-09-2022	High	3	Unknown
INC-000031-US-I-A	Jessica	Ortiz	Software	Access/Login	Request	17	4	Open	10-09-2022	High	3	Unknown
INC-000032-US-I-A	Jessica	Ortiz	Software	Access/Login	Request	17	4	Open	10-09-2022	High	3	Unknown
INC-000033-US-I-A	Jessica	Ortiz	Software	Access/Login	Request	17	4	Open	10-09-2022	High	3	Unknown
INC-000034-US-I-A	Jessica	Ortiz	Software	Access/Login	Request	17	4	Open	10-09-2022	High	3	Unknown
INC-000035-US-I-A	Jessica	Ortiz	Software	Access/Login	Request	17	4	Open	10-09-2022	High	3	Unknown
INC-000036-US-I-A	Jessica	Ortiz	Software	Access/Login	Request	17	4	Open	10-09-2022	High	3	Unknown
INC-000037-US-I-A	Jessica	Ortiz	Software	Access/Login	Request	17	4	Open	10-09-2022	High	3	Unknown
INC-000038-US-I-A	Jessica	Ortiz	Software	Access/Login	Request	17	4	Open	10-09-2022	High	3	Unknown
INC-000039-US-I-A	Jessica	Ortiz	Software	Access/Login	Request	17	4	Open	10-09-2022	High	3	Unknown
INC-000040-US-I-A	Jessica	Ortiz	Software	Access/Login	Request	17	4	Open	10-09-2022	High	3	Unknown
INC-000041-US-I-A	Jessica	Ortiz	Software	Access/Login	Request	17	4	Open	10-09-2022	High	3	Unknown
INC-000042-US-I-A	Jessica	Ortiz	Software	Access/Login	Request	17	4	Open	10-09-2022	High	3	Unknown
INC-000043-US-I-A	Jessica	Ortiz	Software	Access/Login	Request	17	4	Open	10-09-2022	High	3	Unknown
INC-000044-US-I-A	Jessica	Ortiz	Software	Access/Login	Request	17	4	Open	10-09-2022	High	3	Unknown
INC-000045-US-I-A	Jessica	Ortiz	Software	Access/Login	Request	17	4	Open	10-09-2022	High	3	Unknown
INC-000046-US-I-A	Jessica	Ortiz	Software	Access/Login	Request	17	4	Open	10-09-2022	High	3	Unknown
INC-000047-US-I-A	Jessica	Ortiz	Software	Access/Login	Request	17	4	Open	10-09-2022	High	3	Unknown
INC-000048-US-I-A	Jessica	Ortiz	Software	Access/Login	Request	17	4	Open	10-09-2022	High	3	Unknown
INC-000049-US-I-A	Jessica	Ortiz	Software	Access/Login	Request	17	4	Open	10-09-2022	High	3	Unknown
INC-000050-US-I-A	Jessica	Ortiz	Software	Access/Login	Request	17	4	Open	10-09-2022	High	3	Unknown
INC-000051-US-I-A	Jessica	Ortiz	Software	Access/Login	Request	17	4	Open	10-09-2022	High	3	Unknown
INC-000052-US-I-A	Jessica	Ortiz	Software	Access/Login	Request	17	4	Open	10-09-2022	High	3	Unknown
INC-000053-US-I-A	Jessica	Ortiz	Software	Access/Login	Request	17	4	Open	10-09-2022	High	3	Unknown
INC-000054-US-I-A	Jessica	Ortiz	Software	Access/Login	Request	17	4	Open	10-09-2022	High	3	Unknown
INC-000055-US-I-A	Jessica	Ortiz	Software	Access/Login	Request	17	4	Open	10-09-2022	High	3	Unknown
INC-000056-US-I-A	Jessica	Ortiz	Software	Access/Login	Request	17	4	Open	10-09-2022	High	3	Unknown
INC-000057-US-I-A	Jessica	Ortiz	Software	Access/Login	Request	17	4	Open	10-09-2022	High	3	Unknown
INC-000058-US-I-A	Jessica	Ortiz	Software	Access/Login	Request	17	4	Open	10-09-2022	High	3	Unknown
INC-000059-US-I-A	Jessica	Ortiz	Software	Access/Login	Request	17	4	Open	10-09-2022	High	3	Unknown
INC-000060-US-I-A	Jessica	Ortiz	Software	Access/Login	Request	17	4	Open	10-09-2022	High	3	Unknown
INC-000061-US-I-A	Jessica	Ortiz	Software	Access/Login	Request	17	4	Open	10-09-2022	High	3	Unknown
INC-000062-US-I-A	Jessica	Ortiz	Software	Access/Login	Request	17	4	Open	10-09-2022	High	3	Unknown
INC-000063-US-I-A	Jessica	Ortiz	Software	Access/Login	Request	17	4	Open	10-09-2022	High	3	Unknown
INC-000064-US-I-A	Jessica	Ortiz	Software	Access/Login	Request	17	4	Open	10-09-2022	High	3	Unknown
INC-000065-US-I-A	Jessica	Ortiz	Software	Access/Login	Request	17	4	Open	10-09-2022	High	3	Unknown
INC-000066-US-I-A	Jessica	Ortiz	Software	Access/Login	Request	17	4	Open	10-09-2022	High	3	Unknown
INC-000067-US-I-A	Jessica	Ortiz	Software	Access/Login	Request	17	4	Open	10-09-2022	High	3	Unknown
INC-000068-US-I-A	Jessica	Ortiz	Software	Access/Login	Request	17	4	Open	10-09-2022	High	3	Unknown
INC-000069-US-I-A	Jessica	Ortiz	Software	Access/Login	Request	17	4	Open	10-09-2022	High	3	Unknown
INC-000070-US-I-A	Jessica	Ortiz	Software	Access/Login	Request	17	4	Open	10-09-2022	High	3	Unknown
INC-000071-US-I-A	Jessica	Ortiz	Software	Access/Login	Request	17	4	Open	10-09-2022	High	3	Unknown
INC-000072-US-I-A	Jessica	Ortiz	Software	Access/Login	Request	17	4	Open	10-09-2022	High	3	Unknown
INC-000073-US-I-A	Jessica	Ortiz	Software	Access/Login	Request	17	4	Open	10-09-2022	High	3	Unknown
INC-000074-US-I-A	Jessica	Ortiz	Software	Access/Login	Request	17	4	Open	10-09-2022	High	3	Unknown
INC-000075-US-I-A	Jessica	Ortiz	Software	Access/Login	Request	17	4	Open	10-09-2022	High	3	Unknown
INC-000076-US-I-A	Jessica	Ortiz	Software	Access/Login	Request	17	4	Open	10-09-2022	High	3	Unknown
INC-000077-US-I-A	Jessica	Ortiz	Software	Access/Login	Request	17	4	Open	10-09-2022	High	3	Unknown
INC-000078-US-I-A	Jessica	Ortiz	Software	Access/Login	Request	17	4	Open	10-09-2022	High	3	Unknown
INC-000079-US-I-A	Jessica	Ortiz	Software	Access/Login	Request	17	4	Open	10-09-2022	High	3	Unknown
INC-000080-US-I-A	Jessica	Ortiz	Software	Access/Login	Request	17	4	Open	10-09-2022	High	3	Unknown
INC-000081-US-I-A	Jessica	Ortiz	Software	Access/Login	Request	17	4	Open	10-09-2022	High	3	Unknown
INC-000082-US-I-A	Jessica	Ortiz	Software	Access/Login	Request	17	4	Open	10-09-2022	High	3	Unknown
INC-000083-US-I-A	Jessica	Ortiz	Software	Access/Login	Request	17	4	Open	10-09-2022	High	3	Unknown
INC-000084-US-I-A	Jessica	Ortiz	Software	Access/Login	Request	17	4	Open	10-09-2022	High	3	Unknown
INC-000085-US-I-A	Jessica	Ortiz	Software	Access/Login	Request	17	4	Open	10-09-2022	High	3	Unknown
INC-000086-US-I-A	Jessica	Ortiz	Software	Access/Login	Request	17	4	Open	10-09-2022	High	3	Unknown
INC-000087-US-I-A	Jessica	Ortiz	Software	Access/Login	Request	17	4	Open	10-09-2022	High	3	Unknown
INC-000088-US-I-A	Jessica	Ortiz	Software	Access/Login	Request	17	4	Open	10-09-2022	High	3	Unknown
INC-000089-US-I-A	Jessica	Ortiz	Software	Access/Login	Request	17	4	Open	10-09-2022	High	3	Unknown
INC-000090-US-I-A	Jessica	Ortiz	Software	Access/Login	Request	17	4	Open	10-09-2022	High	3	Unknown
INC-000091-US-I-A	Jessica	Ortiz	Software	Access/Login	Request	17	4	Open	10-09-2022	High	3	Unknown
INC-000092-US-I-A	Jessica	Ortiz	Software	Access/Login	Request	17	4	Open	10-09-2022	High	3	Unknown
INC-000093-US-I-A	Jessica	Ortiz	Software	Access/Login	Request	17	4	Open	10-09-2022	High	3	Unknown
INC-000094-US-I-A	Jessica	Ortiz	Software	Access/Login	Request	17	4	Open	10-09-2022	High	3	Unknown
INC-000095-US-I-A	Jessica	Ortiz	Software	Access/Login	Request	17	4	Open	10-09-2022	High	3	Unknown
INC-000096-US-I-A	Jessica	Ortiz	Software	Access/Login	Request	17	4	Open	10-09-2022	High	3	Unknown
INC-000097-US-I-A	Jessica	Ortiz	Software	Access/Login	Request	17	4	Open	10-09-2022	High	3	Unknown
INC-000098-US-I-A	Jessica	Ortiz	Software	Access/Login	Request	17	4	Open	10-09-2022	High	3	Unknown
INC-000099-US-I-A	Jessica	Ortiz	Software	Access/Login	Request	17	4	Open	10-09-2022	High	3	Unknown
INC-000100-US-I-A	Jessica	Ortiz	Software	Access/Login	Request	17	4	Open	10-09-2022	High	3	Unknown

3 Analysis and Key Performance Indicators (KPIs)

Total Number of Tickets

- Total Tickets: 9,542
  - This metric indicates the overall volume of tickets handled by the help desk.

Average Satisfaction Score

- Average Satisfaction: 1.007
  - This score reflects the overall satisfaction of users with the help desk services, on a scale from 0 to 3, where a higher score indicates higher satisfaction.

Resolved Ticket Percentage

- Resolved Ticket Percentage: 15.45%
  - This percentage shows the proportion of tickets that have been resolved out of the total number of tickets.

Open Ticket Percentage

- Open Ticket Percentage: 71.44%
  - This percentage indicates the proportion of tickets that are currently open and unresolved.

Ticket Volume

- Average Tickets per Month: Between 112K to 126K
  - The line chart depicts the monthly trend in ticket volume, highlighting fluctuations and peak periods.

Issue/Satisfaction

- Total Satisfaction by Issue Category:
  - Access/Login: Around 3,000 tickets with varying satisfaction levels.
  - Hardware: About 2,000 tickets.
  - Software: Approximately 1,000 tickets.
  - Systemic: About 2,500 tickets.
  - This bar chart shows the distribution of satisfaction scores across different issue categories.

Ticket Feedback

- Ticket Feedback Distribution:
  - Highly Satisfied: Around 3,500 tickets.
  - Satisfied: Approximately 2,500 tickets.
  - Unknown: About 3,700 tickets.
  - Unsatisfied: A small number of tickets.
  - This horizontal bar chart displays the distribution of feedback scores from users.

Ticket Flow Per Week

- Lowest and Highest Ticket Volume per week: 216 to 522 tickets
  - This bar chart illustrates the weekly ticket flow, showing the variability in the number of tickets over different weeks.

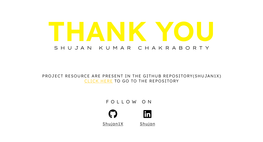
Ticket Status

- Total Tickets per Status:
  - Open: Around 6,000 tickets.
  - Resolved: Approximately 1,500 tickets.
  - Closed : No Action: About 1,000 tickets.
  - Waiting for Requestor Feedback: Around 500 tickets.
  - This bar chart highlights the distribution of tickets across various statuses, emphasizing the number of open tickets compared to others.

Issue Trends

- Total Number of Tickets per Issue Over Time
  - The line chart tracks the trend of different issues over time, providing insights into which issues are increasing or decreasing in frequency.

4 Dashboard layout



5 Dashboard

5 Conclusion

The dashboard presents a detailed analysis of the help desk's performance, highlighting key areas such as ticket volume, satisfaction, and resolution rates. The insights gained from this data can help stakeholders identify trends, prioritize high-severity issues, and improve overall service efficiency. By closely monitoring these KPIs, the help desk can enhance user satisfaction and streamline its support processes.

How to Improve the Service ?

Based on the analysis, the following actions are recommended:

1. Address Open Tickets: Focus on reducing the high percentage of open tickets by improving resolution processes and response times.
2. Improve Satisfaction: Investigate the causes of lower satisfaction scores and implement measures to enhance user experience.
3. Monitor Trends: Continuously monitor ticket volume and issue trends to proactively address recurring problems.
4. Enhance Reporting: Regularly update and review the dashboard to keep track of performance metrics and make data-driven decisions.

By implementing these steps, the help desk can significantly improve its service quality and user satisfaction.

THANK YOU

SHUJAN KUMAR CHAKRABORTY

PROJECT RESOURCE ARE PRESENT IN THE GITHUB REPOSITORY(SHUJANI/K)
CLICK HERE TO GO TO THE REPOSITORY

FOLLOW ON

Shujani/K Shujan