Cherwell Project Documentation

Problem: Improving work efficiency in OTIS help desk by determining which types of tickets struggle the most with by using the metric of time spent until ticket is resolved/closed.

- What category of Incident Requests does the OTIS help desk team spend the most time on?
- What category of Incidents does the OTIS help desk team spend the most time on?
- Hard searching for documentation, documentation isn't properly updated/inconsistent, cannot change/be updated by student associates, access to some documentation is restricted
- "Fed to the wolves" - Isaak

Solution: Addressing what incident and request category skills can be focused/developed further on more to help Help Desk associates complete tickets more efficiently.

- Additional insights on most frequent issues and shortest to complete.
- Recommendation: Dynamic training booklet

Step 1: IMPORTING DATA Retrieve the data as CSV (6/9)

17,568 rows

- Filter the data
- Remove duplicates/incidentals
- Original raw data (17,315 entries)

These are tickets that are assigned and after being redirected/escalated, tickets that can be handled by the Help Desk

First sort by date (1/1/2023), then by ticket team ownership, then sort out duplicates

Filtering:

- Team: OTIS help desk (student associates)
- Tickets filtered from 01/01/2023 to 6/16/2025
  - Ticket created date
  - Ticket resolved date
  - omitted network requests category
  - Incident category (ex: setup worksite, VPN, etc.)
  - Problem description
  - Ticket ID (for primary key/fixing specific issue)
  - Incident type (incident/request)

Step 2: Prepare and Clean Data Sort it further on SQL/Excel if needed

Microsoft Excel:

→**14,988** rows

- Sorted status to only have closed/resolved (removed pending, in progress, and assigned)
- Omitted 275 voicemail tickets to save time (cannot properly categorize)
- Omitted Security Consulting and Education category(40 automated tickets from 2023-2024)
- Omitted Network Requests, 1025 tickets (Login FTE tickets)
    - Omitted 36 delete user account requests
- Omitted Daily reports (961) that were not marked incidental
- Fixed 1500+ incomplete/error category rows via AI
- Corrected date format
- Made separate .CSV file to separate and remove incidental tickets (3,293 entries)
    - Incidentals_MASTER.CSV
- Made separate .CSV file to separate and remove duplicate tickets by incident ID (1,500 entries)
    - Duplicates_MASTER.CSV
- Converted both of these CSVs to be SQL compatible (time-consuming)
- Fixed and refined importing delimiter issues to properly use the .CSV
    - Ex: “Data, Reporting, and Analytics” -> “Data Reporting and Analytics”
- Added Excel filters for easy navigation/analyzing

SQL:

→**13,898** rows

- Removing duplicates
- Import all three tables into SQL
- Create the first left join subquery to create a new refined table without duplicates, merging any duplicate entries
- Using the previous subquery we are able to make a nested statement which further refines the table by comparing it to the *incidental* table

→**11,672** rows

- Removing incidentals

- From this base file, we used a sql script to add two new columns: one to verify whether an incident was breached or not, and then another column to quantify the amount of days taken to handle each ticket.
- Date and time:
    - Assign individual tickets to months
    - Avg days to complete/month
        - Ex: January takes 15 days to complete a ticket
        - Ex: February takes 60 days to complete a ticket
- Create <u>Other</u> category
    - Added because: it describes the average days taken to complete tickets in categories that aren't so prevalent
    - < 100 ticket cutoff being placed into other category
    - Replaced 462 tickets as Other category.
        - 24 Categories replaced for easier reporting:
            - Access Request
            - Training and Outreach
            - Network Request
            - Security Consulting and Education
            - DUO
            - Server and Storage Management
            - SNAC
            - Internal Applications
            - Worksite
            - PeopleSoft
            - IDM
            - Security Policy and Compliance
            - Secure Computing
            - Data Request
            - Data Reporting and Analytics
            - SSO
            - Security Incident Response and Investigation
            - VPN
            - Monitoring and Alert Management
            - Internet
            - PowerApps
            - Wi-Fi
            - Alerts and Monitoring

        - Generative Artificial Intelligence (GenAI)

Step 3: Visualize the data

- Tableau/PowerBI
    - Pie chart for top 10 (including Other?)
    - Bar chart for everything
    - Date/time line chart
    - Breached vs non breached (%) by category (stacked bar chart)

Step 4: Data Analysis

Potential Confounders to Consider/Remove Data Analysis:

- Incident category not accurately updated/listed
- New categories added later (VPN, AI, etc.)
- Incident not resolved at accurate time
- Duplicates
- Incidental Tickets
- Voicemails (time purposes)
- Pending Tickets adding extra days (issue is on another party's end rather than help desk)
- Major updates (Windows 11, program updates, etc.)
- Understaffed period

Practical significance
Real world application

Step 5: Create White Paper + Presentation

- Google Slides
- Present findings

Timeline/Deadline:

Step 1: 6/9 ** DONE
Step 2: 6/12 ** DONE
Step 3: 6/18 ** DONE
Step 4: ** DONE
Step 5: In Progress
FINAL DEADLINE: JULY 31st