Capstone – Case Study 2 (Automation)

Introduction

In the retail industry, the tech support sector faces increasing complexity with growing volumes of incidents from various sources. The need to efficiently manage and classify these incidents has become paramount. Simultaneously, automation and analytics have emerged as industry trends, driving organizations to adopt data-driven decision-making and process automation to streamline their operations.

As businesses get more significant, there are more and more associated individuals, teams, departments, and responsibilities to coordinate. As such, automating their processes means that all the duties are modelled and conducted in one place. Centralizing business processes helps maintain team alignment and produce KPIs they can monitor, spot problems early, and take appropriate actions.

Problem Statement

The retail tech support team is inundated with incidents from diverse sources, each requiring prioritization and summarization for efficient management. Your team's goal is to implement automating the data consolidation process, mapping incidents to priority levels (P1 to P5) and generating five distinct files based on priority at different destinations.

The team is also tasked to provide a summary for each priority queue while deleting source files and ensure error-free execution. The organization targets to reduce manual effort by 50%, minimize data errors, and improve incident handling efficiency by 30%.

The Process

Your team is tasked to currently execute the below process:

- Poll 3 different source paths on the first Monday of the month at 10.00hrs for an incident data file (excel/csv format).
  - When all the incident files are not found, end the current iteration gracefully with an informational notification to the Process Manager. Repeat the polling step after an interval of 1 hour. In case the 3rd poll also yields no result, the process ends.
  - When any of the incident file is found, perform the following:
    - Gather and integrate data from multiple sources into a local working file. Ensure all communications are secure.
    - Categorize the Incident data by the agreed priority definitions.
    - Segregate the data into 5 different output files, each having data by an incident priority (P1 to P5).

- Create summary & insights for each of the output file. At the end, craft a detailed update for the Process Manager.
  - ✓ Top 5 incident resolvers, with their average time to resolve.
  - ✓ Top 5 incident resolvers, with their average time to resolve during holiday season.
  - ✓ Top 5 incidents which exceeded the SLA.
- Consider data from all the 5 output files and publish a summary, which indicates the resolution rates for each resolver. Consider this as the ratio of the number of incidents resolved within SLA to the total number of incidents handled by the resolver. This summary needs to be shared with the Process head via a mail notification.

- At the end of the successful processing, delete the incident data files at the source path. This step concludes with a notification to the Process Manager with the final status. This should have an indicative summary of the comparison of data from source path and combined data from the destination paths.

Challenges to address

1. Merging data from different sources.
2. Mapping incidents to priority levels.
3. Writing data to separate output files.
4. Generating summaries for incident queues.
5. Ensuring data accuracy and consistency.
6. Implementing efficient exception handling.

Additional Specifications

Highlight the use of following as part of the solution design and implementation:

- Tools leveraged for the solution design.
- Automation techniques used in the solution design and implementation.
- Brief of the Walmart infrastructure or resources that have been leveraged / integrated.

Expected Outcomes

Submission of documents:

Please follow the below instruction towards completion of the case study:

- Team presentation (PowerPoint template provided) to be uploaded to Lumen.
- Excel, Power BI, Python solution files to be uploaded to Lumen.
- Please keep the data files for demonstration to the Capstone project evaluation panel. The data file is **not required** to be uploaded to Lumen.

Suggested Incident Priority details

Priority	Description	Resolution Time	Escalation
P1	Critical Priority – Severe impact	Immediate attention and resolution, typically within minutes to hours	Automatic escalation to senior technical staff or managers.
P2	High Priority – High impact	Resolution is expected within hours to a day.	Escalated to senior technical staff or managers if not closed within SLA.
P3	Medium Priority – Moderate impact	Resolution is expected within a few days.	Escalated to senior technical staff if SLA is exceeded.
P4	Low Priority – Minimal impact	Resolution is expected within a few days to a week.	Typically, no escalation is required.
P5	Informational Priority – No Impact	Don't require immediate resolution. Flexible resolution time.	No escalation is necessary.

Evaluation Rubric

Your project submission would be evaluated by the Capstone Evaluation Panel based on the following parameters:

Scope & Depth of the functionality implemented	Presentation of the Capstone case study	Context of the current Walmart Process	Errors encountered and handled in implementation	Innovative thinking built into the solution	Manager observation / Feedback
20	**20**	**15**	**15**	**20**	**10**

Dataset

Associates are advised to source legacy incident dataset from their project engagements.