

# AI-Driven Insights and Automation from Support Ticket Data

## Objective

Your task is to develop an AI/ML solution that extracts meaningful insights from our ticket dump and automates aspects of the support process.

## Data Provided

You will be given a dump of anonymized support tickets. This dataset includes ticket descriptions, categories, response times, and resolutions

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## Key Challenges to Address

### Ticket Classification

Develop a model to automatically categorize tickets into predefined categories (e.g., technical issue, infra issue, etc.). This helps in routing the tickets to the appropriate team.

### Response Time Prediction

Predict the expected resolution time for a ticket.

### Sentiment Analysis

Implement sentiment analysis on ticket descriptions and responses to gauge customer sentiment, which can be a valuable feedback tool for service improvement.

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## Assignment Deliverables

### Developed Models

Include the code for your models. The code should be well-documented and easy to understand.

### Data Preprocessing and Analysis

Describe any preprocessing steps taken. Provide an exploratory data analysis with visualizations to show insights derived from the dataset.

## **Model Evaluation**

Report on the performance of your models using appropriate metrics. Explain your choice of metrics.

## **Report**

Submit a detailed report that includes

- Your approach and methodology.
- Challenges faced and how you addressed them.
- Results and performance evaluation.
- Potential biases in the data and your model, and how they might be mitigated.
- Suggestions for further improvements and future work.

## **Presentation**

Prepare a brief presentation summarizing your findings and methodology. This should be suitable for a non-technical audience.