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MCS 7103: MACHINE LEARNING END OF SEMESER PROJECT:

Ticketing System for Uganda Electricity Distribution Company Limited (UEDCL) Customers

Background

Uganda Electricity Distribution Company Limited (UEDCL) is responsible for delivering reliable electricity services to a diverse customer base across Uganda. Efficient handling of customer complaints and service requests is critical to maintaining high quality of service and customer satisfaction. Currently, UEDCL lacks a centralized system to effectively manage and track these issues. This results in delays, miscommunication, and poor issue resolution, ultimately impacting customer trust and operational efficiency.

Problem Statement

Uganda Electricity Distribution Company Limited (UEDCL) currently lacks an efficient, centralized ticketing system to manage customer complaints, service requests, and inquiries. This leads to delayed response times, poor tracking of issues, and customer dissatisfaction. There is a need to develop a user-friendly, automated ticketing system that streamlines issue reporting, prioritizes and tracks customer tickets, and improves communication between UEDCL and its customers to enhance service delivery and customer satisfaction.

Objectives

Automate the creation of customer complaints: Enable customers to easily register complaints and service requests through multiple channels, ensuring prompt and accurate capture of information.

Classify and prioritize received complaints: Implement an automated mechanism to categorize issues by type and urgency to facilitate timely resolution.

Route tickets to responsible personnel: Automatically assign and forward customer tickets to the appropriate departments or staff members for efficient handling and faster resolution.



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Methodology

1. **Problem Definition:** Clearly define; Automatic ticket categorization, Priority prediction, technical teams available
2. **Data:** Historical ticket data including issue descriptions, timestamps, resolution times, assigned technicians, Service area, region, customer type and technician feedback. Include metadata such as region, voltage issues, or customer type.
3. **Data processing:** Clean ticket dataset by handling missing values, noisy data, and standardizing textual data. seasonality, holidays).
4. **Models:** Classification models like LSTM for ticket categorization or regression models for priority prediction
5. **Evaluation Metrics:** Confusion Matrix (True Positive(TP), True Negative(TN), False Negative(FN), False Positive(FP), Accuracy, recall.
6. **Deployment**

Expected Outcomes

Reduced response and resolution times for customer issues.
Improved accuracy and tracking of complaints and service requests.
Enhanced communication and transparency between UEDCL and its customers.
Increased customer satisfaction and trust in UEDCL services.
Streamlined workflow and accountability within UEDCL support teams.

Conclusion

The development and implementation of an automated ticketing system will address critical operational challenges faced by UEDCL. It will provide a structured platform for managing customer complaints, enable better resource allocation through complaint classification and prioritization, and ultimately improve service delivery and customer relations.