KLE TECHNOLOGICAL UNIVERSITY

B. V. Bhoomaraddi Campus

BACHELOR OF COMPUTER APPLICATIONS

VoAISys - Voice-Assisted Intelligent System

By

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SYNOPSIS

1. Introduction

Customer support is very important in today's digital world. Industries like IT services, telecom, banking, e-commerce, and corporate organizations depend on fast and reliable helpdesk systems. Traditional helpdesks often require customer care executives to manually create tickets, which can cause delays when staff are busy or unavailable.

The ***Customer Speech Recognition and Automatic Helpdesk Ticket Creation (*VoAISys - Voice-Assisted Intelligent System)** system solves this problem by allowing customers to record their issues as voice messages. These messages are converted into text using speech recognition technology, then analyzed with **Natural Language Processing** (NLP). The system automatically creates structured helpdesk tickets, categorizes the issues, and assigns them to the right technical team through an admin dashboard. This ensures quicker responses, reduces manual work, and improves customer satisfaction.

2. Objective

- Reduce customer waiting time during peak support hours.
- Automate helpdesk ticket creation using speech recognition technology.
- Convert customer voice input into meaningful text data.
- Classify issues and assign priorities automatically with NLP.
- Provide an admin panel for easy and efficient ticket management.
- Improve overall efficiency of customer support systems

3. Scope

- Accepting customer complaints through voice recordings
- Converting speech input into text using speech recognition APIs
- Automatically generating helpdesk tickets
- Categorizing issues across multiple domains such as:
    - IT Helpdesk Systems
    - Telecom Customer Support
    - Banking and Financial Services
    - E-commerce Customer Care
    - Corporate IT Support Centers
- Providing an admin dashboard for monitoring and managing tickets
- Displaying analytics and reports for decision-making

4. Existing System

In the existing system, customer issues are primarily handled through live calls, emails, or manual ticket creation. If customer care executives are busy, customers are forced to wait or retry later. Manual ticket creation increases workload, response time, and chances of human error. Most existing systems do not support automated ticket generation from voice inputs.

5. Methodology

The project follows an **Agile** development methodology, allowing incremental development and continuous testing. The system is developed using **Python** and **Flask** for backend processing, **MongoDB** for database management, and **HTML, CSS,** and **JavaScript** for frontend development. Speech recognition and **NLP** modules are integrated to analyze customer voice inputs effectively.

6. Proposed System

The proposed system automates the entire helpdesk ticket creation process by integrating speech recognition and NLP techniques.

Key Features:

- Voice-based issue submission
- Automatic speech-to-text conversion
- Intelligent issue classification and priority assignment
- Automatic ticket generation and storage
- Admin panel for ticket assignment and tracking
- Analytics dashboard for issue trends

This system minimizes manual intervention and ensures faster response times.

7. H/W and S/W Requirement

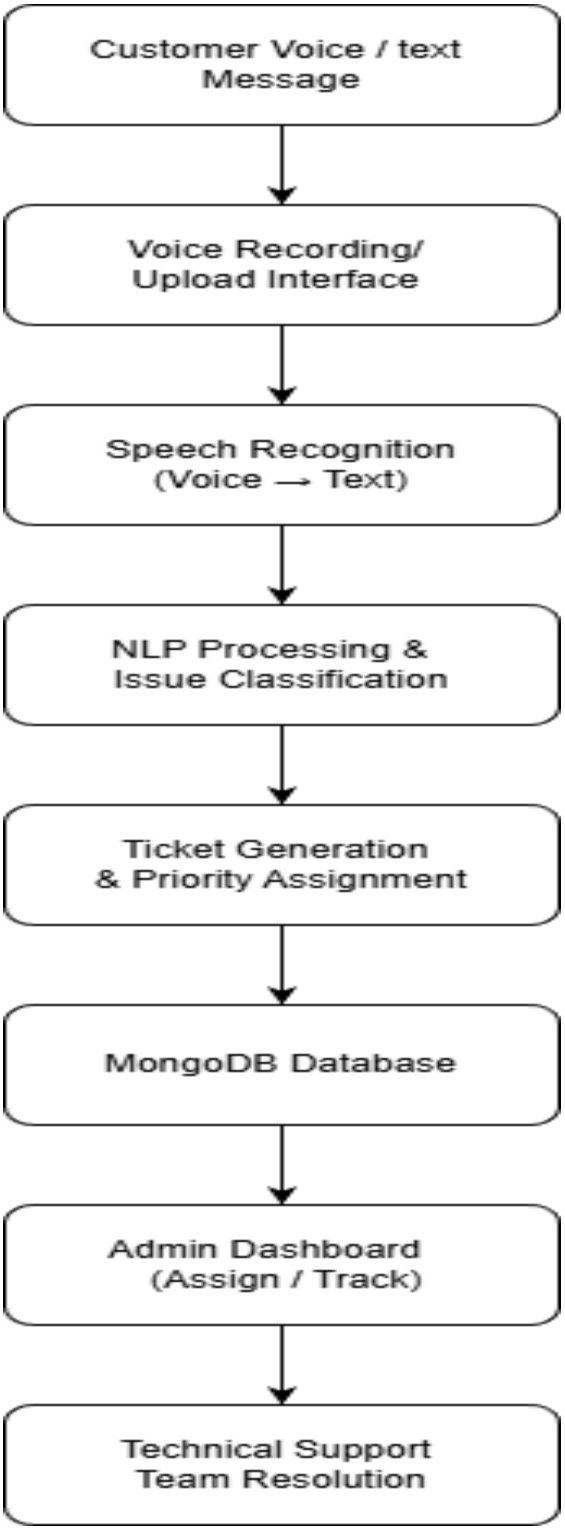
Hardware Requirements:

- Minimum 4 GB RAM
- 10–15 GB free disk space
- Intel i3 / Ryzen 3 processor or higher
- Microphone for voice input

Software Requirements:

- Operating System: Windows / Linux
- Programming Language: Python
- Framework: Flask
- Database: MongoDB
- Frontend: HTML, CSS, JavaScript
- IDE: Visual Studio Code
- Libraries: SpeechRecognition, PyMongo, NLTK

8. Block Diagram



9. Phase-Wise Plan

Phase	Description	Duration
Phase 1	Requirement Analysis	Week 1
Phase 2	System Design	Week 2
Phase 3	Frontend Development	Week 3
Phase 4	Backend Development	Week 4–5
Phase 5	Integration & Testing	Week 6
Phase 6	Deployment	Week 7
Phase 7	Documentation & Presentation	Week 8

10. References

- Python Documentation – https://docs.python.org
- Flask Framework – https://flask.palletsprojects.com
- MongoDB Documentation – https://www.mongodb.com/docs
- SpeechRecognition Library – https://pypi.org/project/SpeechRecognition/
- NLP Concepts – https://www.nltk.org