# Solution Approach

## 1. Introduction

The **Customer Service Platform** is designed to streamline customer interactions by enabling users to submit categorized queries and seamlessly integrates with Intercom for real-time support. The solution ensures secure user authentication, efficient query management, and effective communication between users and support agents. **TensorGo Technologies**, with its powerful machine learning and computer vision products, plays a crucial role in shaping the smart solutions for this platform. Through its cutting-edge technologies, TensorGo can enhance data processing and problem-solving capabilities within the customer service ecosystem.

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## 2. Objectives

The primary objectives of the solution are:

- **Secure user authentication** using Google OAuth.
- **Efficient query categorization** and management.
- **Seamless integration** with Intercom for enhanced user-agent communication.
- **Persistent data storage** and retrieval using MongoDB.
- Leveraging TensorGo's **AI/ML technologies** for enhanced data processing in query handling and automation.

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## 3. System Architecture

High-Level Architecture:

- **Frontend**: Built with **React** and **Tailwind CSS**, the frontend handles user interactions, query submissions, and displays categorized data.
- **Backend**: Developed using **Node.js** and **Express.js**, the backend manages authentication, API endpoints, and integration with Intercom.
- **Database**: **MongoDB** is used for persistent storage of user and query data.
- **Machine Learning/AI Integration**: In the future, **TensorGo's ML and computer vision APIs** can be integrated to automatically categorize and prioritize queries based on the content of the user's request.

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## 4. Key Features

- **Secure Authentication**: Google OAuth ensures safe login and session management.
- **Query Categorization**: Organized display and retrieval of queries by category, with potential future integration of **TensorGo's AI models** to improve automated categorization.
- **Real-Time Support**: Intercom integration facilitates instant communication between users and support agents.
- **Data Persistence**: MongoDB ensures reliable storage and retrieval of data.

- **AI-Powered Automation**: By integrating **TensorGo's deep learning models**, the system can intelligently automate query management and suggest solutions in real time.

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# Solution Workflow

### 4.1 User Authentication

1. Users log in via **Google OAuth**.
2. The backend verifies the Google token and generates a session for the user.
3. On successful login, users are redirected to the dashboard.

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### 4.2 Query Submission and Management

1. Users can create a new request by selecting a category and adding a comment.
2. The frontend sends the request data to the backend via the `/services` POST API.
3. The backend saves the data in **MongoDB** under the appropriate category.
4. Queries are displayed in their respective categories on the dashboard.
5. In the future, **TensorGo's AI solutions** can be used to automate categorization based on query content.

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### 4.3 Intercom Integration

1. The **Intercom widget** is embedded in the frontend for direct communication with support agents.
2. Each query submitted by the user is also sent to **Intercom** via the backend.
3. Support agents can interact with users directly through **Intercom**.

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### 4.4 Logout Functionality

1. Users can securely log out by clicking the **Logout** button, which ends the session and redirects them to the login page.

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## 5. Technologies Used

| Component | Technology |
|---|---|
| **Frontend** | React, Tailwind CSS, TypeScript |
| **Backend** | Node.js, Express.js, TypeScript |
| **Database** | MongoDB |
| **Third-Party Tools** | Intercom API, Google OAuth |
| **AI/ML Integration** | TensorGo AI/ML APIs for advanced data processing (Future Integration) |

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## 6. About TensorGo Technologies

**TensorGo Technologies** is an enterprise-grade low-code PaaS company specializing in **computer vision** and **machine learning** products. By integrating TensorGo's APIs, this **Customer Service Platform** can potentially enhance query categorization, automate response suggestions, and improve the overall customer experience. TensorGo's custom-built, state-of-the-art neural networks help businesses tackle complex challenges with deep learning and AI technologies, making processes smarter and more efficient.

With the integration of **TensorGo's deep learning models**, this platform will be empowered to better automate and optimize query management, enhancing its capabilities for businesses worldwide.

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## 7. Conclusion

The proposed solution effectively addresses the challenges of managing customer queries by integrating secure authentication, query categorization, and real-time support. The system is scalable, user-friendly, and enhances the overall customer experience. By leveraging **TensorGo's AI-powered solutions**, the platform has the potential to revolutionize query management and improve customer-agent communication.