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**Title: Smart Gas Cooking Bottle IoT baseds Monitoring System**

**Introduction:**

The smart gas cooking bottle monitoring system aims to enhance safety and convenience in cooking environments by providing real-time monitoring and alerts for gas cooking bottles. It ensures efficient gas usage, prevents gas leaks, and offers user-friendly control and monitoring features.

**System Components and their Functions:**

**1. Gas Sensors**: These sensors are attached to the gas cooking bottle and monitor parameters such as gas level, pressure, and temperature.

**2. Central Monitoring System:** It receives data from the gas sensors, processes the information, and triggers alerts or notifications in case of low gas levels, abnormal pressure, or potential leaks.

**3. Communication Network**: A wireless communication network enables data transmission between the gas sensors and the central monitoring system.

**4. User Interface:** The system provides a mobile or web-based interface for users to monitor gas levels, receive notifications, and control gas usage.

**Data Collection Parameters:**

The system collects data on gas levels, pressure, and temperature inside the cooking bottle. This data is continuously monitored to ensure efficient gas usage and early detection of potential leaks or abnormal conditions.

**System Design and Implementation**:

The smart gas cooking bottle monitoring system is designed as a compact and easily attachable module that can be integrated with standard cooking gas bottles. Gas sensors are placed on the bottle, wirelessly transmitting data to the central monitoring system. The central monitoring system analyzes the data, provides real-time information to users, and ensures timely alerts or notifications in case of any anomalies.

**Use Cases and Applications:**

**1. Home Kitchens:** The system ensures safe and efficient gas usage in home kitchens, providing peace of mind to users while cooking.

**2. Restaurants and Catering Services:** The monitoring system helps commercial kitchens maintain gas supply levels, prevent gas shortages during peak hours, and detect potential leaks promptly.

**Software or Mobile Interface and Functionalities:**

The software or mobile interface provides users with convenient access to the smart gas cooking bottle monitoring system. Key functionalities include:

**- Real-time gas level monitoring:** Displaying current gas levels in the cooking bottle.

**- Low gas alerts:** Notifying users when gas levels are running low, allowing for timely replacements.

**- Leak detection:** Promptly alerting users in case of potential gas leaks, ensuring rapid response and safety.

**- Usage history and analytics:** Providing access to historical data on gas usage patterns, facilitating efficient management and planning.

**Conclusion:**

The smart gas cooking bottle monitoring system enhances safety and convenience in cooking environments by providing real-time monitoring, gas level alerts, and leak detection. With its user-friendly interface and advanced sensors, the system ensures efficient gas usage, reduces the risk of accidents, and offers peace of mind to users in both residential and commercial kitchens.