**Audio Detection and Monitoring System**

**Overview**

This project implements an audio monitoring system that listens for specific keywords or suspicious phrases in real-time audio streams. The system utilizes Python libraries like pyaudio, pydub, and speech\_recognition to capture, process, and analyze audio data. Detected keywords trigger alerts and are logged for reporting.

**Features**

* **Real-Time Audio Monitoring**: Continuously captures audio data through the system's microphone.
* **Keyword Detection**: Detects predefined keywords such as "help", "answer", and "cheat".
* **Logging and Reporting**: Logs suspicious events and generates detailed reports.
* **Error Handling**: Robust error handling to manage exceptions and ensure stability.

**Requirements**

* Python 3.6+
* pyaudio
* pydub
* numpy
* speech\_recognition
* wave
* logging
* threading
* queue

**Installation**

1. Install the required Python packages using pip:
2. pip install pyaudio pydub numpy SpeechRecognition
3. Download and install FFmpeg. Set the FFMPEG\_BINARY and FFPROBE\_BINARY paths in the script accordingly.

**Usage**

1. **Setup**: Ensure that the ffmpeg and ffprobe binaries are correctly set in the environment.
2. **Run the Script**: Execute the audio-detection.py script to start monitoring.
3. python audio-detection.py
4. **Monitoring**: The system will start monitoring for audio input and analyze chunks for keywords.
5. **Stop Monitoring**: Use a keyboard interrupt (Ctrl+C) to stop monitoring.

**Configuration**

* **Threshold**: Set the audio detection threshold in the AudioMonitor class constructor.
* **Keywords**: Customize the list of keywords to detect by modifying the keywords parameter.

**Logging**

All events are logged in the audio\_monitor.log file with timestamps and event descriptions.

**Generating Reports**

Reports can be generated to review suspicious events. The report includes the total number of events and details about each event.

**Example**

monitor = AudioMonitor(threshold=0.15, keywords=['help', 'answer', 'cheat', 'hello', '123'])

monitor.start\_monitoring()

**License**

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Spearheaded initiatives to empower female athletes by fostering leadership skills, promoting inclusivity, and creating opportunities for girls to excel in cricket, contributing to increased participation and team cohesion.

Designed and implemented specialized training programs that addressed the unique needs of female athletes, focusing on skill development, fitness, and mental toughness, resulting in improved team performance and individual growth.

Established partnerships with schools, local clubs, and community organizations to promote girls' cricket, organizing workshops and outreach programs that encouraged young females to take up the sport, thereby boosting community involvement and support for the team

Scheduled and managed regular badminton practice sessions, ensuring all players had access to well-structured training to improve their skills

Maintained clear and consistent communication with team members regarding practice schedules, match fixtures, and any updates to ensure smooth coordination

Ensured all badminton equipment, including rackets, shuttlecocks, and nets, were available, well-maintained, and ready for use during practices and matches