Home/Industry Automation using IoT:

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Abstract: - Internet of Things (IoT) is rapidly increasing technology. IoT is the network of physical objects or things embedded with electronics, software, sensors, and network connectivity, which enables these objects to collect and exchange data. In this paper, we are developing a system which will automatically monitor the Home/Industrial applications and help the user to take decisions using the concept of IoT. IoT has given us a promising way to build powerful industrial systems and applications by using wireless devices, Android, and sensors. The main contribution of this review paper is that it summarizes uses of IoT in industries facilitation the user to monitor and control the Industry using remote calls and controls over the internet.

Index Terms— Remotely Controlled Access, IoT, Sensors, embedded electronics.

1. INTRODUCTION.

In recent years a wide range of industrial **IoT** applications has been developed and deployed. Evolution of this starts from **RFID** technology, which allows microchips to transmit the identification information to a reader through wireless communication. Another technology is the **wireless sensor networks (WSNs)**, which mainly use interconnected intelligent sensors to sense and monitoring. In a previous time, Industry was monitored manually, but this paper introduces Artificial Intelligent to monitor as well as control the Industry autonomously without human intervention.

2. GOALS AND OBJECTIVES.

To develop a system using **Raspberry Pi** or any **Microcontroller** which will automatically **Monitor** the **Home/Industrial Applications** and generate **Alerts/Alarms** and **snotify** the user regarding any problems in the industry or any process and to

Provide the user with **Multiple Ways** to **Access and Control** the **Security Measures** and **Loads** using **IoT**.

3. EXISTING SYSTEM

- No ways to detect a un-even condition in Home/Industry.
- Manual intervention required for monitoring.
- CCTV used which only monitor but no Alert generation.
- Alert and their appropriate actions not present manually.
- Time-consuming approach to detect and generate Alert Manually.

4. NEED OF THE SYSTEM

- Home/Industry alert is based on manual intervention.
- Notification for any circumstances in Industry not provided.
- Appropriate action for this condition taking.

5. OVERVIEW OF THE SYSTEM

In this modern era of automation and advanced computing, using IoT with Raspberry pi or any other Microcontrollers offer promising solutions towards the automation of Home/Industry. In order to understand the development of IoT in industries, this paper reviews the current research of IoT, key enabling technologies, major IoT applications in industries, and identifies research trends and challenges. The Internet of Things allows objects to be sensed and controlled remotely across existing network infrastructure.

Sensors (Temperature sensor, Pressure sensor, Humidity sensor, Vibration sensor, Intrusion sensor) are used to percept the environment and object conditions. Analog signal is provided to the Raspberry pi produced by sensors. Each sensor is interfaced with the Raspberry Pi using python programming. The threshold or safety limits for those signals are set by the Programmer in the python code itself. The Raspberry Pi checks the incoming Analog Signals against the safety limits set in the code, When it encounters an uneven condition devices (Buzzer, Alarm, motor, fan) are used to take accurate measures such as Alarm/Alert are generated, it sends messages and emails to Admin. Then the Admin can take appropriate measures using Remote Access to the Safety Measures installed in the places using internet or SMS or the User can also access them locally.

6. CONCLUSION

Nowadays we need everything computerized. Earlier we can only monitor the situations with the help of cameras. In Industries to reduce manual overhead, we have implemented Internet of Things (IoT) in Industry to monitor as well as to inform the responsible person to take appropriate measures, but this will partially fulfill our requirement. As sometimes it will be late in this process and it will harm to property as well as life. For this purpose, we are developing a system for Industrial Automation using IoT with the help of Raspberry Pi and Safety Measures Implemented to make system automated and save damage to the property.