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An Overview of Industrial Automation Based on IOT

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Abstract : Availability of high speed mobile networks and Long Term Evolution has given a tremendous growth in terms of providing various services and applications at the fingertips of the citizens. In our project we are monitoring the real time temperature and relative humidity. Here the monitoring node is raspberry pi. The sensor used here is DHT11 humidity sensor.[1] The raspberry kit is programmed using python and java language. The temperature is displayed in degree. In our project we send the command on server side of our laptop and on a web server receives the input commands from the user and appropriately sends it to the raspberry pi. In this we will be using those input commands to turn a light ON/OFF. When we give the command to turn on a light by the server side script, the data and information gets relayed to the raspberry pi and its GPIO pin will turn on a light [2].

Keywords: To build the system which can monitor the sensor data and upload it over internet and also capable of taking some crucial decision within industries using the IoT.

I. INTRODUCTION

The Internet of Things can be described as connecting everyday objects like smart phones, Internet TVs, sensors and actuators to the internet where the devices are intelligently linked together enabling new forms of communication between things and people, and between things themselves.[2]

The Internet has come a long way over the last 30 years. Old fashioned IPv4 is giving way to IPv6 so that every device on the Internet can have its own IP address. Machine to machine communication is on the rise, enabling devices to exchange as well industry leaders predict that the number of connected devices will surpass 15 billion nodes by 2015 and reach over 50 billion by 2020.Home automation or smart homes can be described as introduction of technology within the home environment to provide convenience, comfort, security and energy efficiency to its occupants. Adding intelligence to home environment can provide increased quality of life.

II. LITERATURE SURVEY

Internet of things is being developed quickly without deliberation of security. According to Survey conducted in 2014, 39% of the people said that security is the biggest concern in accepting Internet Of Things technology, this being a major challenge in IoT. [3]The sensitivity of a network of clever devices was conversed in the early hours of 1982, with a modified Coke machine at Carnegie Mellon University, it is the first Internet-connected appliance, able to report its inventory and whether newly loaded drinks were cold Internet of things is being developed rapidly without consideration of security. The health monitoring devices such as blood pressure monitors and heart rate monitors and other complex devices capable of monitoring focused implants. [3]

Hospitality sector have begun implementing smart beds that can detect when the patient occupy bed and when makes an effort to get up , controlling blood pressure of patient without the manual interference of nurses. Dedicated sensors can also be outfitted within hospital to monitor the health of patients. The term "Internet of Things" suggested by Peter T. Lewis in 1985.[4]Earlier works on these lines were proposed on various approaches as follows:

The environmental monitoring applications of the IoT uses sensor to assist in environmental protection by observing air or water prominence, atmospheric or soil disorders and arrangements of wildlife and their natural habitats.[5] IoT also provide way for detecting calamities like earthquake or tsunami and provide early warnings.

III. PROPOSED METHODOLOGY

A. General Concept of IoT

IOT is a kind of network that can connect objects with network for data exchange and communication using fixed protocol. IoT can make billions of networked embedded devices also called smart items. These devices are capable of gathering data about themselves, environment and devices associated and communicate this information with desired devices and system connecting with internet. Applications are designed based on IoT enabled devices for monitoring and control in various domain including home automation, health monitoring applications, smart cities, smart agriculture etc.[6]

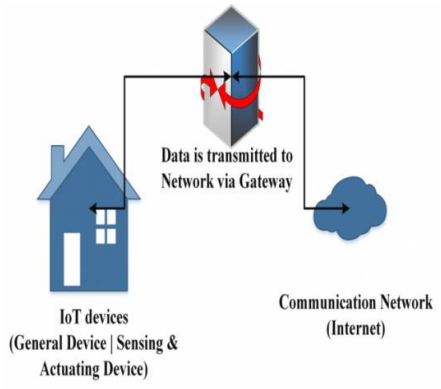

Fig. 1: General concept of IoT

B. Sensors & Wireless Sensor Networks

Wireless sensor network refers to a group of spatially dispersed and dedicated sensors for monitoring and recording the physical conditions of the environment and organizing the collected data at a central location. WSNs measure environmental conditions like temperature, sound, pollution levels, humidity and so on**.**

C. Wireless Sensor Networks (WSNs)

A Wireless sensor network is one kind of wireless network includes a large number of circulating, self-directed, minute, low powered devices named sensor nodes called motes. These networks certainly cover a huge number of spatially, little, battery operated, embedded devices that are networked to caringly collect, process, and transfer data to the operators, and it has controlled the capabilities of computing and processing. [6]

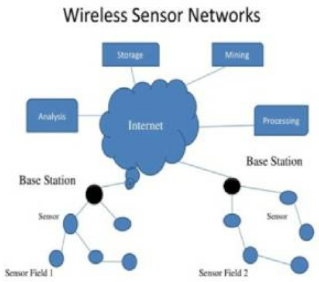

Fig. 2: wireless sensor networks

D. Cloud Computing

Cloud computing is the delivery of computing services-servers, storage, databases, networking, software, analytics, intelligence and more over the internet to offer faster innovation, flexible resources and economies of scale. Cloud computing is also used to store the information from home appliances.[6]

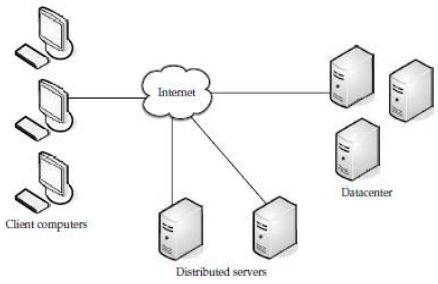

Fig. 3: cloud computing

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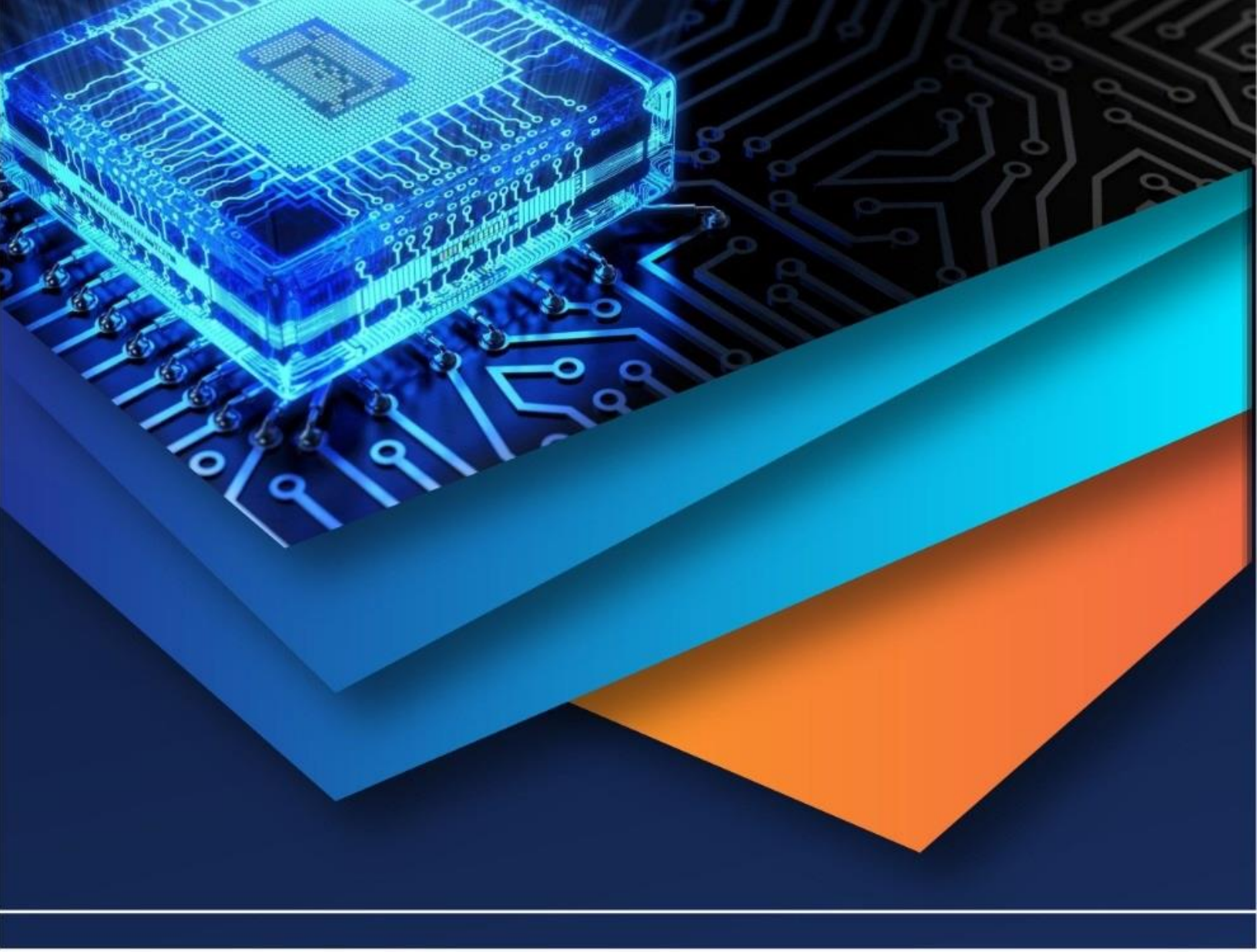

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