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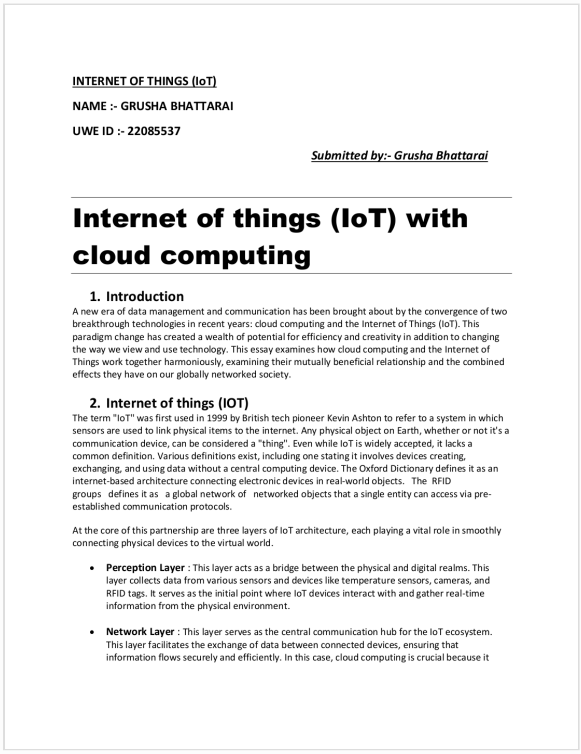

INTERNET OF THINGS (IoT)

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Internet of things (IoT) with cloud computing

1. Introduction

A new era of data management and communication has been brought about by the convergence of two breakthrough technologies in recent years: cloud computing and the Internet of Things (IoT). This paradigm change has created a wealth of potential for efficiency and creativity in addition to changing the way we view and use technology. This essay examines how cloud computing and the Internet of Things work together harmoniously, examining their mutually beneficial relationship and the combined effects they have on our globally networked society.

2. Internet of things (IOT)

The term "IoT" was first used in 1999 by British tech pioneer Kevin Ashton to refer to a system in which sensors are used to link physical items to the internet. Any physical object on Earth, whether or not it's a communication device, can be considered a "thing". Even while IoT is widely accepted, it lacks a common definition. Various definitions exist, including one stating it involves devices creating, exchanging, and using data without a central computing device. The Oxford Dictionary defines it as an internet-based architecture connecting electronic devices in real-world objects. The RFID groups defines it as a global network of networked objects that a single entity can access via pre-established communication protocols.

At the core of this partnership are three layers of IoT architecture, each playing a vital role in smoothly connecting physical devices to the virtual world.

- **Perception Layer** : This layer acts as a bridge between the physical and digital realms. This layer collects data from various sensors and devices like temperature sensors, cameras, and RFID tags. It serves as the initial point where IoT devices interact with and gather real-time information from the physical environment.

- **Network Layer** : This layer serves as the central communication hub for the IoT ecosystem. This layer facilitates the exchange of data between connected devices, ensuring that information flows securely and efficiently. In this case, cloud computing is crucial because it