Chapter 6
Recent Developments of Network Monitoring Systems and Challenges

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ABSTRACT

Every time the human race advances in terms of technology, health is always a significant issue. The recent Corona virus assault, which has harmed China's economy to some degree, is an illustration of how healthcare has grown more important. It is always a better option to monitor these individuals utilising remote health monitoring equipment in regions where the pandemic has spread. As a result, the current answer is an internet of things (IoT)-based health monitoring system. Remote patient monitoring allows for patient monitoring outside of traditional clinical settings (e.g., at home), which increases access to human services offices while lowering costs. The main goal of this project is to develop and construct a smart patient health monitoring system that utilises sensors to monitor patient health and the internet to notify loved ones if there are any problems.

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1. INTRODUCTION

The medical institution would not be within walking distance of the locals in most rural regions. As a result, most individuals have doctor's appointments, hospitalizations, and diagnostic testing procedures. Temperature and pulse recognition are used by each of our bodies to assess our overall health. The sensors are connected to a microprocessor that tracks the status and is therefore interfaced to an LCD panel, as well as a remote connection that may exchange alerts. If the framework detects any unexpected changes in heart rate or body temperature, it notifies the client about the patient's condition through IoT and also displays subtle aspects of the patient's pulse and temperature in real time on the web. In this way, an IOT-based tolerant wellbeing tracking framework effectively uses the web to monitor silent wellbeing measures and save time. Between pulse rate and other factors, there is a considerable capacity. When a person's health problem has progressed to the point where his or her life is in jeopardy, they seek medical help, which may result in an unnecessary waste of money. This is important to consider, particularly when an epidemic spreads in a region where physicians are unable to reach. To prevent the transmission of illness, giving patients a smart sensor that can be monitored from afar would be a practical solution that might save many lives (Duz 2018-Garcia A 2020).

Cloud Computer is a service paradigm that provides computing resources such as processing power, storage, and bandwidth to an organization's IT services. Many companies are quickly adopting this service model since it provides many economic opportunities, particularly in terms of financial investment and human resources. Because cloud services allow organisations to lease resources from the cloud service provider, they may avoid setting up a data centre for their IT infrastructure or procuring hardware and software for their business applications. Initial cloud computing providers such as Amazon EC2, Google Apps Engine, Microsoft Azure, and SalesForce.com give significant economic value to interested businesses that wish to subscribe to services with a pay-per-use, on-demand, and specified SLA model (SLAs). Google Apps Engine, for example, guarantees a monthly uptime percentage of 99.00 percent - 99.95 percent for its covered services. They provide five minutes of uninterrupted downtime during the downtime duration (Kularatna, 2008; Rajavaraprasad, 2011).

This package is appealing to the client since they are able to regulate resource consumption and demand more, quicker, and dependable infrastructure. The resources in the cloud, on the other hand, are shared to service many subscribers. The provider employs a multi-tenancy architecture in which resources (both real and virtual) are dynamically allocated depending on tenant needs. The resources will be assigned depending on the lease and SLA agreement, with various customers requiring more or fewer virtual resources. As a result, as the demand for cloud services grows, the