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Evolution of IOT Data Management System

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Abstract-

The Internet of Things (IOT) presents Database Management Systems (DBMS) with a new problem. In everyday life, a huge number of sensors are used for the cloud computing. These devices generate a large amount of data streams, which must be managed by a suitable database management system. The DBMS poses a severe problem in determining how to process and store a large variety of data data in the context of a IOT. Relational DBMSs and Non-relational DBMSs are the two basic types of database management systems. This study seeks to provide a comprehensive comparison of two major open-source database management systems.: Mysql is a database management management system, while Mongodb is a non-relational database management system. In Cloud technology, the activity of the enzyme database systems is evaluated by comparing the insertion and retrieval of enormous amounts of data.

KEYWORDS: MongoDB, Heterogeneous data, IoT

I. INTRODUCTION

Many businesses, such as smart homes, industrial control, pharmacy and hospital surveillance, accessible online data, and weather stations, now rely on Internet of Things (IOT) technologies [1-5]. IoT is a data-sensing, data-collection, and data-sharing technology. As a consequence of such a system, a considerable volume of IOT data is exchanged. Internet of things produces a vast variety of data data, such as words, numbers, music, videos, and photos [6]. Data of this nature must be transported, processed, and saved in a cloud server [7]. The major goal of this work is to identify a good technique to handle and store a big variety of data data in a database management system [8-9]. This goal is achieved by conducting extensive tests to compare and analyse the quality of two database systems: MySQL even as relational database versus MongoDB as a non-relational database system. Speed and database capacity are among the outcome measures.**[10-14].**

II. IDENTIFY,RESEARCH AND COLLECT IDEA

SCOPE

To analyzed the accuracy of both SQL and non-SQL databases while dealing with massive amounts of heterogeneity IoT data.Create a cloud-based framework enabling IoT-based apps that store, share, and process enormous amounts of data sets.

OBJECTIVE

This goal is achieved by conducting extensive tests to evaluate and assess the performance of different types of databases: MySQL as a relational database and MongoDB as a non-relational database system. In evaluation criteria, time and database storage are introduced**.**

III. ANALYSIS OF THE LITERATURE

[3.1] Comparison between SQL and NoSQL databases and their relationship with big data analytics.

A repository that can be accessed by a large number of people is a crucial component of cloud

computing. Spread information storage techniques have become the de facto way for data preservation for the younger breed of online apps utilised by businesses. NoSQL (typically perceived as "not simply SQL" by developers) databases are becoming more popular in the field of information storage [15-20].

[3.12]GSPN-Based Reliability-Aware Performance Evaluation of IOT Services

With the increasing acceptance of Internet of Things (IOT) solutions in a variety of real-world scenarios, efficiency became a critical need. However, reliability-enhancing approaches like network anomaly detection and restoration have a major impact on edge efficiency. Using expanded stochastic Petrinet solid modeling, this research presents an effective way to seriousness performance review for recoverable IOT services[21]

[3.13]Analyze relational and NoSQL databases for carrying IOT data

The amount of data saved in Internet of Things (IOT) processing facilities has skyrocketed. Database suppliers compete for sales and profits by developing new processes, overcoming the shortcomings of prior releases, and offering innovative apps for the IoT business. Storing and resurrection of sensory information is the key bottleneck that defines the border demand of Connected devices, taking into account the massive quantity of data space and test situations, as well as the rapid expansion and the use of Iot systems [22-25].

[3.14] Performance Evaluation of MongoDB, Cassandra, and HBase for Heterogeneous IOT Data Storage

The Internet of Things generates a lot of data in such a short amount of time. Because sensor network data is so varied, it can be classed as organised or unstructured information. In this type of information, a system that can handle a wide range of data is really useful. The resolution to this information diversity challenge is NoSQL. The outcomes of a measurement of different Database systems employing MongoDB, Cassandra, and HBase were presented in this study. Testing is carried out on IOT frameworks developed in prior studies. **[26-30]**

IV. METHODOLOGY

Existing theory

According to current theory, the IOT presents a significant issue for the database management system (DBMS) in determining how to store and handle a large volume of diverse data. The greatest number of records that can be stored is limited. There is only one forecasting model employed.**[31-36]**

1. SYSTEM ARCHITECTURE:

The proposed system demonstrates how to manage and store IoT signals. The data from the sensor is collected by the sensor station. The data in the cloud server is stored on the remote server. The information is analysed in the cloud server and then transferred to the databases. Then the database show the all sensor database.**[11-14]**

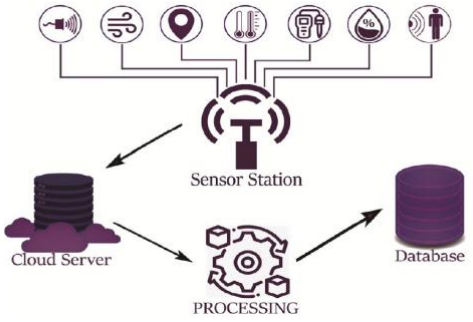

Figure 1: Managing and storing the IOT data.

2. FLOW DIAGRAM:

A flow diagram (FD) shows out the flow of data for any process or system. It uses explain symbols like rectangles, circles and arrows, plus short text labels, to show data inputs [37-42].

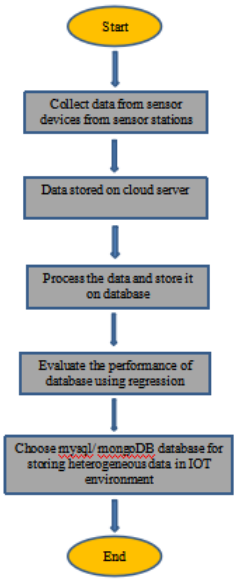

Figure 2: Flow Diagram

3. USE-CASE DIAGRAM:

Use case diagram shows how the users(actors) expect to interface with & get a benefit from the system/software**.**

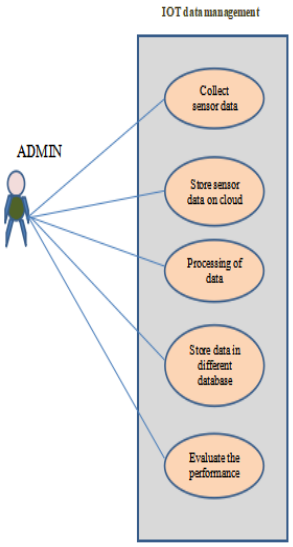

Figure 3 : UseCase Diagram

V. CONCLUSION

The IoT's potential is enormous, and its impact is already being felt in our daily lives. The creation of modifications includes assisting patients, coordinating item deliveries, and directing

traffic systems. Since IOT is a world of networked items that are constantly changing, various new difficulties emerge from datacomponent, connectivity, and technology. Process - control and efficiency difficulties have arisen as a result of the modern quantities of information generated. It appears to be a perfect situation, as different ways may be appropriate for various purposes. As long as the complexity of data in IoT remains unimaginable, we must consider whether our present database system, querying, and indexing technologies are enough.

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