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Review Paper on Crime Evidence Management and Verification using Blockchain

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ABSTRACT-In the modern, technological era, data plays a crucial role in every phase of work. Data should be secure since it can change. We'll talk about data capacity and representation in heterogeneous organizations. Information that is important to a certain association may be attacked. As cybercrime grows quickly, attackers act cunningly to alter those data.

Be Regardless, it has a significant impact on the predicted scientific provenance. Since the forensic evidence travels through numerous stages during scientific examination, it is expected to be maintained in this way. To create the clear framework, the produced report goes via many levels or delegates during this approach, including the pathology lab, forensic lab, police, and so on to make the straightforward framework with changelessness of measurable confirmations, blockchain technology innovation is moreappropriate.

KEYWORDS: Forensic evidence, Blockchain Technology, Cyber Crime, Framework

I.INTRODUCTION

Blockchain is a network of interconnected squares that stores and records all activity occurring on a distributed computing system. Dispersed in nature, it has replaced conventional stages. Various examples of idea implementations, models, and application frameworks employ blockchain innovation. As a result of the frequent occurrence of cybercrimes in this potent era, it is essential to check the starting and connection of these crimes and provide sophisticated proof. Online proof comes with a number of issues. The chain of guardianship chain might be seen as a framework for holding and documenting the real history of advanced proof handling.

Electronic forensic evidence progresses through many levels of orderly progression, moving from less aware material to more reliable material forhandling cybercrime exams. During this exchange ofcomputerized confirmations, trustworthiness and disavowal are typically broken down in a complex manner. A framework that ensures accountability, unwavering quality, security, and reviewability is necessary for the hour.

1.1 Objective Of Research

The major goal of this system is to offer suggestions for effective ways for the government to keep track of criminals' records.Authorities will be able to add and access criminal data, such as law enforcement agencies and courts.To enforce the law, proper and prompt access to real criminal records is necessary.

By eliminating any chance of tampering with criminal records data, this will cut off an entire scope of corruption and lessen its impact on law enforcement.

II. LITERATURE REVIEW

[1] A system built on Blockchain technology is used to obtain criminological reports. Each hub's refreshes are visible to the director hub.Every time a new report is added to the chain, an exceptional hash is generated using cryptographic principles. When a report is added to the first square, if the other hub tries to transfer it, the report will apply to the entire chain. This demonstrates the constant nature. The framework is undoubtedly recognizable, which adds simplicity.

[2] Because blockchain consciously promotes integrity, openness, legitimacy, security, and auditability, adopting it may be the simplest course of action for maintaining and advancing the scientific chain. Blockchain technology aids

in bringing the 000 assurance for criminological local area and aids in grinding reduce with more trust. The longer-term project aims to build an entire Ethereum-based smart computerized scientific chain of guardianship via clever contracts. Due to advancements in technology and the widespread use of the internet, cloud computing has become more and more common. Forensic techniques are now used to investigate attacks on larger clouds of data. The results of the investigation.

[3] The use of cloud-based approaches in legal sciences to look into attacks on larger cloud data storage has increased because to innovative advancements and broad online use. The commitment of distributed computing in advanced legal sciences has been addressed as a result of the varied study. The study's attention is drawn to the various phases of conventional and cloud-based computerized legal services.

[4] B-CoC is an engineering that uses blockchain technology to dematerialize CoC interactions in computerized criminology. We also provided a model of the B-CoC technology that supported the Geth implementation of Ethereum hubs. B-CoC shown to be a respectable aid for the CoC interaction, according to the presentation evaluation, because it is equipped to support sufficient responsibility with a suitable upward in terms of memory-adapted storage.

[5] A brand-new framework for computerized proof management is suggested that makes advantage of Blockchain technology.Blockchain serves as an example of how to apply the concepts of reliability, simplicity, security, credibility, and auditability. This makes it one of the best selections in regards to everything regarding the maintenance and continuation of the scientific chain of custody.

III.PROPOSED METHODOLOGY

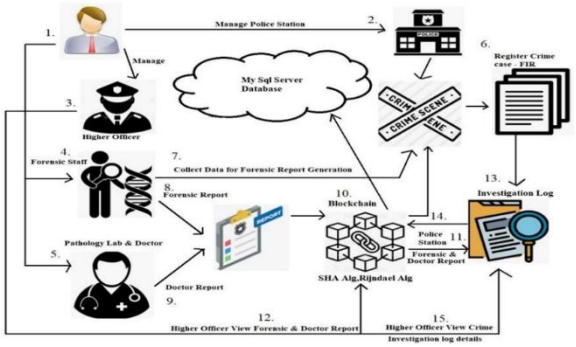

Fig-1:System Architecture

MODULES:

1. Application Manager
   ---Login(Default ID,Password)
   ---Manage area & Police Station(Generate Unique ID,Password)
   - - Login Id & Password
   ---Manage Forensic Staff (Generate Unique ID,Password)
   - - Login Id & Password
   ---Manage Pathology Lab Staff (Generate Unique ID,Password)
   - - Login Id & Password
   ---Manage Doctor (Generate Unique ID,Password)
   - - Login Id & Password
   ---Manage Higher Officer (Generate Unique ID,Password)
   - - Login Id & Password
2. Police Station
   ---Login (ID,Password)
   ---Register Crime - FIR
   ---Collect crime forensic data(forensic staff & Doctor)
   ---Blockchain
   ---Manage Crime Investigation & evidence

3.Forensic Staff
---Login (ID,Password)
---Visit crime place & collect data for forensic lab test
---Generate report for crime forensic data based on police station crime - blockchain
---View Details
4.Pathology Lab
---Login (ID,Password)
---Visit crime place & collect data for patholgy lab test
---Generate report for crime forensic data based on police station crime - blockchain
---View Details
5. Doctor
---Login (ID,Password)
---Examination based on crime(murder - death body)
---Generate report based on police station crime - blockchain
---View Details
6. Higher Officer
---Login (ID,Password)
---Monitor crime investigation based on police station
---View Forensic data report & doctor report based on police station crime

Algorithms Used:

A. Rijndael Algorithm

The algorithm is composed of four steps. These actions alter the input plaintext in specified ways. Independent of the chosen block length, the algorithm can be applied to keys with a length of 128, 192, or 256 bits. It can have 10, 12, or 14 rounds, with transformations occurring during each round. Shift Rows, Sub Bytes, Mix Columns, and Add Round Key are the four steps. This is used to encrypt the report that the corresponding modules produce. This technique is used to encrypt the reports produced by the relevantdepartments.

B. Secure Hash Algorithm

Data and certificates are hashed with SHA, a modified version of MD5. By utilizing bitwise operations, modular additions, and compression functions, a hashing algorithm reduces the input data into a smaller form that is impossible to comprehend.This is used to create hash codes that are used to verify the information.

IV.CONCLUSION

The implementation of the Blockchain-based system secures forensic reports. By establishing a chain of confined users who are accountable for the inquiry, the secure forensic evidence system has been developed to accomplish optimization. For the purposes of achieving transparency and immutability, they are each given their own access.

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