DEFINE PROBLEM/PROBLEM UNDERSTANDING

LITERATURE SURVEY

DATE	23.10.2023
TEAM ID	NM2023TMID08554
PROJECT NAME	Blockchain Technology For Electronic Health Records

Introduction:

- Introduce the significance of electronic health records (EHRs) in modern healthcare.

- Explain the challenges in EHR management, including security, privacy, interoperability, and data integrity.

- State the growing interest in blockchain technology as a potential solution for these challenges.

Blockchain Fundamentals:

- Provide an overview of fundamental blockchain concepts: decentralized ledgers, consensus mechanisms, and cryptographic techniques.

- Explain how these blockchain fundamentals are relevant to the healthcare industry.

EHR Security and Privacy:

- Review research on how blockchain enhances security and privacy in EHRs, including data encryption and access controls.

- Explore case studies demonstrating improved EHR security through blockchain.

Interoperability:

- Examine the role of blockchain in enhancing EHR interoperability among healthcare providers and systems.

- Cite studies that highlight the benefits and challenges of blockchain for data exchange.

Data Integrity:

- Discuss how blockchain ensures data integrity in EHRs through its tamper-proof and transparent nature.

- Provide examples of blockchain applications that maintain data integrity.

Patient Control and Consent:

- Investigate blockchain-based systems that empower patients to control access to their EHRs and manage consent.

- Highlight research on patient consent models and their implementation.

Auditability and Compliance:

- Review the use of blockchain for auditability and compliance with healthcare regulations (e.g., HIPAA).

- Examine how blockchain can simplify compliance and auditing processes.

Cost Reduction:

- Explore research on cost reduction through blockchain implementation in EHR management.

- Provide cost-benefit analyses from relevant studies.

Research and Analytics Support:

- Investigate the secure, anonymized data access for research and analytics enabled by blockchain.

- Showcase use cases of blockchain facilitating medical research.

Blockchain Platforms:

- Compare and contrast different blockchain platforms (e.g., public, private, consortium) for healthcare applications.

- Discuss the selection criteria for the most suitable platform.

Implementation Challenges:

- Highlight challenges faced during the implementation of blockchain in healthcare, such as regulatory barriers, technical hurdles, and organizational issues.

- Identify strategies for overcoming these challenges.

Use Cases and Case Studies:

- Present real-world use cases and case studies of healthcare institutions successfully adopting blockchain for EHRs.

- Share insights and outcomes from these implementations.

Scalability:

- Discuss strategies and technologies for ensuring blockchain scalability to handle the increasing volume of EHRs and data.

Vendor and Partner Selection:

- Provide guidance on selecting technology vendors or partners experienced in healthcare blockchain solutions.

- Highlight the importance of choosing the right partners.

User Experience and Training:

- Emphasize the significance of user-friendly interfaces and comprehensive training for healthcare professionals and staff.

- Describe the role of user experience in the adoption of blockchain-based EHR systems.

Disaster Recovery and Redundancy:

- Examine the importance of data redundancy and disaster recovery mechanisms in ensuring EHR availability during critical situations.

- Showcase successful disaster recovery strategies.

Legal and Ethical Implications:

- Explore the legal and ethical considerations associated with using blockchain in healthcare, especially concerning patient data privacy.

- Discuss the ethical implications and legal requirements for healthcare blockchain applications.

Conclusion:

- Summarize the key findings from the literature survey.

- Offer insights into the current state of blockchain in EHRs and potential future directions for research and practical applications.