PRANVEER SINGH INSTITUTE OF TECHNOLOGY

Mini Project Proposal

Team Id:

Team Details:

S No	Full Name	Roll No	Branch & Section	Mob No
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Project Title:

Securing Body Area Network(BAN) Communication

Domain: (Select all relevant Options)

1. Software-Web Application	2. Software-Mobile Application
3. Artificial Intelligence/Machine Learning/Deep Learning	4. Computer Vision/Image Processing
5. Blockchain	6. Internet of Things
7. Natural Language Processing	8. Big Data / Cloud Computing ☑
9. Others (Specify if any):	

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Problem Statement:

Wireless Body Area Networks(WBANs) hold immense potential for revolutionizing healthcare By enabling continuous monitoring of vital signs and providing real time medical data. However, the sensitive nature of the information transmitted by these network such as heart rate blood pressure etc. necessitates robust security measure to protect patient privacy and data integrity so the main problem is to secure the patient's data and securely deliver it to the hospital or their family members.

Proposed Solution:

The proposed solution for securing body area networks, particularly devices like pacemakers, within the domain of cloud computing involves a multi-layered approach. Firstly, encryption protocols will be implemented to secure data transmission between devices and cloud servers, ensuring confidentiality and integrity. Secondly, access control mechanisms will be established to authenticate and authorize legitimate users, preventing unauthorized access to sensitive medical data and device controls. Additionally, continuous monitoring and anomaly detection algorithms should be employed to detect and respond to any suspicious activities or intrusion attempts promptly. Furthermore, regular security updates and patches should be applied to both devices and cloud infrastructure to mitigate potential vulnerabilities. Lastly, robust disaster recovery and backup strategies should be implemented to ensure data availability and device functionality even in the event of system compromises or failures. This comprehensive approach aims to safeguard body area networks effectively, preserving the integrity and safety of connected medical devices and ultimately saving lives.

Unique/Distinctive feature of the solution:

Despite limited prior research in this area, the proposed solution for securing body area networks within the realm of cloud computing offers several distinctive features:

- It integrates advanced encryption techniques tailored specifically for medical device communication, ensuring data privacy and integrity.
- The implementation of dynamic access control mechanisms based on contextual factors such as user identity, device status, and location enhances security without compromising usability.
- The solution incorporates anomaly detection algorithms trained on medical data patterns to effectively identify and respond to potential threats in real-time. Furthermore, it emphasizes proactive measures such as regular security updates and disaster recovery strategies to mitigate risks effectively.

- The solution's scalability allows for seamless integration with existing healthcare infrastructure, facilitating widespread adoption and interoperability.

Overall, while there may be limited prior research, these distinctive features collectively contribute to a robust and comprehensive approach to securing body area networks and

Tools/Technology Uses:

Hardware Requirements:

1. **Operating System:** Windows 10 (or above can be used) since it is stable.
2. **Hard Disks:** 40GB or above.
3. **Ram:** 1GB as it will give faster performance throughput.

Software Requirements:

1. Wireshark (acc. to research till date)

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(To be Filled by Faculty/Evaluator)

Proposal Evaluation:

1. Right Identification of the Problem (Appropriate selection of the problem)?
   a) Excellent b) Good c) Needs Improvement d) Unacceptable

2. Relevance of the Solution (Adequately addressing the problem/need)?
   a) Excellent b) Good c) Needs Improvement d) Unacceptable

3. Innovativeness in the Solution (Distinctive innovative components/features of the solution)?
   a) Excellent b) Good c) Needs Improvement d) Unacceptable

2. Uniqueness of the Solution (Intellectual Property Component)?
   a) Excellent b) Good c) Needs Improvement d) Unacceptable

Improvements/ Suggestions by the Evaluator:

1.
2.
3.
4.

Name of Faculty:

Designation:

Signature with Date:

Guidelines:

- One Proposal per team will be submitted by the team leader only.
- A Team can have maximum 5 Members.
- Upload the document in .doc or .pdf format with font size 12, single spacing, Times New Roman font only.