

**IDEATION PHASE**

**Literature Survey**

<b>Date</b>	<b>30 September 2022</b>
<b>Team ID</b>	<b>PNT2022TMID30898</b>
<b>Project Name</b>	<b>Personal assistance for seniors who are self-reliant</b>
<b>Maximum Marks</b>	<b>2 Marks</b>

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# Personal assistance for seniors who are self-reliant

1. Lu, D. and Liu, T., 2011, December. The application of IOT in medical system. In *2011 IEEE International Symposium on IT in Medicine and Education* (Vol. 1, pp. 272-275). IEEE.

The study defines concepts of IOT (the internet of things) ,including the structure of IOT and the implementations of IOT functions .It also introduces the telemedicine ,including the advantages of telemedicine and the telemedicine in China . And the paper illustrates the technologies of IOT used in medical system. The application of IOT in medical system includes clinical care is in-need of the information management in hospital are as follows: identification, sample identification, medical record identification. Using the RFID technology, the doctor can take the bedside sample easily. They can identify the patient's identification; if there are some errors the alert will call the doctor automatically. Secondly, Remote real-time ECG monitoring Mobile communications technology from the current 2.5- generation CDMA and GPRS to the third generation mobile communications development, with the 3G communication technology and promote the use of increasingly sophisticated, 3G mobile communication technology in cardiovascular. Remote areas of health care play a huge role.

2. Balakrishnan, L., 2021, May. An Internet of Things (IoT) Based Intelligent Framework for Healthcare–A Survey. In *2021 3rd International Conference on Signal Processing and Communication (ICPSC)* (pp. 243-251). IEEE.

The study focuses on a brief survey of overall use of IoT-based frameworks in medical services, starting with an early medical care monitoring design based on wearable sensors and progressing to a discussion of the most recent fog/edge computing technologies for smart healthcare framework.

## Advantages

This research indicates that the guidance is flexible based on a couple of approaches. Ambient Assisted Living (AAL), Internet of m-health Things (m-IoT), Adverse Drug Reaction (ADR), Community Healthcare (CH), Children Health Information (CHI), Wearable Device Access (WDA), Semantic Medical Access (SMA), Indirect Emergency Healthcare (IEH), Embedded Gateway Configuration (EGC). Researchers have applied DL to Wearable body sensor information and E - Health Records are two

examples of medical Big Data. The handling of an enormous amount of information requires escalated preparing capacities. In the writing for continuous IoT frameworks, a few major information examination procedures were recommended and the requirement for QoS was not effectively replied.

### **Limitations**

Since personal and sensitive information is used in medical care frameworks and also information security and preservation is a key objective in a smart healthcare framework. Furthermore, edge-based frameworks have yet to address local storage and information processing management, especially in the context of a dynamic health environment.

### **3. Alshehri, F. and Muhammad, G., 2020. A comprehensive survey of the Internet of Things (IoT) and AI-based smart healthcare. *IEEE Access*, 9, pp.3660-3678.**

A comprehensive survey of IoT- and IoMTbased edge-intelligent smart health care, mainly focusing on journal articles published between 2014 and 2020. The survey has undergone literature by answering several research areas on IoT and IoMT, AI, edge and cloud computing, security, and medical signals fusion. The systematic review process PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) to identify studies and narrow down results for this review. In the review process, there are three sequential steps, which are identification, scanning, and eligibility testing.

### **Challenges**

The major challenges of IoT and AI-based smart healthcare include sensors' interoperability, device communication, security and privacy, device management, information management barrier, and efficient use of AI. In some health care environments, the bulk of IoMT devices can be used to identify and diagnose an illness, and the data collected from heterogeneous sensors contains a variety of issues, such as hardware glitches, drained batteries, or connectivity problems [106]. There are certain basic problems that are normal and unregulated. In particular, there are sometimes unexplained errors in the usage of popular medical sensors, such as mobile phones and smart watches. There are also regular complexities, such as battery power, distinctions between particular physical characteristics, and variations in the environment.

4. Ayshwarya, B. and Velmurugan, R., 2021, March. **Intelligent and Safe Medication Box In Health IoT Platform for Medication Monitoring System with Timely Reminders.** In *2021 7th International Conference on Advanced Computing and Communication Systems (ICACCS)* (Vol. 1, pp. 1828-1831). IEEE.

The intelligent medication box proposed in this work have specialized features including six sub boxes which helps to organize six different pills, provides timely reminders for the patient or caretaker in an android application like hand-held devices like smart phone. This intelligent medication box contains bio-sensor for monitoring of temperature and heartbeat. Over dosage and improper intake of medicines may lead to serious issues in health of elderly people to avoid mis-usage of medicines a simple authentication process either by the care taker or the patient himself is performed. The proposed medication is much safer as it clearly intimates about time, dosage, stock of medicine and sorts out different pills in correct sub boxes during the next fill by caretaker.

5. Bhatia, H., Panda, S.N. and Nagpal, D., 2020, June. **Internet of Things and its Applications in Healthcare-A Survey.** In *2020 8th International Conference on Reliability, Infocom Technologies and Optimization (Trends and Future Directions)(ICRITO)* (pp. 305-310). IEEE.

The paper also presents a comparison between various sensors used in the field of healthcare and their types, the IoT architecture, tools and technologies used to develop IoT systems, and m-Health apps. The objective of the paper is to clarify the concept of IoT to the reader and to make the reader aware of the present trends used in IoT healthcare. Basic Three-level architecture and Five-level architecture for IoT based systems have also been discussed. The commonly used sensors in IoT-enabled or IoT-based healthcare systems have also been discussed. Then, the various tools and technologies used in the development of IoT systems such as hardware platforms like Arduino, Raspberry Pi, Intel's Galileo, BeagleBone, etc. have also been discussed. In the end, various m-health healthcare applications that are available for use to the general public based on IoT have been discussed.