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**ADVANCE RESEARCH METHODS QUANTITATIVE & QUALITATIVE  
TECHNIQUES**

**MID SEMESTER ASSIGNMENT**

**(Time Allowed: 1 Week)**

**Marks:30**

**Q 1.** Write a brief note on Literature Review.

**Ans 1.** A literature review is also known as narrative review. it is a type of review article. A literature review is a scholarly paper that presents the current knowledge of the paper including substantive findings as well as theoretical and methodological contributions to a particular topic selected.

Qualities of A Good literature Review is the following :

A fine quality literature review shows signs of synthesis & understanding of a topic easily. There should be strong evidence of an analytical thinking shown through the connections you made between the literature review being reviewed.

A good literature review will not only summarize all information given, but also point out the weaknesses in the experimental procedures given and as well as possible theoretical conflicts of the subject. It builds on the current knowledge by identifying gaps and pros and cons in the available literature and suggesting future directions for research that should be conducted in future.

Start LR by writing your thesis statement. This is an important introductory sentence that will tell your reader what the topic is and the overall perspective or argument you will be presenting in literature review.

A literature review is a survey of scholarly sources that provides an overview of a particular topic. It generally follows a discussion of the paper's thesis statement or the study's goals or purpose.

For example: A paper that has a 10 pages of content so the body of the paper needs at least 10 sources in its literature review. A thesis of 100 pages in the body should includes at least 100 sources .

A typical literature review consists of the following components

- 1)introduction
- 2)main body
- 3)conclusion

A literature review look should lok like and a literature review should discusses published information in a particular subject area, and sometimes information in a particular subject area within a certain time period. A literature review can be just as simple as summary of the sources, but it usually has an organizational pattern and combines both summary and synthesis.

*Its like essays, a literature review must have an introduction, a body and a conclusion as per some experts saying.*

**Q 2.** Summarize and paraphrase Literature Review of three research papers on a particular contemporary topic of your choice. (Provide e-links for reference)

**Ans 2 : LITERATURE REVIEW**

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- 2)main body
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# **Paper no 1 : Design of Smart Home Automation System using Android Application**

## **INTRODUCTION**

Nowadays, everyone wants to do smart things. To strive in this smarter world we have to do our daily things in smart way. IOT and Home automation are the smart ways by which we can do daily things in a smarter way. We have to reduce the human exertion, time and cost. In the event if it is conceivable then just individuals craving to utilize these advancements. IOT (Internet of things) is the correspondence between the people and protests. Items can be of any sort like home apparatuses and other household things. In IOT distance never matters. This is the motivation behind why we are utilizing this innovation in our venture. By utilizing IOT we are outlining Smart home which has four applications that uses an advanced mobile phone to offer examination to the proprietor of the house.

Home computerization is the idea of controlling home apparatuses naturally by utilizing different control framework methods. There are many different techniques to control home appliances. At the point when IOT is enlarged with sensors and actuators, the innovation gets to be on occurrence of the more broad class of digital physical frameworks, which additionally incorporates advances, for example, smart grid, smart homes, insightful transportation and brilliant urban communities.

## **LITERATURE REVIEW Main body :**

In this segment talked about the distinctive home automation systems that are actualized before and furthermore the advances, highlights, future work of those frameworks.

In this phase talked regarding the distinctive home automation systems that ar actualized before and what is more the advances, highlights, future work of these frameworks. Through detail objectives as given in paper the system is implemented that is employed to observe the environmental parameters within the home like temperature, humidness in order that if the gases are leaked within the home then it's detected by the sensors. this technique is extensile and can be developed for several a lot of applications. In this phase talked regarding the distinctive home automation systems that ar actualized before and what is more the advances, highlights, future work of these frameworks.

## **CONCLUSION**

Here we've got mentioned concerning the planning and design of the good smart Home Automation System. The projected system is ready to supply automation in addition as higher security to the house. By victimisation this technique home appliances are often remote controlled and monitored. The system makes attainable to observe and management the items within the home from any remote location through web. It makes the human life easy. The projected system can cut back time and energy. also the health of individuals within the house are maintained. CONCLUSION Here we've got mentioned concerning the planning of the good Home Automation System. The projected system is ready to supply automation in addition as higher security to the house. By victimisation this technique home appliances are often remote controlled and monitored. The system makes attainable to observe and management the items within the home from any remote location through web. It makes the human life snug. The projected system can cut back time and energy. also the health of individuals within the house are maintained.

E link for reference <https://core.ac.uk/download/pdf/230495101.pdf>

## **Paper no 2 :**

### **Daily Life Activity Tracking Application for Smart Homes using Android Smartphone**

#### **Introduction**

The emerging demographic change towards an ageing population is introducing drastic changes into our society. Nursing homes and care facility units are renowned solution for elderly people. A person who lives in these units becomes depress due to lack of independence. Aging society demands a reliable solution to stay active for a long time, prevent social isolation and assistance for performing daily life activities independently in their own homes. The advancement in wireless and ubiquitous technologies offers a unique opportunity to create pervasive environment and applications to support elderly people. Smart home is conceived as one strategy to provide a level of independence at homes and improve their quality of life. It provides a platform to reduce the health expenditures and burden of health care professionals. In both developed and developing countries, numbers of smartphone users are increasing day by day. For example, there are more than 16 million smart phones owned by Koreans and 100% of the population has access to a mobile phone network. Smartphone runs a complete operating system and provides a

platform for application developers and users. To take the advantage of assistive technologies in smart home and smartphone, we develop a daily life activity tracking application for the wellness of ageing society and care givers. It helps the elderly person to complete the activities independently in their own homes and at the same time facilitates family members and care givers to track inhabitants. It may help to reduce the burden of care givers when the elderly persons stay in the home and performs daily life activities. This paper presents the details of development and prototype of proposed architecture.

**Main body** : We developed the android smartphone application in open source development tool Eclipse Ganymede JDK 6 with standard android platform 1.6 and API level 4. Application is synchronized with cloud server through web services. An API ksoap2 (Simple Object Access protocol) is utilized for communication between application and web services. It is an open source API that provides a lightweight and efficient SOAP library for the communication to android platform applications. Our system deployment in uLCRC (u-Life Care Research Center). It comprise of three main sites, namely smart home, hospital and office environment. The smart home includes a kitchen, a bed-room, a living room and rest room. In normal situation, the daily life activities of elderly person are collected through deployed sensors and stored on cloud server (main lab) via an in-home WSN-Cloud Gateway [14]. Activity ecognition algorithms recognized the activities from stored sensor logs. The results of recognition algorithms are stored in active track table, where our smartphone application can get the input and response accordingly. The family members in the offices and care givers in hospitals can track the activities and give some suggestions or prescriptions according to track situations and environment observations.

## **CONCLUSIONS**

To provide mobility for tracking the daily life activities, smartphone is a convenient and suitable device due to its rich functionalities. In this paper, we have utilized the smart phone, smart home, and cloud computing services that may help to reduce the demands on elder's attentions and effort while performing daily life activities. It generates separate alerts for incomplete critical, stable, scheduled and overlooks activities for elderly persons. List of subscribed elderly persons, their last completed activities and alerts for critical situations are generated for care givers and family members. It reduces the health expenditures and burden of health care professionals. Our application is well integrated with smart home environment and hospital infrastructure.

**e-REFERENCES:** <https://www.refitsmarthomes.org>

## **Paper no 3:**

### **Smart homes and its users: a systematic analysis and key challenges**

**Introduction** : Smart technologies are pervasive. Embedding information and communication technologies in consumer appliances such as phones and TVs and in infrastructures such as cities and grids promises enhanced functionality, connectivity and manageability. Major technology developers, service providers and energy utilities are now lining up to extend smartness beyond specific devices to the home as a whole and link these smart homes into the meters, wires and pipes of the utility networks. Research on smart homes and its users is growing exponentially, yet a clear understanding of who these users are and how they might use smart home technologies is missing from a field being overwhelmingly pushed by technology developers. Through a systematic analysis of peer-reviewed literature on smart homes and their users, this paper takes stock of the dominant research themes and the linkages and disconnects between them. Key findings within each of nine themes are analysed, grouped into three: (1) views of the smart home—functional, instrumental, socio-technical; (2) users and the use of the smart home—prospective users, interactions and decisions, using technologies in the home; and (3) challenges for realising the smart home—hardware and software, design, domestication. These themes are integrated into an organising framework for future research that identifies the presence or absence of cross-cutting relationships between different understandings of smart homes and their users. The usefulness of the organising framework is illustrated in relation to two major concerns—privacy and control—that have been narrowly interpreted to date, precluding deeper insights and potential solutions. Future research on smart homes and their users can benefit by exploring and developing cross-cutting relationships between the research themes identified.

#### **literature review**

We conducted a systematic search of the peer-reviewed literature using key words denoting “user” as well as “smart home”. Specifically, in July 2012, we searched the Scopus database using the search string “Smart” AND “Home” AND “User”

AND “Technology” and included a total of 23 synonyms and variants (e.g. “Resident\*” and “House\*” in lieu of “Home”, with the \*capturing different possible word endings, e.g. “House”, “Housing”). For further details on the search protocol. This initial search yielded 12,310 articles. In two initial sifts, we reduced the sample to 538 articles by reviewing titles, and then titles and abstracts, and excluding all spurious or otherwise irrelevant hits. We then used a final sift to exclude articles which mentioned or referenced users but on closer examination did not focus on users either directly or indirectly in the research and analysis. The final sample was 150 articles that either explicitly investigated prospective users of smart homes or implicitly considered users through inferences on the usability, design or attractiveness of smart home technologies. Using the Scopus disciplinary classifications, this set of 150 articles was dominated by engineering and technical sciences (61 %) with the remainder split evenly between health-related disciplines (19 %) and the social sciences (20 %)

## **1. Users and the use of the smart home**

- i. prospective users
- ii. interactions and decisions
- iii. technology in the home

## **2. Challenges for realising the smart home**

- i. hardware and software
- ii. design
- iii. domestication

The first set of themes describes three views of the smart home. These views provide the context and underlying rationale for industry activity and scientific research, offering different and at times competing visions or interpretations of what smart homes are and what they are for. The second set of themes relate specifically to the users and use of smart homes. They begin with basic questions about who smart home users are and what specific characteristics they have. They then extend to different views of the form, frequency and function of user interactions with smart technologies in the home. The final set of themes turns to the principal challenges for realising the smart home in the near-term future, distinguishing a hardware and software development issues from design and usability challenges. More fundamental questions are also asked about the users of smart technologies amidst the complex & irregular rhythms & patterns of everyday life in the home.

smart home a growing and potentially important field of research and development. Three broad views are evident in the literature: a functional view; an instrumental view; and a socio-technical view. The functional view sees smart homes as a way of better managing the demands of daily living through technology. The instrumental view emphasises smart homes’ potential for managing and reducing energy demand in households as part of a wider transition to a low-carbon future. The socio-technical view sees the smart home as the next

wave of development in the ongoing electrification and digitalisation of everyday life.

## 1 Conclusions

Smart homes are an advancing wave of technological development whose success depends on a coalescence between the visions of technology developers for enhanced functionality and energy management, and the needs and demands of households in the complex places that are homes. User-focused research on smart homes is growing, dominated by engineering, technical sciences and design, but with a sizeable niche of health care-related research, and increasing attention from social scientists ranging from ethnographers and domestication theorists to economists and applied energy researchers. Yet there is a wide and growing recognition of the need to develop a better picture of who users are and how they might use smart homes. Although two of the themes analysed from the literature (on “user-technology interactions” and “acceptability and usability”) are most strongly informed by research on user-centred design, these themes have not typically been entry points for thinking about the purpose and use of smart homes. Rather, they have emerged as a consequence of a technological vision that is struggling to gain user acceptance. The result is that current visions of smart homes have a limited appeal to users and are perceived as failing to meet user needs. This has given rise to what Nyborg and Røpke term “funwashing” as smart home developers seek to broaden the appeal of smart homes because the basic functionality they offer has not proven as attractive as initially hoped.

E link for the above paper : [www.refitsmarthomes.org](http://www.refitsmarthomes.org).

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**Note: In case on any queries, contact your instructor on [atif.ishtiaq@inu.edu.pk](mailto:atif.ishtiaq@inu.edu.pk)**