

IoT for Kids

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Abstract: One of the trending technology in the world or in the universe is the Internet of Things. The transformation of the normal real world objects to the virtual world object is the main and interesting feature of the IoT. It make them intelligent and more powerful and useful. The IoT make everything and keep updated and informed about everything. The IoT is very helpful in all the sector to make system automate, monitor and track. This research paper is all about the study of application of IoT for the betterment of kids. How the IoT is helping kids to grow enhance their talents and knowledge. Right now there very trending and very research going of the IoT how their application can be used to evolve the world in the better way. There are many research paper, corporate papers, expert, reviews and discussion and online Database. The main objective of the paper is study the vital Role of the IoT in the kids' life.

However this papers will help researchers to have good comprehension who are doing research in the field of Internet of Things and facilitate knowledge accumulation in efficiently

I. Introduction

The Development of network since from the five decades of advent of internet by the ARPANET. There constantly 24/7 user are now connected to the internet there growth in the graph of the use of internet. Experts forecast that by the 2020 there will be a total of 50 billion devices /things connected to the internet [1]. This is because there majority of seamlessly increase in the development in speed of data transmission. It help us share the data in no time sometimes we requires the data to be shared in the real time itself. So it help us to integration of the peoples and the devices to create the virtual environment, which is called as the Internet of Things.

Let have a clear understanding of the "Internet Of Things". It has two major pillar of it "Internet" and "Things". The internet which help tings in it to connect it with the world and have a communication with the others devices. The Things are the objects it may be any generic set of entities such as smart devices, sensors, human beings or it can be object which can communicate with other entities with the aware context of the communication. The devices or object or things can communication with each other at any place and at the any time without any restriction to operate them.

The crucial requirement of the any IoT devices is the connectivity it must be full filled. Diverse devices has many different protocols to communicate it range from a small kind of sensor which sense and generate data and send to the powerful backend Server which process the data with help of Data Analysis and extract the knowledge from it. The IoT has bundle different technological with it such as could computing data modeling, storing, processing and communication technologies to build a proper vision of it.

Fig. 1: Evolution of the Internet in five phases [3]



The development in the IoT has been surveyed [2-3] it has great and extensively developed in the vast extent. The RFID used as the dominate technology behind IoT development.

Advantages of IoT

Communication: The IoT is the machine to machine communication. Because of this there is total transparency and the best quality and the lesser amount of error communication.

Save money: As the Devices used are small in size and they have an optimum utilization of resources we can easily alter the devices if there is bottlenecks, breakdowns, and damages to the system.

Information: The information is huge amount help us to get the better business insights. It helps us to take better decision.

Automation: The Automation is the main motto of the IoT with help of Artificial intelligent without human intervention, the machines are able to communicate with each other leading to foster and timely output.

Monitor: The monitor the most important advantage of IoT for e.g. monitoring the quality of air to supply in the home which was not possible previously in the order system. The amount milk in the fridge or the ink in the printer can save the trip to the market.

IoT Architecture

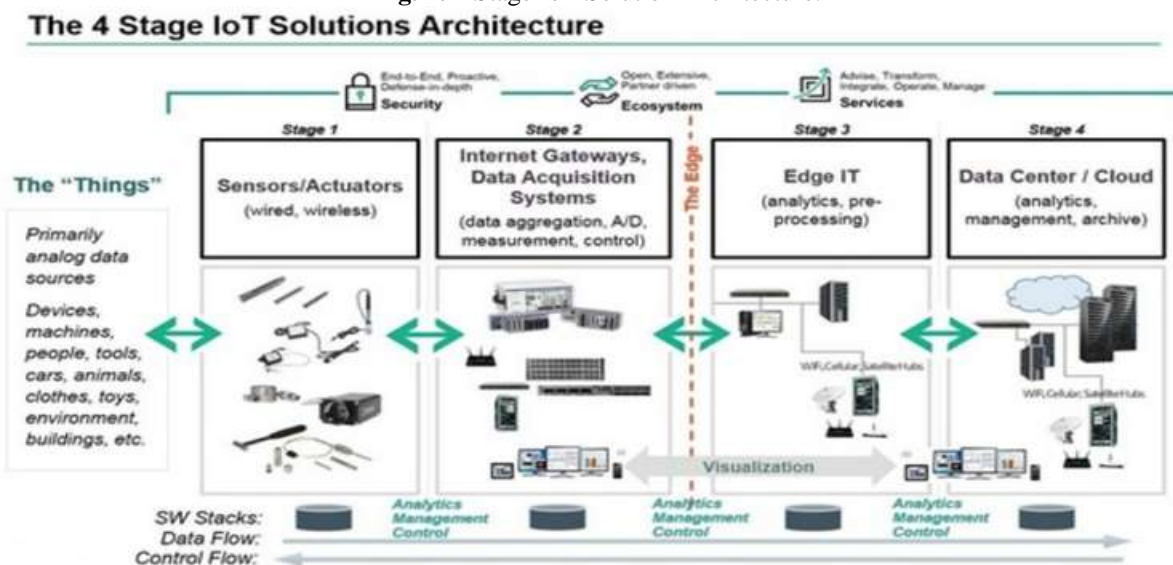
Let's understand the architecture of IoT. The IoT architecture is the clear understanding of numerous elements sensors, actuators, cloud services, and protocols layer.

Basically there are three layers

- 1) The client side.
- 2) A medium connecting clients and operates.
- 3) Operators on the server side.

There all the above mentioned requirements are addressed in 4 stages of IoT architecture described here- an each separate stage and after completing the overall building process [4]

Fig. 2: 4 Stage IoT Solution Architecture.



Till now we have seen the, what is an IoT is on it architecture and advantages. Now in the next section we will see IoT for kids and Application of IoT for kids. In a recent survey of more than 600 IT leaders from K-12 and higher-education organizations, almost half-46percent reported that they believe. Internet of Things (IoT) technology will transform the way students learn at their schools within the next two years.[5] The school which leverages IoT technology for their students to learn and have understanding of subjects with the help of tools such as white board, VR, Robots, tablets and e books,3-d printers and more. The World is moving towards the Internet of Thing smart school.

II. IoT for Kids

The wearable widgets or devices are developed and having a huge potentials if they are targeted to the kids and their parents. But the technology should be need to be treated responsibly and security and privacy of kid's. As the technology be won't able to replace the good parenting but it help to the parents to enhance it. The world looks complex and dangerous for the kids. Today's kids are provided with the new technologies and new

challenges for the parents. The parents are now blessed with the technology to provide entrainments to their kid with the help of tablets, phones, games, consoles, etc. But at some extents it's also a concern that kids might get stuck to the mobiles games, phones it binds them to the home and they won't go outside to play. Which create an effects on the health. Mae them physical get involve in the games or in the activities.

Now only wearable are focused or targeted whenit's about kids.It is because the kids are less caring about theirthings. They might lost the hand handheld IoT devices or which handy to care for kids. So if its loss they can't be tracked and usually 50% chances are there they will loss there toys and devices. So there must a fool proof IoT device for the kids to track. The IoT device should be wearable. The wearable that are incorporate into clothing or worn on the body as infants or accessories.

III. Application of IoT for Kids

1] Wearable tracker (Children Tracker for Parents)

The children tracking is most important and widely used system all over the world. Every parents are very much concern about where is there child right now is HE/SHE safe. The IoT devices enable child tracking devices and it continue to evolve. The devices comes in different shop and size. The child tracking devices are weight and can be word in different and easy way. It can be attract to shoelaces, belt loops, shirt tags or even button holes.

To locate the kids IoT devices mostly uses the Bluetooth and GPS. The benefits of it as allows children more freedom while being watched, monitors children with special needs, who wonder helps monitor children with behavioral problems gives peace of mind to parents.

Fig. 3: Wearable trackers



2] Helps to Improve Cognitive Thinking

The IoT has evolve in much better way that now we have to inputs cognition to IoT to develop the Extended version of human for what we have to infusion IoT with Artificial Intelligence AI helps to go beyond the normal machines to cognitive rationalizing problems solution like human Intelligence is cognitive AI .

It turns the an intelligence machine to the special humans with humanoid intelligence, enabling them to learn, reason and communicate with the humans and vice versa in normal common user understandable languages. Cognitive computing that refers to the practical enactment of cognitive AI through computing model, adds a new layer of functional to the existing IoT architecture. This is known as cognitive IoT (CIoT) [6]

The developing of highly interactive academic and entertainment stuff was never easier before. The IoT has created the Application like IBM Watson, Amazon Lex, and others. It help to map the intelligence of users and provide dues as what to do to take learning to the next level.

Fig. 4: Cognitive learning Toy



3] Self Installing Car Seats:

The baby car industry is big business, the card has shown that almost 80% of the seat purchased are wrong install and fitted [7]. The self-installing car attach directly attach itself to the base of the seat. In it there is a robot in the base of the care seat so that it can install itself so that it can install itself, so that it cannot be install incorrectly. And it also has contribution after every time placement of child in it verifies the installation. It periodically it continues to check level and connections until the seat is removed. It provides the better child and kids softy while driving the car.



Fig. 5: For mothers self-installing car seat

4] Smart Button

The first few months of the new born babies are very hardest parent have to lot care and keep on checking the actions. This are very stressful day for the parents. IoT has been eliminate this stressful exercise and also your body to sleep soundly.

If the baby rolls on her/his stomach it send immediately real time after to the application or to the nearby IoT Devices. The baby rolling on He/She stomach is not got for the babies. This IoT device is handy when you have babysitter and parent watching your baby.

Fig. 6: Safety device (Smart Button)



5] Fever reading Wearable Thermometer

In the trend of having wearable, the children health care IoT devices are keep on evolving. From that Fever Reading wearable is saving lives of children in the unimaginable ways. It helps the parent to track Body temperature goes beyond normal temperature. The App also incorporated with the AI to take appropriate action and advice to the parents.

The particular IoT Button or devices are the soft patch that is flexible and cannot easily be detected. The device keep on 24/7 collects the data or temperature reading from the baby's body and send the collected Data to the App installed on the device. It plot the graph of the reading gives the clearer view of temperature of the child baby.

Fig. 7: Fever Scout Wearable Thermometer

IV. Conclusion

In this paper, we have analyzed the current trend in using IoT devices for the kids. In the introduction section we have seen the how the IoT start to evolve and its architecture. And second section we have analyze the application of IoT for kids. The standards of the IoT are keep on increasing and it capabilities are also evolving. It will help us to even more and more to develop and create health care and tracking monitoring devices for the kids. The parents can have a peace of mind.

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