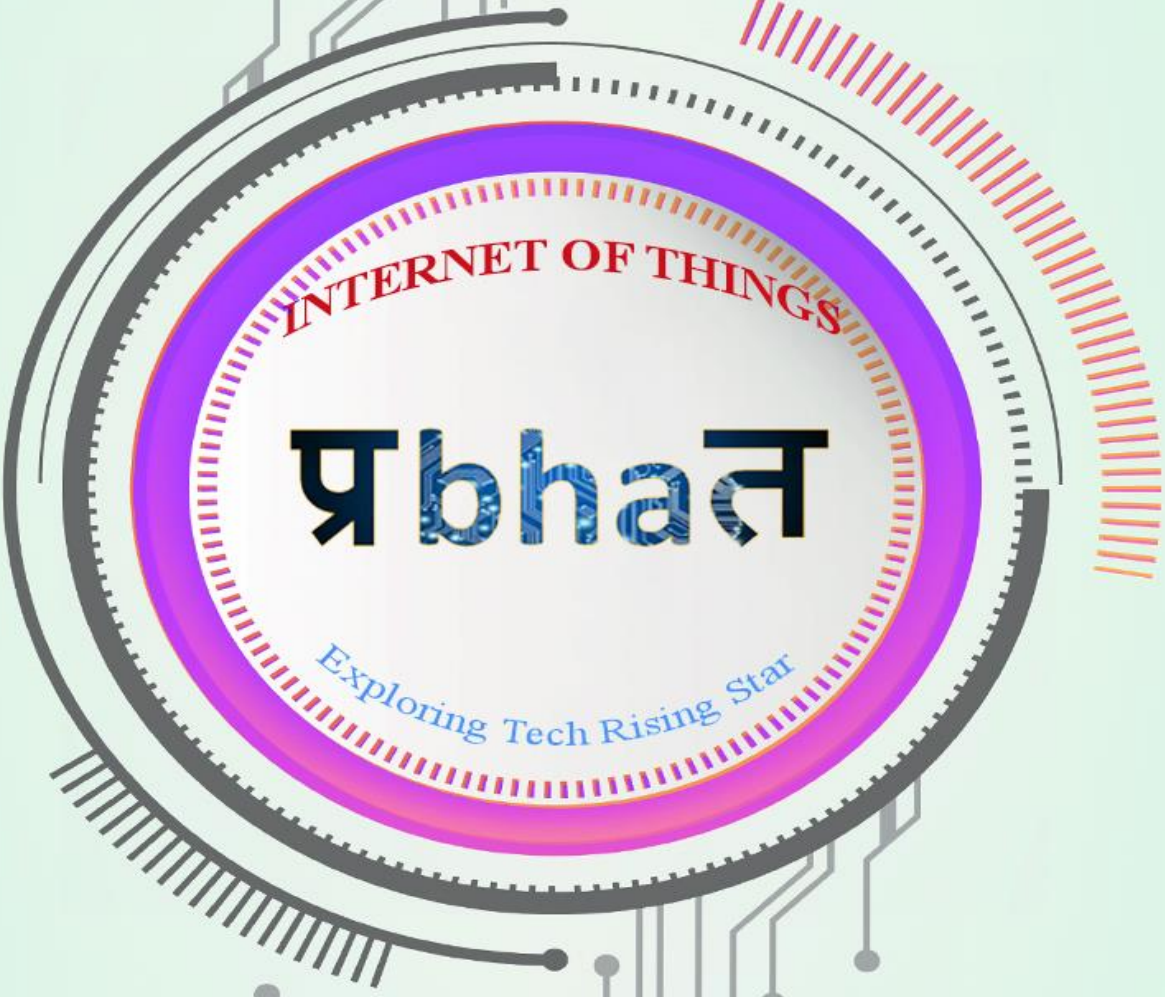
Newsletter 2019 Issue I



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Institute of Management and Information Technology
Navi Mumbai

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INSTITUTE OF MANAGEMENT AND INFORMATION TECHNOLOGY
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BVIMIT fortifies student's intellectual awaking and social transformation in different spheres that makes them to contribute to the organization and world as well. We strengthen student's hard work and commitments towards knowledge.

BVIMIT provides MCA, VI semester course enables overall development of students and give a different perspective towards corporate life.

Current newsletter entitled "***PRABHAT-exploring tech rising star"*** is a combined effort of students and staff members that commences articles on emerging technologies with theme as **"INTERNET OF THINGS**" provides articles for the same.

I hope "**PRABHAT"** will take you to the world of prominent technologies.

Editorial Desk

Prof. Pratibha Deshmukh
Editor-in-chief

It is indeed a great honor to be the Newsletter Editor for me and also an immense pleasure to launch the first edition of BVIMIT Newsletter "PRABHAT- exploring tech rising star".

As we are living in the technological era, we have selected the topic for the article as "**INTERNET OF THINGS**" to make students aware about this emerging technology. It aims to be a truly interdisciplinary platform seeking to bring together a range of diverse voices on the topic in order to stimulate discussion.

A huge thank you to all the students who contributed writing the articles, without which there wouldn't have been this newsletter.

I appreciate PRABHAT student members for their everlasting support throughout the creation of this edition.

I hope "**PRABHAT**" will convey some technical knowledge to you.

Hafeez Khan
STUDENT MCA

Trupti Khobragade
STUDENT MCA

IOT in Automation

Under the guidance of Prof. Gunjan Behl

In simple words, IOT can be described as “connecting the physical objects with each other to achieve a certain goal”. This age is of automation, everything is getting automated for the user’s comfort and assistance. Home automation is one of the most important aspects of the automation industry because it has affected the personal lifestyle of the users and helping the user in everything including cooking, washing, gardening and even waking up the user.

As the home devices and objects are connected with each other and can sense the environment around them and can act according to the situation without the interaction of the user. Home automation systems can turn on the water supply when the tank water is below a certain level and can turn off the water motor once it’s filled. This helps the user to focus on other productive works rather than waiting for the water tank to get filled and turn off the motor. Home automation includes the security system as well and can work more effectively with the help of IOT as the system is connected with the Internet and when the user is not at home and some intruder is detected by the security system it can notify the user and nearby authorities like the police.

There are some downsides of the Automation as well since the user is getting overly dependent on these systems and if the system fails the user might get in a big problem and not only that but the user is getting inactive because everything is happening automatically. But this can be neglected when we consider the benefits of the automation, for example, if the water motor is automated then there is no chance that water is being wasted because of mother overrunning since it will be automatically turned off, this conserves the water and electricity consumption. User can monitor and control all the home device and appliance remotely and this can reduce the electricity bill for the user.

Many sensors are available in the market which can be used to detect the presence of the user and keep the appliances on while the user is present or else turn it off to reduce power consumption.

Not only the homes but the vehicles are also being automated for a comfortable and secure

transport the new vehicles are already equipped with technologies which allow the user to control the ac temperature before even living the workplace to ensure that when the user enters the vehicle it's already having the optimum temperature inside. This can be very useful in countries where there is snowfall most of the time during the year, as the user can turn on the heater remotely to melt the ice covering the vehicle.

Tire Pressure, fuel level, vehicle' overall condition can be monitored through the smartphones and even the vehicle can be unlocked securely with a smartphone. In the case of the emergency vehicle itself can notify the selected contacts and the required authorities about the situation with the accurate location of the incident and in some case visual if available.

Industries are using the automation in an outstanding scale for the mass production of the products specifically electronic devices like laptops, smartphones are being produced automatically for the post parts only simple assembly is being carried out by the humans. Traditionally it could have been impossible to produce million of the products within a month or week it could have taken a year or even longer period of the time span. Not only the speed but the accuracy of in automation is incomparable to traditional methods of production, while these machines are automated they have an inbuilt mechanism to detect and solve the problem and if the problem which requires human intervention the machine itself can send a notification to the user with details of the problem and the specific location of damaged parts it helps a lot while if this was case in traditional method user will first locate the problem which consumes a lot of time and in some the cases, user never finds the actual problem.
Thus automation saves time and the cost required for the production. But there is always a sad side of each aspect and in this case, the number of humans required for the production is reducing day by day which is becoming the main reason for unemployment.

We are living in an agriculture-oriented country means our main conomy is affected by agriculture and in this age, even the agricultural tasks are being automated which are helping in a higher rate of harvesting and better control over the agriculture using the drones for checking the field remotely, using the sensors to check the water level in soil or it may be the automated water supply to the fields everything can be automated in some countries even the crop is harvested by the machine without the in traction of the users. And since each and every task is being automated the human power required in the agriculture field is reducing drastically which is affecting the human life to get employment. This is the age of technology and every human should learn about the new technologies which will help the person to survive in the race of life.

Deepak Sk Sharma

STUDENT MCA

Designing IoT Mobile Apps for Smart Appliances

IoT is an Internet of Things

It requires integrated approach with mobile application through the entire lifetime of smart appliances. From the perspective of those using smart home appliances, the mobile app that controls the appliance is the product. Consumers judge smart products – meaning connected appliances that are part of Internet of Things (IoT) – largely on the quality of their mobile apps. Grasping this simple but difficult truth means manufacturers of smart appliance need

to make the fundamental shift in perspective in how they design, manufacture, and even support their offerings. Mobile application development issues never entered into the design of home appliances. With mobile apps taking a front-and-center role in smart appliances.

Design Around People, Not Products

With smart appliances, the ―center of gravity‖ for product design is no longer the hardware. Users might rarely interact with the smart appliance hardware itself to set or change controls.

The mobile app replaces the hardware as ―the product‖ in user eyes. That means from the beginning to the end of the design and manufacturing process, the IoT mobile app must remain the primary focal point. The mobile app can't be separated out and worked on independently, or tackled. Only after therest of the product design is completed.

It's also important to recognize that consumers are very familiar with mobile devices, which will increase their expectations for IoT mobile apps

People expect a great mobile app user experience, which encompasses everything from the aesthetics of the app—its look and feel, its feedback mechanisms, its buttons and other

controls—to how intuitive it is to navigate, how quickly users can do what they want to do, and how easy it is to install, register, and update the app.

Invest in Software Extensibility

Designing IoT mobile apps well requires considerable time and financial investments. It also requires making smart design decisions from the outset. One of those decisions is whether to use native code or hybrid code for the mobile app. Such flexibility is crucial, because the state of the art of mobile apps—and the entire IoT marketplace -continues to expand and change. Even the definition of ‒product‖ in the IoT is up for grabs. Instead of appliances that are purchased, installed, and operate until replaced, smart appliances can be updated and enhanced continually throughout their lifetimes. Investing upfront in mobile app extensibility means that manufacturers of smart appliances can add future capabilities as they arise, whether voice control, touch authentication, Bluetooth beacons, or as-yet-unknown features.

Plan for Lots of Mobile App Testing

In the Internet of Things, quality assurance testing is much more complicated than for traditional products. The IoT is a complex interplay among hardware, IoT clouds, software applications, and the networks and communications pathways interconnecting it all. Everything has to be tested in the context of everything else. Quality testing for smart appliances needs to include device-level, cloud-level, mobile app-level, performance, reliability, scalability, security, data privacy, backward compatibility, lifecycle, and end-to-end testing. Understand the value of Minimum Viability Products (MVP) for IoT. When designing mobile apps for smart appliances, however, a different mind-set is necessary. Users don’t need access through the mobile app to every possible property that a connected product offers. In fact, hardware features don’t always need to be offered as mobile app features. Each smart appliance’s features should be broken down into primary, secondary, and tertiary features. Only primary and perhaps a few secondary features should appear on the mobile app, with the rest handled through touch screen or other direct interaction with the appliance itself. Instead of trying to achieve VIP mobile apps, then, manufacturers are better served by getting to market quickly with an MVP version of the mobile app, then using actual customer usage data generated by the smart appliance to iterate and improve the IoT mobile app. That way, the mobile app can be improved in ways that are known to enhance its value with customers.

Consider Using a Comprehensive IoT Platform

Because mobile apps are such an important aspect of smart home appliances, designing a world-class mobile app and staying on top of the latest mobile app trends are essential for competitive success. Manufacturers lacking strong mobile app development teams, high-end programmers, and years of IoT and mobile app development expertise will likely benefit from leveraging comprehensive IoT platform technology.

A comprehensive IoT platform will include not only the technical needed to develop mobile apps for the IoT, but also a robust ecosystem that includes software developers with specific expertise in IoT mobile app development.

The IoT is the future, and mobile apps are key to consumers' evaluations of the worthiness of any particular smart home appliance. Making IoT mobile app design a priority is one of the best ways to put the best face on a smart appliance.