Abstract

In this era of digitization and automation, Internet of things (IoT) provides a platform that allows devices to be connected, sensed and controlled remotely across a network infrastructure. As an organization grows every year, new management problems and energy issues appear. Monitoring and controlling the unused devices that consume power during human absence is a major inability. In addition to this, coordinating the people participating in the daily activities of the laboratory is tedious when population of the usage of space out numbers a manageable threshold. This work targets to develop a smart laboratory system based on IoT and mobile application technologies to monitor the overall activities of the lab including energy consumption and utilization of devices, thereby providing a smart environment to the campus with enhanced security, energy efficiency and comfort. The aim is to control and monitor the things such as lights, fans, projector and air-conditioner of IoT lab in CIT campus using Google assistant or chat bot. The instigation of Google assistant not only provides a user-friendly access to the things but also makes the process interactive with its response. The use of voice commands overcomes the mundane task of switching the appliances. The status and energy consumption
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of the devices were viewed on a dashboard which is available in the website (www.citeceiot.in/dashboard/graph.php). From the results of implementation, it is observed that the appliances in the lab were remotely monitored and controlled thereby reducing power consumed and human energy considerably.

References

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**Index Terms**

Computer Science

Information Systems

**Keywords**

IoT, Node MCU, energy management, Google assistant, chat bot, dashboard