Technical Paper Writing Competition (FY 2022-2023)

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Details of Abstract (To be as per the instructions below)				
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Arial	12	427	1.15	1

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Real Time Temperature and Humidity monitoring inside the Data Center using Internet of Things (IoT)

Abstract:

The advancement in Information Technology and communication techniques led to the development of a new technology called *Internet of Things*. It is also shortly known as IoT. IoT is basically a network of physical objects that are embedded with sensors, processors, electronics and networks. These physical objects collect and exchange data between each other and fulfill the programmed tasks. Among the various diverse type of applications that can be done using Internet of Things (IoT), real time monitoring and reporting is one of the most important ones. *Automation* of this activity helps in eliminating all the anomalies that may happen within the time lapse of manual risk identification and reporting to the concerned authority. The idea of this research is to propose and setup an automation system which actively monitors both the temperature and humidity values inside the datacenter using different thermal and humidity *sensors*. It will also have the ability to immediately send an *alert message* directly on mobile to the concerned authorities without any delay.

With the advancement of technology in various fields and by the usage of sensors for the required purposes, the possibility of gathering vast amount of *data* in unimaginable scales has become very feasible. Processing this data to make the calculations and observations more accurate has also become very easy. The usage of new generational *neural networks* and *algorithms* helps in training the machines with proper data and letting them predict the next outcome correctly paved the way for Machine Learning. In the context of this research, training the machines with data collected can be left for the future scope as the main motto is to send alert messages immediately without any delay. The approach towards the implementation will be done by using Arduino UNO starter kit, DHT 11 sensor and most importantly SIM 900 GSM shield. Arduino UNO is basically a low cost, flexible, and easy to use programmable open source micro controller board consisting of various pins dedicated for distinct tasks. Hence, by using these components and programming them in such a way that the micro controller sends an alert text immediately whenever the sensor senses the temperature or humidity values greater or smaller than the pre-defined acceptable ranges mark the successful completion and achievement of this research. Various references used and the documentation of challenges faced during the approach and implementation of the project will be done in this research paper.

Keywords:

Internet of Things, Automation, sensors, alert messages, neural networks, algorithms