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Title:	Design and Implementation of IoT-Based Load Monitoring and Outage Management System
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Published Conference Name:	3rd International Conference on Robotics, Electrical and Signal Processing Techniques (ICREST), 2023
Type of Publication:	International Conference
Publisher:	IEEE
Publication Date:	January 2023
DOI:	10.1109/ICREST57604.2023.10070034
URL:	https://ieeexplore.ieee.org/document/10070034
Other Related Info. :	PP. 22-27

Citation: Ahmed Muntasir Anwar, Md. Rifat Hazari and Mohammad Abdul Mannan, “Design and Implementation of IoT-Based Load Monitoring and Outage Management System,” Proceedings on 2023 3rd International Conference on Robotics, Electrical and Signal Processing Techniques (ICREST), 7-8 January 2023, Dhaka, Bangladesh, pp. 22-27, January 2023.



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Abstract:

An essential instrument for the operation of a power system is to monitor and analyze the data to find the fault and rectify it before the System collapses completely. This paper intends to utilize the idea to create a control system that will fulfill three objectives, monitoring of vital parameters controlling the power distribution, outage management by fault detection based on the variation of voltage, frequency, and current & protection of the circuit against any significant incidents by isolating the load from utility and flagging the information through feedback to the utility authority. The method used in this project can provide necessary safety from total system outages by adequately monitoring the instant data and historic data, managing the outage system by detecting faults, and cutting loads required to avoid a widespread blackout of a power system. Implementation of the proposed project can solve the problem of system blackout due to overload, under/over voltage, or under/over frequency. This developed system can supply necessary timestamped monitored data that can be accessed remotely and can also archive to create a proper load profile to ultimately help the modeling of Load Forecasting for a smooth and economic grid operation and can be used for developing the Smart Grid network.

Keywords: Electrical power system, microcontroller, wi-fi module, GSM module, remote data monitoring, outage management system