PROJECT TITLE

SMART BUILDING WITH IBM WATSON

Submitted by

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ABSTRACT

Electrical energy consumption is the need of the hour. In today's technological advance and comfortable lives, conserving electrical energy has become even more imperative. We therefore intend to make a step forward in the same direction by developing this project; "Smart Buildings with IBM Watson". This project as the name suggests employs the idea of automation to enable users to decrease the usage of electricity by switching off the appliances when not in need. This project will not just help reduce one's electricity bills but will also decrease the detrimental repercussions caused by gaseous and liquid pollutants that are liberated by the appliances we use. For that reason this project is aimed at creating an energy saving system that makes use of what is called as the Green building concept to convert any regular, conventional building into an energy saving one.

The model designed illustrates energy consumption through data obtained from the sensors known as the energy saving parameters, like temperature, humidity, light intensity etc. The energy saving system is built in such a way that it enables the user to operate their home appliances through three modes of operation i.e., Eco Mode, Away Mode and Manual Mode which turns the appliances on/off as and when required thereby saving electrical energy. The eco mode is a completely automatic mode which switches all lights, fans and ACs of the building when it detects the presence of humans in the building area. If there is no movement of humans detected, then automatically all the appliances are switched off without any human intervention.

The next mode is the away mode which when chosen switches off all appliances by default, independent of whether humans are there or not. The last mode is the manual mode which operates the appliances based only on the user input. Apart from these three modes, we have also integrated a DHT sensor through which weather parameters can be monitored. The LDR and PIR sensor have also been used for efficient working of the system and this entire sensor data are stored by creating a database using IBM Watson cloud services. These stored parameters can be observed and the modes can be selected through a User Interface created in Node Red that assists in controlling of appliances and consequent energy consumption.

BLOCK DIAGRAM