MUTHAYAMMAL ENGINEERING COLLEGE

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IBM (NalaiyaThiran) Project Ideas 2022

RAMANIKANTH (MECR20EC510)

1) Smart Street Light Metering System

Design a Street Light Metering System for monitoring the power usage. It should calculate the number of units consumed during a day, month and year. Bill should be generated automatically and alert messages will be sent on high power consumption.

How should the application work?

The system will register the name of the area, pin code, number of light poles, units consumed and number of poles which are in working condition and it will store that information to the database. The system will also store the count of faulty bulbs and it will send a notification to the department to replace them. The system should have smart light dimming module, if the visibility is low, the intensity of light should be maximized. The second approach is to dim the light for the streets automatically when no movement is detected and it will automatically increase the intensity of light. The system should convey the usage of power accurately to the concerned department and should automatically calculate the bill by storing monthly unit consumption. The system should store electricity consumption not only daily but also yearly and it should represent electricity consumption graphically for past 15 days. If power consumption goes beyond a threshold level, which is the average power consumed in the last 15 days, then the system will generate an alert message to lower the consumption.

2) Water Management System

From the underground storage tank, water is pumped using motors to overhead water tanks, which are placed at the highest elevated floor of the building for optimum pressure. The system should also continuously monitor the soil moisture along with rain predictions to water the landscapes in the campus.

How can the system work?

The system should check water quality whether it is drinkable or brackish i.e. it should check PH-level, oxygen level, etc. It should check water level of over-head as well as lower-head tanks and control the pumping of water as per the required limit of the over-head tank. The system should also give real time water volume of both the tanks, through the android application. Watering system mobile app should display type of soil, which is being taken, how much water is needed, and its moisture level. It should check weather forecast online and act accordingly, verifying if the forecast was appropriate or not.

3) Development of Smart System for Women Safety

Description:
Today in the current global scenario, the prime question in every girl's mind, considering the ever rising increase of issues on women harassment in recent past is mostly about her safety and security. The aim of this theme is to develop a device which is the integration of multiple devices, hardware comprises of a wearable "Gadget" which continuously monitor the scenarios around the girl and stream the data whenever there is a need.

4) Smart System for Hazardous Gas Detection

Description:
The core objective of the Smart City mission is to develop the clean and sustainable solution that helps to improve the quality of the living environment. No city can be smart without the smart sewage management system. Sewer gas is a complex mixture of toxic and nontoxic gases produced and collected in sewage systems by the decomposition of organic household or industrial wastes, typical components of sewage. High concentrations of hydrogen sulfide (>150 ppm) can produce olfactory fatigue, whereby the scent becomes undetectable. At higher concentrations (>300 ppm), hydrogen sulfide can cause loss of

consciousness and death. Very high concentrations (>1000 ppm) can result in immediate collapse, occurring after a single breath. In worst cases, it may lead to the collapse of the structure with significant cost for its rehabilitation. The objective of this problem statement is to develop a model to detect the hazardous gas level in remote locations using sensors and send these data to the centralized server to monitor.