**Automatic Door Monitoring and Smart Lighting** **System using WOT**

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| **Motivation / Introduction**  Today, in all areas of daily life, it’s often said that technologies improve the efficiency of things and are easier to handle. Life itself is becoming more skillful and productive. It is getting smarter, safer and cheaper. Intelligent door monitoring and lighting system is a significant IoT-based feature in which all electrical and electronic appliances used in their own building to communicate with each other to perform functions and act in a way that is desirable to the occupants.  The aim of the proposed work is to set up such a system that can reduce the workload and energy loss, lead a comfortable life, improve the standard of living and elder and disabled people can remotely control their devices. This project aims to introduce a new security system based on Raspberry Pi. The main goal is to develop a prototype that can simulate wireless tasks, including monitoring and controlling the digital door lock. Such a system would have the ability to provide safe and controlled electrical appliances.  The system can be used in many places, e.g. In banks, laboratories, hospitals and other sophisticated automated systems, reducing the risk of unauthorized access. There is a need for a simple, efficient and accessible lighting and door monitoring system that operates intelligently according to predefined user-defined parameters. This can turn a simple home into a true smart home. The main reason for developing this system is to save time and manpower as well as safety and comfort. | **Results**    A single view of door monitoring and smart lighting system.  E:\Study\WINTER-SEM 2018-19\Capstone Project\Data\WhatsApp Image 2019-04-02 at 4.12.15 AM (2).jpeg  **Conclusion**    The existing system exist as individual and has some limitations. If all taken together like cross platform synchronization, latency in communication however we have focused on minute details like mentioning the time a particular appliance was used. Also providing the remote access to whole system anywhere round the globe over internet. It is helpful for both domestic and commercial buildings to keep them safe from any kind of forgery and stealth action. Smart lighting helps the lights manually. This project can be helpful for in saving electricity as well as reduces the human effort to switching on and off elderly and disable people to operate the system using android application. After calculating the budget, it came out to be an effective project serving multiple purposes in reasonable cost of making.  **Acknowledgement**  I would like to express my special thanks of gratitude to all my associated faculties and my guide who gave me the golden opportunity to do this wonderful project, which also helped me in doing a lot of research and building up my technical skills.  **References**   1. Januzaj, Y., Luna, A., Ramaj, V. 2015 Real time access control based on Facial Recognition. 2. Çarıkçı, M., , Özen, F. 2012 A Face Recognition System Based on Eigen faces Method. 3. Lwin, H., Khaing, A., Tun, H. 2015.Automic door access system using face recognition. 4. Senthikumar, G., Gopalkrishnan, K., Sathish Kumar, V.2014 Embedded Image Capturing System Using Raspberry Pi System 5. EASAMBATTU, Thejaswini; REDDY, P. Ajay Kumar; RAMAIAH, G.N. Kodanda. Controlling home appliances through GSM modem and Internet. International journal of Electronics Engineering Research, [S.I.], p. 1-7, oct 2013.   **Contact Details**  maheswari.n@vit.ac.in  keshav.sharma2015@vit.ac.in  ayush.sharma2015a@vit.ac.in  neeraj.kumar2015@vit.ac.in |
| **Scope of Project**    In recent years, it is important to have a reliable security system that can secure the assets and protect the privacy. However, the current security system has many weaknesses, where it is simply expressed. Most doors are controlled by persons with keys, security cards, counter-signs or models for opening doors. The goals of this project are to help users improve door safety in sensitive areas by using face recognition. Smart lighting has been proved energy efficient, convenient and economic so this system comes up with an improvised lighting system which can be in action with both manual and automatic manner. It is a good step to install a system like this which give an ease to operate electrical and to save energy. |
| **Module Description**  The project comprises of two modules in the project one is door monitoring on RPI and smart lighting system over NodeMCU but the curious thing here is both have a common platform to access the things connected with them. DC motor is communicating with both RPI after processing the image and NodeMCU through the android application. Similarly, more appliances can be controlled using the multiple channel relay switch. Both the microcontrollers have been powered using a 5v transformer to reduce the delay in processing. Based on the pins of microcontroller connected appliances can be controlled form anywhere around the world if both user’s device and both the microcontrollers are connected over the internet. The application displays the intensity of light received in LDR sensor also for how long devices are in active state.  This refers to a complete system carried over an app this high level abstraction refers to web of things. It has heterogeneous protocols running at a time like HTTP, SMTP, etc. |