Cloud Based Automation

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Abstract. Automated infrastructural technology is coming age of technology. Using smart infrastructural technology with the intent to conserve can lead to energy efficiency, savings, and an overall better quality of life. Suppose, having your air conditioning turn on when you walk into your house. It is comfortable, but the air conditioning turn off when you leave the house is energy saving. This application uses the power of internet of things to make decisions pertaining to energy efficiency, providing the benefits in terms of comfort, safety, health and encouraging productivity at both home and workplace. The project intends to provide a connected experience between home and workplace through messaging queue.

Keywords: Smart Home · Smart Workplace · Energy management · Comfort.

1 Introduction

The application is developed with an intention to reduce the power consumption at both home and workplace without compromising on the user experience. The participatory sensors sense the presence of users in the provided environment to enable the benefits suitable for the situation. However the user can override the decision made by the system through Google Assistant's voice commands. Since we are controlling both home and workplace, the raspberry pi controllers are placed at respected location and have a shared a messaging queue that provides a seamless experience for the user.At home environment, with the available sensors and actuators, we are controlling the light and heater, based on user's presence, outside light and outside temperature. At workplace environment, we are controlling the power sockets, light and air conditioning based on user's presence. The sensor values are displayed on the dashboard in real time. With an intent of sustainability, the application aims to conserve the energy, also providing the user comfort and a better quality of life.

Table 1 an example of a table.

Fig. 1 gives an example of a figure.

For citations of references, we prefer the use of square brackets and consecutive numbers. The following bibliography provides a sample reference list with entries for journal articles [3], a book [4], proceedings without editors [2], and a homepage [1]. Multiple citations are grouped [3, 4], [3, 4, 2, 1].

Table 1. Table captions should be placed above the tables.

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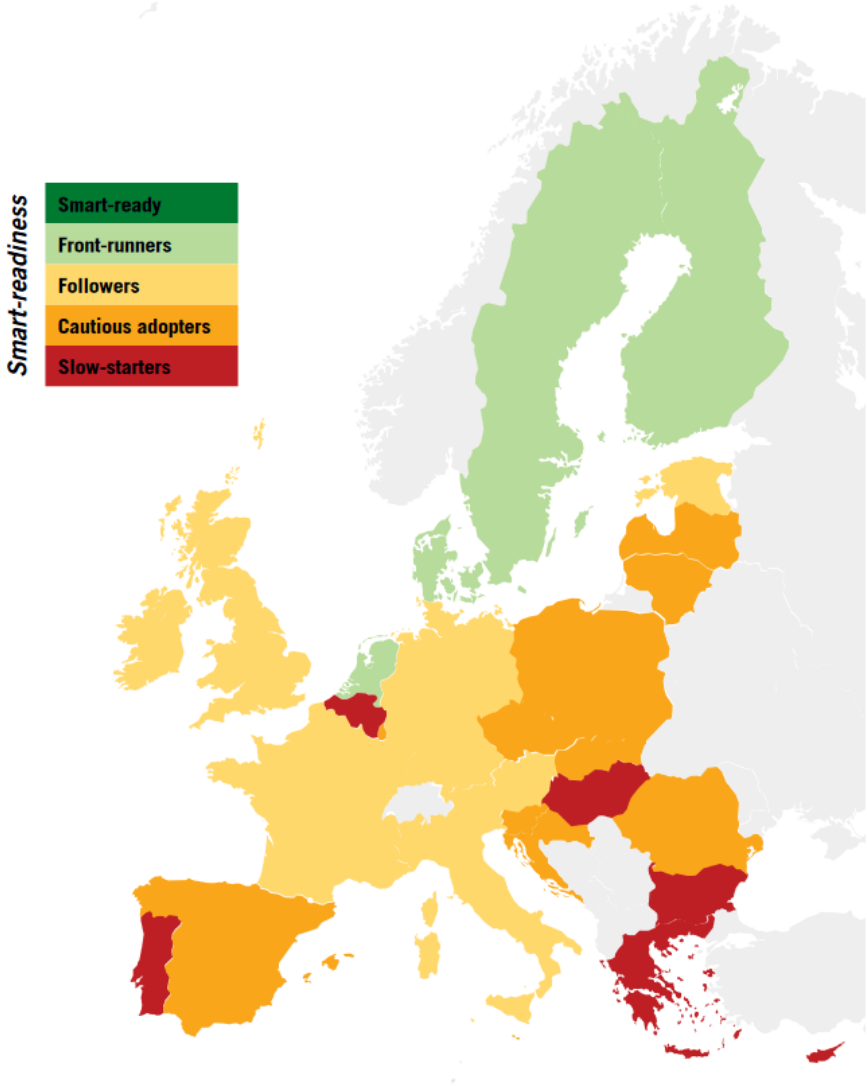

Fig. 1. A figure caption is always placed below the illustration. Please note that short captions are centered, while long ones are justified by the macro package automatically.

2 System architecture

Here goes the design of the system architecture.

3 Requirements specification

Here go the requirements both functional and non-functional of the system.

4 Conclusions and Outlook

With this application,we plan to minimize the unproductive expenditure of the power, also prioritizing on user comfort.With the available sensors, actuators and controllers, the application could control light and heater at home and power sockets at workplace. The dashboard, that employs the message queue, shows sensor data to the user in real time. The concept could be extended where a user gets an alert on his smartphone or smart watch when there is an unnecessary leak of power, say the refrigerator door is unlocked in the kitchen, the user can get an SMS on his/her cellphone in the bedroom.Thus the proposed application can be extended for the betterment of the society.

References

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