

Performance Enhancement and IoT Based Monitoring for Smart Home

ABSTRACT

In recent years, home automation has become so popular due to its numerous advantages. The home environment has witnessed a rapid introduction of network enabled digital technology. This technology comes with new and exciting opportunities to increase the connectivity of different devices within the home for the purpose of home automation. This paper aims at designing a basic home automation system of controlling multiple appliances which can be monitored and accessed from anywhere in the world with very low cost. The technology incorporates Raspberry Pi and the web server. The Raspberry Pi and Arduino integrated with Nrf modules are used to monitor the home environment appliances, and the readings are passed to the web server designed. The parameters or commands sent through web page are monitored frequently and if any threats found the mobile connected to this web server is alerted through an alarm or message. The user can access this application from anywhere in the world. The result produced is low cost advantageous and absolute. Performance Analysis of different protocols (MQTT, HTTP and CoAP) is estimated using visualizations.

EXISTING SYSTEM

Generally we forgot to switch off the switches at home. Then the appliances at home are working as usual which can increase our electricity bills and sometimes it causes damage to our home. By this we can't get safety.

DRAWBACKS

- Security is less.
- It is inconvenient to the user.

PROPOSED SYSTEM

This paper aims at designing a basic home automation system of controlling multiple appliances which can be monitored and accessed from anywhere in the world with very low cost. The technology incorporates Raspberry Pi and the web server. The Raspberry Pi and Arduino integrated with Nrf modules are used to monitor the home environment appliances, and the readings are passed to the web server designed. The parameters or commands sent through web page are monitored frequently and if any threats found the mobile connected to this web server is alerted through an alarm or message. The user can access this application from anywhere in the world. The result produced is low cost advantageous and absolute. Performance Analysis of different protocols (MQTT, HTTP and CoAP) is estimated using visualizations.

ADVANTAGES

- Cost is less.
- The result is absolute.

SYSTEM EQUIREMENTS

H/W System Configuration:-

- Processor - Pentium –IV
- RAM - 4 GB (min)
- Hard Disk - 20 GB
- Key Board - Standard Windows Keyboard
- Mouse - Two or Three Button Mouse
- Monitor - SVGA

S/W System Configuration:-

- Operating System : Windows 7 or 8 32 bit
- Application Server : Tomcat5.0/6.X
- Programming Language : Java
- Java Version : JDK 1.6 and above

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