An IoT based Fire Alarming and Authentication System for Workhouse using Raspberry Pi 3

ABSTRACT

Ensuring minimum rights and safety of the garment workers has become a burning issue nowadays. The workers of garment factories are facing some labyrinths and broken out of fire is surely one of them. The investors are losing their interest and the prominence of this sector is getting toneless. In this paper, we have propounded a system which is capable to detect fire and can provide the location of the affected region. Raspberry Pi 3 has been used to control multiple Arduino which are integrated with a couple of sensors and camera. A 360 degree relay motor is assembled with the camera so that it can snap the image in whatever angle the fire is detected. We have provided a confirmation of the fire suspecting system to avoid any false alarm. The system will immediately send a message along with the image of the affected spot and Arduino's location. An admin can confirm or deny the impeachment and if the admin confirms the situation as a breaking out of fire, then the system will immediately raise an alarm and an automatic message will be sent to the nearby fire brigade.

EXISTING SYSTEM

Ready Made Garments (RMG) industry is the one of the main driving force in terms of economy for the Nation. Hundreds of factories are vulnerable to fire broke out because the factories are very old and lack fire detection technology. Moreover, most of the factories do not have an automatic system to stop fuel and electricity supply when fire breaks out, and it takes a lot of time for the fire service to reach the disaster spot .In this perspective, a system to detect fire and alarm the employees before it breaks out is a crying need.

DRAWBACKS

- We are not getting any alerts about fire accidents.
- Takes lot of time for the rescue operation.

PROPOSED SYSTEM

In this paper, we have propounded a system which is capable to detect fire and can provide the location of the affected region. Raspberry Pi 3 has been used to control multiple Arduino which are integrated with a couple of sensors and camera. A 360 degree relay motor is assembled with the camera so that it can snap the image in whatever angle the fire is detected. We have provided a confirmation of the fire suspecting system to avoid any false alarm. The system will immediately send a message along with the image of the affected spot and Arduino's location. An admin can confirm or deny the impeachment and if the admin confirms the situation as a breaking out of fire, then the system will immediately raise an alarm and an automatic message will be sent to the nearby fire brigade.

ADVANTAGES

- It reduces the fire accidents by giving alert messages and alarms.
- Lots of lives are saved.
- Material in the industry is also going to be saved there by getting less damage.

SYSTEM REQUIREMENTS

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