SYNOPSIS ON SMART BELL

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INTRODUCTION

In today's fast running world where technology is taking new shape every day, Automatic systems are being preferred over manual systems. Automation reduces human efforts and leads to more accuracy. Wireless Home automation using IoT is a system that uses computers or mobile devices to control basic home functions and features automatically through the internet from anywhere around the world.

Smart Bell is an idea of transforming a normal smart bell into a smart one by using multiple sensors. As smart home devices have the ability to learn our daily routines by detecting and memorizing our usage patterns and responding accordingly. Smart doorbell sends us text alerts through an app and keeps track of our home security and keeps us safe from intruders.

This system is super-cost effective and gives user the ability to control any electronic device without spending for a remote control. This project helps the users to control this device using their smartphone. Security is most crucial in this era. New technologies are being introduced for enhancing home security. For much better security we are introducing a Home smart doorbell system using IoT.

EXISTING SYSTEM

The Security has always been an important issue in the home as per the increasing crime rate scenarios. A remote home security overcome many drawbacks that exists in a normal doorbell such as –

- More strength and strain of manual owner needed
- Low security
- No record could be kept of visitors
- Absence of night vision
- Lack of distant monitoring
- Weather non-resistance
- Communication can’t be established

USE OF THE PROJECT

For making our day-to-day life more comfortable, secured and modified we are applying IoT based technologies at our home door. Doorbell being an initial part of security in our life we are updating it into a much more modern security system. Smart door bells present in market are way too expensive for a middle-class person. So, making it convenient for everyone we are developing a budget friendly smart door bell.

- The purpose to make this project is to provide a modern and more advanced security system.
- As we know there are many Smart Door Bells in the market so we are making this project to provide more featured and advanced device.
- There are various features provided to the user for making their life secured.
- On this project we are trying to make a budget friendly and affordable smart doorbell with various features for better security.

FEASIBILITY OF PROJECT

In this advancing era, the technology is growing rapidly. Normal devices can be modified in smart ones by usage of sensors and IoT. There are many features that can be added in a device which will enhance our day-to-day life at a higher level.

A smart doorbell is an internet – connected replacement for a traditional doorbell. It can notify a smartphone or other device of owner and integrate with a smart home automation system to display real-time video from your door. Note that “smart doorbell” is virtually synonymous with “video doorbell” because most have video cameras included-something to watch for if you’re researching. Doorbells, of course, notifies a visitor’s arrival. Smart doorbells expand on that basic function while bringing new convenience and safety functions to home door.

However, the commercial smart doorbells are quite expensive, usually between 3000 rupees to 10000 Rupees, which is a substantial impediment on the pervasiveness of smart doorbells. To solve this problem, we introduce the budget smart doorbell system for home use. It connects a Wi-Fi enabled device, ESP32 module, to a network and enables the home owner to answer the bell triggered by the dash button using a smartphone. The Doorbell system also enables face recognition and with the help of our app, home owner can answer the person outside with ease with the possibility of no contact and sense of security.

FUNCTIONAL SPECIFICATION

We got the idea for this project from various reasons. This project is very useful for security reasons. It saves the data of the people coming at the door. Many theft and murder cases take place in our society where people are not aware to the person at the door. By using smart bell system, we can see if who is at the door already and can see the person in our phone from anywhere.

A video doorbell is a more secure way to monitor your visitors and speak to them using the built-in pinhole camera, microphone, and speaker. It allows you to view everything on the installed indoor unit or even on your smartphone or tablet. Many such doorbells are equipped with infrared LEDs to activate night vision, which allows you to see everything outside your door even when it is dark. The built-in motion sensors can detect any movement outside your door and alert you on your smartphones in case of any intrusion. This nifty yet helpful features let you monitor your visitors and stay secured at all times. We have curated a list of the best video doorbells to help you keep an eye on the other side of your door.

Software Specification

- Technologies Implemented: IoT
- Language Used: Micro Python, Embedded C , Xml , Java
- Database: Google Firebase
- User Interface Design : Android Studio

Hardware Requirements

- Processor: intel core-i5/Ryzen-5
- Operating System: Windows 7/8/10 or Linux
- RAM: 4GB or above
- Hardware Devices:
  1. ESP32 CAM Wi-Fi Module Bluetooth with OV2640 2MP Camera Module
  2. MAX4466 Electret Microphone Amplifier with Adjustable Gain Module
  3. LM386 Audio Amplifier Module
  4. Speaker 8 Ω
  5. Push Button Switch - 12mm - 4 pin - Tactile - 10mm Height
  6. HLK-2M05 Hi-link 5V 2W AC to DC Power Supply Module
  7. 5mm IR LED Infrared Transmitter

FUTURE SCOPE

This project has a vast scope in future. It will help in security purposes. Consumers are interested in smart bells because of advantages such as flexibility combined with excellent security, simplicity of installation of sensors, easy access of camera from anywhere in the world, interaction with the person at the door and the ability to provide homeowners immediate notifications in the case of a crime. With the entry of new players into the global smart doorbell industry, new products are becoming available at more reasonable rates. The global smart doorbell industry will be propelled forward by consumer desire for a smart lock and smart doorbell combination. With improved technological integration, smart locks and smart doorbells provide high levels of safety and dependability, which is expected to fuel market expansion in the coming years. In addition to automated motion detection, manufacturers include face recognition technology into their devices, which acts as an upgrade option for the smart doorbell market. Face recognition technique offers great ability to be a real game-changer for smart doorbell suppliers that are looking to include value-added capabilities into their devices.

So, in the upcoming future smart doorbell will be a great smart product for more secure lifestyle.