PUNE INSTITUTE OF COMPUTER TECHNOLOGY

IOT PROJECT REPORT
ON
"CONFIDENTIAL DATA SECURITY SYSTEM USING RASPBERRY PI"

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Problem Statement: Confidential Data Security System that detects any suspicious activity and sends an email and sms alert of the data theft to the admin.

Hardware Components : Raspberry Pi model 3
IR sensor
Pi Camera
Breadboard
LED and resistors
connecting wires

Software Components: Raspbian OS
Python libraries
Internet connection

Theory:

1.Introduction

In surveillance, CCTV camera is costly because of the use of computer. It reserves too much space for continues recording and also require manpower to detect the unauthorized Activity. But compared to the existing system Raspberry pi system is much cheaper with better resolution and low power consumption feature. Here infrared (IR) sensors are used as a simple but powerful people presence triggers. This system is suitable for small confidential data area surveillance.
i.e. personal office cabin, bank locker room, home. Whenever the motion is detected through PIR sensor inside the room the image is captured through camera and temporarily stored in the raspberry pi module. Internet of things based application can be used remotely to view the activity and get notifications when motion is detected. System works standalone without the PC once programmed.

1.1 Motivation

The use of M2M (machine to machine) communication is anadvantage over the traditional Data Acquisition System (DAS)as the monitoring and controlling can be done without humanintervention . As the system becomes fully automatic so theamount of error decreases and the efficiency of the system increases drastically.

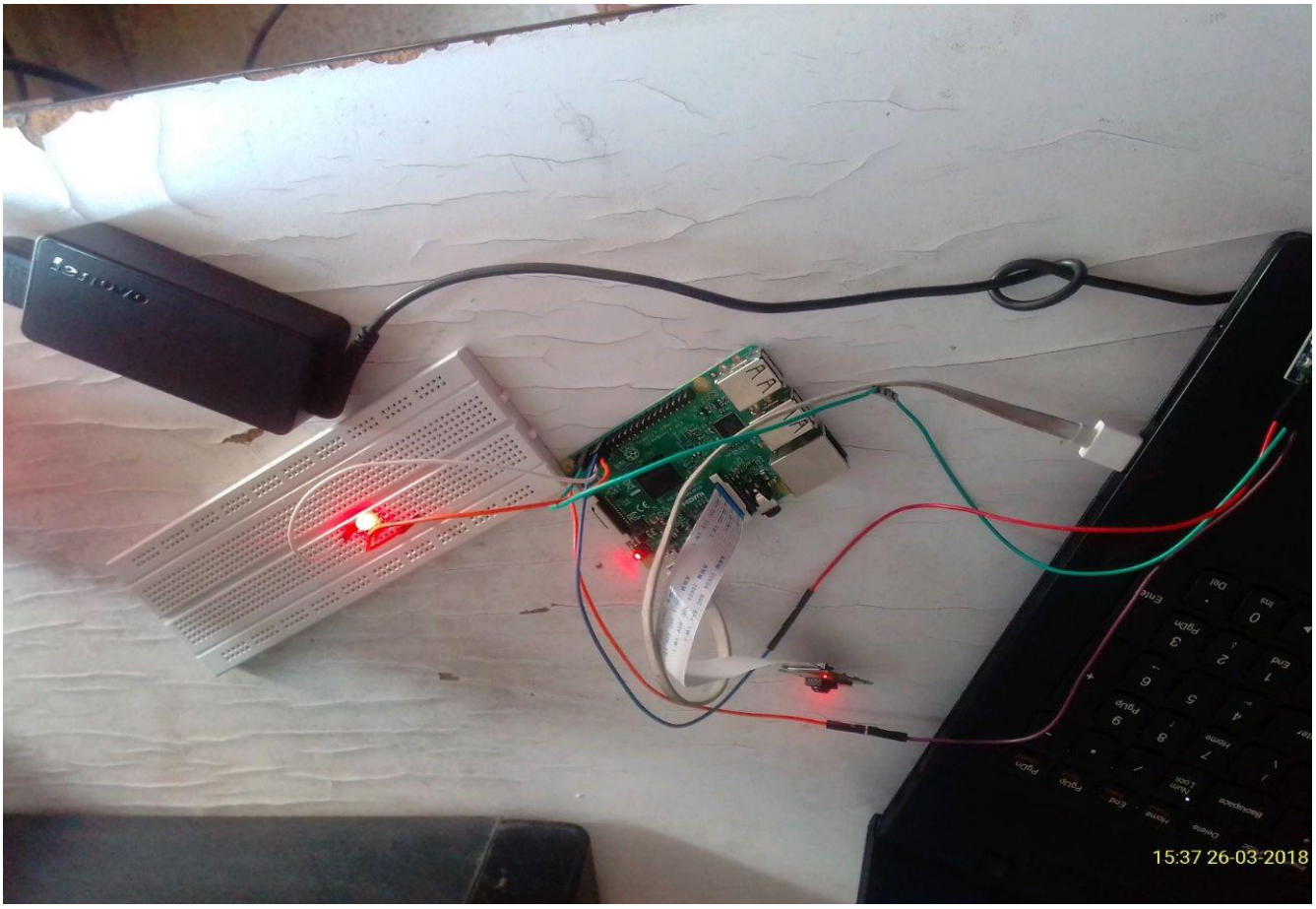
1.2 Advantanges

It offers privacy on both sides since it is being viewed by only one person. It is a simple circuit. The operating system used here is Raspbian OS. Just because all of those weak points of the surveillance system, an energy efficient portable system is proposed, that can take pictures when the burglary happens and send out an alert signal at the same time is much better than the current in use surveillance systems. It is simple to implement, small size portable stand-alone device with its own power source, energy capable with instantaneous alert, truly cheap for residential and personal use.

2. PROPOSED WORK

The aim is to make a smart data security system which can be monitored by owner remotely. As it is connected with the system with IOT, system will send the email notification and sms to android device when an data theft is detected inside the room. It is required to develop and implement and affordable low cost web-camera based surveillance system for remote security monitoring.Authorized user can access to their monitoring system remotely via internet . This entire work is done on raspberry pi with Raspbian operating system ported on it.

2.1 Connection



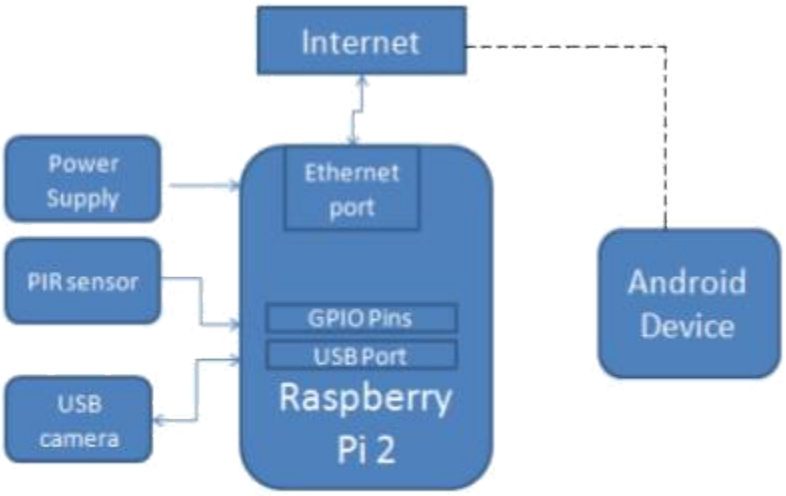
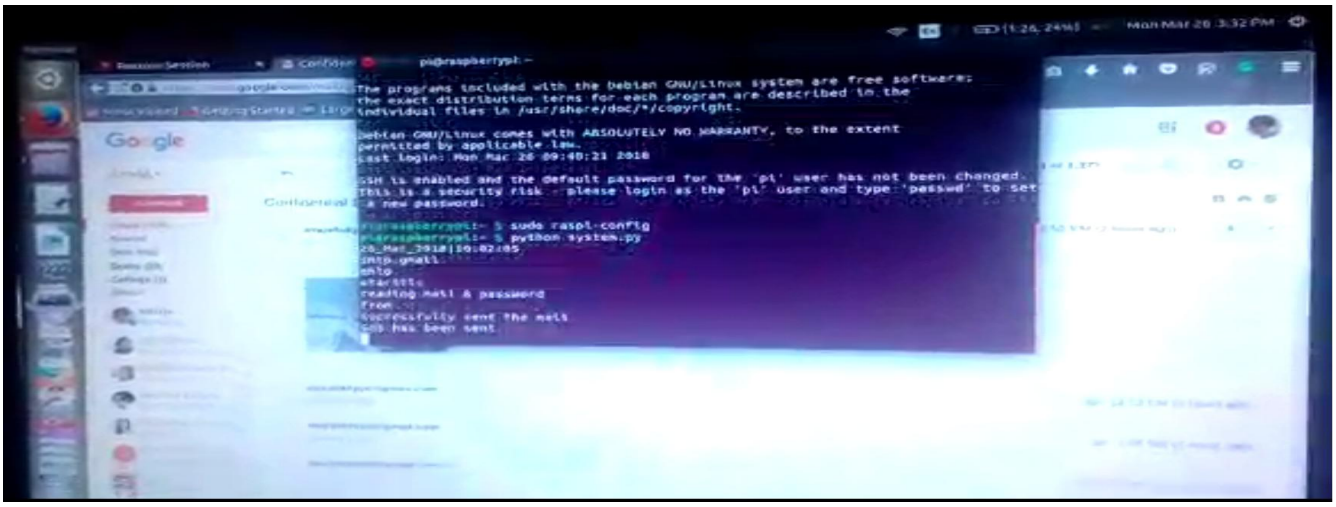
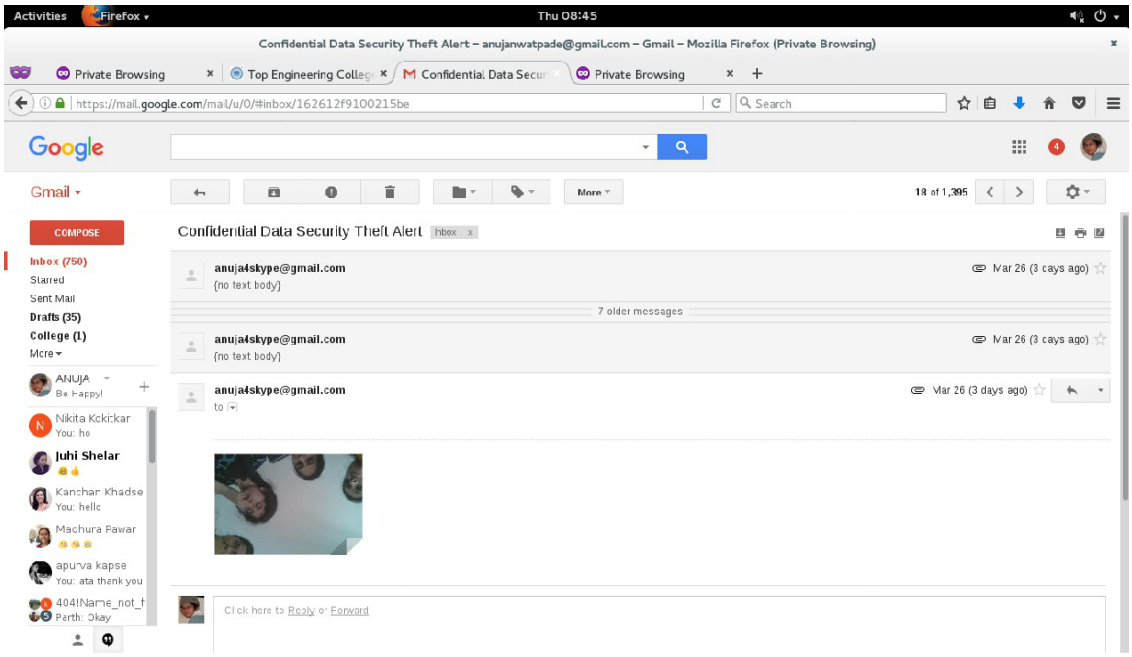
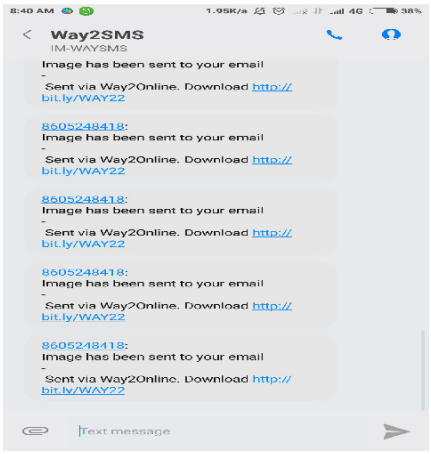


Fig 1: System Block Diagram

2.2 OUTPUT







CONCLUSION:

Thus we have successfully implemented the smart surveillance system in such a way that it can fulfill the needs of the user for particular surveillance area. It has countless applications and can be used in different environments and scenarios. User can view captured image remotely . On Future expansion live video streaming can be added as per the user requirement.