

Counterfeit currency detection using Image Processing and Mobile Recharge System

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Abstract — Nowadays, near about each man uses a mobile phone, so the recharging of mobile phones has also become a most important task. We are trying to achieve an automatic mobile recharger machine which provides a 24 hour services without interference or need of man. In our daily life we recharge our mobile phone manually, that's we should go to shop or agencies, also these type of easy recharges are not available for 24hrs, also on long root or Expressways. The main blocks of the system are Currency detector, GSM module and user interaction devices. The currency detector is used to detect the amount of money entered and also to check the whether the currency is genuine or not. Global system for mobile communication system (GSM) provided the efficient services and technologies for mobile networks.

GSM – Global System Machine

1 INTRODUCTION

This paper explains a new method for recharging of mobile phones. Now a days e-recharges are available but all common people are not aware about e-recharges.

Recharging of mobile phones are one of the most important task in day today life. So here we introduces a new technique for recharging of mobile phones in accordance with fake currency detection.

Indian currency notes have a size difference of just 10mm between two consecutive denominations and maion explke it highly unlikely for a blind person to determine it curreectly. Identification process of Indian currency with image processing technique such as noise reduction, followed by feature extraction, to lo ate lines,regions and possibly areas with certain textures.

Manual testing of all note transactions are time consuming. Here note is placed infront of camera to check whether it is genuine or not. The camera Pictures of notes are analysed by python code installed in computer.

The telecom provider increasing consumers day by day recharging of mobile phones become most important task in daily life. In this paper we

describes a new method for recharging mobile phones. The system implemented with the help of image processing for fakeE currency detection.

2 SYSTEM MODEL

In this section explains about the detailed description about the entire system.

2.1 Block Diagram

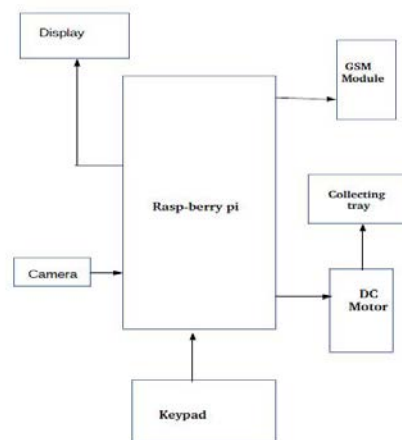


Fig 2.1 block diagram

The camera, keyboard, lcd monitor, dc motor, l293d motor driver and one uv light system are connected to raspberry-pi. The camera is used to capture image of currency note and it is storing into the system. Keyboard to used to enter mobile number to be recharged. LCD monitor used to display the mobile number and amount of entered currency note. DC motor is used to move the currency note from outside to the secure tray. Motor driver l293d is used to control the movement of the DC motor. Input of the motor driver is connected to the GPIO pin of the raspberry-pi. Then raspberry-pi can control the movement of DC motor. The one uv light system is connected with raspberry-pi it will turn ON when a currency detected. The uv light system is controlled by using a relay circuit. We are using 12v relay. The relay is interfaced to the raspberry-pi. The uv light will turn ON when the relay switched.

2.1.1 Raspberry pi

The Raspberry pi is a low cost, credit card sized computer the plugs into computer monitor or TV, and uses a standard keyboard and under mouse. It is capable little device that enable people of all ages to explore computing and to learn how to program in languages like scratch & python. It is capable of doing everything you'd expect a desktop computer to do, from browsing the internet & plying HD videos, to making spreadsheets, word processing & plying games.

Raspberry pi has the ability to interact with the outside world & and has been used in a wide array of digital makes projects, from music machines & parent detectors to weather stations & tweeting bird houses with infrared cameras.



Fig 2.1.1 Raspberrypi kit

2.1.2 GSM Module

GSM (Global System for Mobile) is SIM900 Quad-band GSM / GPRS device, works on frequencies 850 MHZ, 900 MHZ, 1800 MHZ and 1900 MHZ. It is very compact in size and easy to use as plug in GSM Modem. The Modem is designed with 3V3 and 5V DC TTL interfacing circuitry, which allows User to directly interface with 5V Microcontrollers (PIC, AVR, Arduino, 8051, etc.) as well as 3V3 Microcontrollers (ARM, ARM Cortex XX, etc.). The baud rate can be configurable from 9600-115200 bps through AT (Attention) commands. This GSM/GPRS TTL Modem has internal TCP/IP stack to enable User to connect with internet through GPRS feature. It is suitable for SMS as well as DATA transfer application in mobile phone to mobile phone interface. The modem can be interfaced with a Microcontroller using USART (Universal Synchronous Asynchronous Receiver and Transmitter) feature (serial communication).

2.1.3 Camera

Camera is used to record the image of entering currency. Here the camera that feeds or streams its image in real time to or through a computer to computer network. When captured by the computer, the video stream may be saved, viewed or send on to other networks via systems such as the Internet, and email as an attachment. Webcams are known for their low manufacturing cost and their high flexibility, making them the lowest cost form of video-telephony. Despite the low cost, the resolution offered at present is rather impressive, with low end web cams offering resolution of 320*240 , medium web cams offering 640*480 resolution, and high end web cams offering 1280*720 Or even 1920*1080 resolution. They have also become a source a of security and privacy issues, as some built in web cams can be remotely activated via spyware.

3. CONCLUSION

There are many methods for identifying a fake note. One should be cautious while detecting a fake note. Our paper enables a layman to identify a fake note and empower every citizen to detect fake notes which may reduce corruption in our country. Our image processing technique when deployed in mobile phone with a scanner or a camera so that it will detect fake notes which gives the power to a common man to control fake currency circulation in our country. The second phase is that , about the Global System for mobile technologies and the architecture and mechanisms that are supported a mobile environment. Mobile Agent technology provided the increased bandwidth over a telecommunication networks and how the sms provided to the server without any data missing through the networks after checking the authentication details. And proceed the algorithm for query confirmation and request processing.

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REFERENCES

- [1]. 'Fake Currency Detection Using Image Processing and Other Standard Methods' D.Alekhya , G.DeviSuryaPrabha , G.VenkataDurgaRao Anil Neerukonda, *Institute Technology And Sciences (ANITS), Visakhapatnam*
- [2]. 'Gsm Mobile Technology For Recharge System,' S.Alamelu, S.Bhuvaneshwari Department Of Ece ,*Periyar Maniammai University , Vallam, Thanjavur.*
- [3]. 'Various Fake Currency Detection Techniques , Megha Thakur1', Amrit Kaur *Department Of Electronics and Communication, Punjabi University Patiala, Punjab, India*