International Journal of Research
Available at https://edupediapublications.org/journals
p-ISSN: 2348-6848
e-ISSN: 2348-795X
Volume 03 Issue 14
October 2016

Running Multiple Programs & Message Processing Using a Single Circuit Board

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ABSTRACT:

The fundamental goal of this system design is how the permitted user will send SMS from his mobile phone to GSM module, this message may be the notification to be placed within the website database which is displayed to the monitor. To receive the message a SIM card is placed in GSM module and this really is connected to Raspberry Pi through RS232 serial port. This paper describes a Raspberry Pi controlled SMS-Update-Notification (SUN) system. Raspberry Pi is really a charge card sized single board computer with ARMll micro-processor. Short Message Service (SMS) is among the least expensive and finest method for delivering a note from mobile. Fundamental concept of SUN product is to inform updates to folks inside a working atmosphere from approved persons at anywhere simply by SMS. This is accomplished by conjunction of GSM module with Raspberry Pi. This message is going to be read and displayed via a website on monitor by Raspberry Pi. Working process of this SUN system is simply the approved person can send SMS everywhere towards the SIM in GSM module.

Keywords: Raspberry Pi, GSM module, SMS, Database and Website.

I. INTRODUCTTON

Microcontroller cannot run multiple programs at any given time. To beat these complaints, computer may be used to display notices on the majority of monitors at any given time. But, utilizing a computer for this function is extremely costly. At the moment, notification systems are utilizing either microprocessors or computer systems to show the messages. Using microprocessors microcontrollers notifications can be shown on brought shows. But to interface a monitor screen using micro-controller is complex.

Raspberry as being a single board computer may be used here to resolve these complaints [1]. Using Raspberry Pi multiple programs could be run at any given time. Evaluating to some computer, this really is economical and incredibly less power consuming. Because this board is getting built-in HDMI port interfacing with all sorts of monitors is straightforward. With this particular board, exterior products could be interfaced using USB ports. Raspberry Pi can be used as multiple reasons based on our requirement. SUN product is a brand new kind of notification system where Short Message Service (SMS) can be used to transmit the notification to become displayed. Permitted authority will be sending SMS using their mobile this is up-to-date around the monitor like a new notification. Raspberry Pi: Raspberry Pi is really a single board computer. This board is no more than a charge card size, economical when in comparison for an actual computer, uses power rating of 5V, 700mA also it weighs in at only 50g. Raspberry Pi board is available in three models A, B; B. B may be the advanced form of the 3. B model includes 512 MB RAM. It operates on ARM 11 processor typically works at 700MHz frequency. It features a SD card slot for installing a bootable Operating-system using SD card. Oz's like Caspian, Pandora, and Raspbmc etc. could be installed. It's four USB2. Ports to hook up with products like keyboard, mouse, Wi-Fi adapter etc., based on our use to really make it a complete size computer. We have an Ethernet port to hook up with network. GPIO pins are utilized to interface and control LEDs, switches, sensors along with other products. With the aid of HDMI port, all sorts of monitors like LCD screens, projectors, TVs is also connected. Within this board, extra features like camera connector can be found to interface camera as well as an audio jack available too. With all of these features, Raspberry Pi isn't just restricted to single use; it may be of wide use based on the application. GSM Modem with Sim900 module is made with Dual band GSM/GPRS. It really works on wavelengths 900 1 1800 MHz It features a variable baud rate with vary from 9600 to 115200. Baud rate could be configurable using AT instructions [2]. It works on 12V controlled power. It features a Sims slot to insert SIM along with a receiving antenna to get network signals. Its RS232 interface which enables it for connecting products like PC, Raspberry Pi, microcontroller etc. This module are capable of doing the fundamental functions of the cell phone like

receiving and delivering SMS, voice calls, and TCP/IP communication over GPRS according to various AT instructions. T instructions could be sent through the serial port on Raspberry Pi, thus functions for example dialing and responding to calls, delivering and receiving messages and surfing online could be recognized.

II. PROPOSED METHOD

At present, notification systems are using either being a single board computer may be used here to solve may be displayed on introduced shows. But to interface a may be used for multiple reasons according to our computer for this purpose is very pricey. Raspberry controller cannot run multiple programs anytime. To products may be interfaced using USB ports. Raspberry Pi display notices on almost all monitors anytime. But, using types of monitors is simple. With this board, exterior microprocessors or pcs to display the messages [3]. Using Raspberry Pi multiple this board is getting built-in HDMI port interfacing wonderful this is often cost effective and very less power consuming. The fundamental purpose of the device design may be the permitted user will probably be delivering SMS from his cell phone to GSM module; this message may be the notification to obtain placed within the website database that's proven using the pc monitor. To get the content a Sims is positioned in GSMmodule that's connected with Raspberry Pi through RS232 serial port. An internet site is produced to demonstrate the data received on monitor. The web server will run itself on Raspberry Pi. A program is presented or looking in the messages from GSM module and to place them straight into website database. Raspberry Pi makes use of this program to look for the messages using GSM module only from permitted clients. And it also inserts individuals to database within the site that is proven using the pc monitor connected through HDMI port. Thus, Raspberry Pi will end up central authority within the whole system modifying the site along with the GSM module too. By using HDMI port LCD /Introduced monitors may be connected. Employing a HDMI extension switch, message might be proven on several monitors anytime. This process is applicable to demonstrate messages / notices that should be regularly up-to-date in industrial areas / college notice boards.

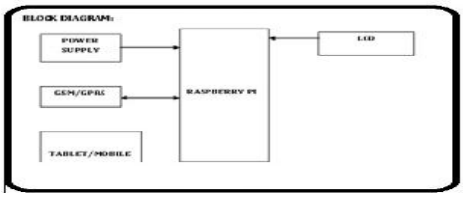

Fig.1. Block diagram of the SUN system

III. METHODOLOGY

Raspberry Pi operating-system is Linux-kernel based; it supports all programming languages like Python, C etc. Python programming can be used in SUN system as you can easily talk to serial port and simple for connecting databases using MySQL dB, a python module's module accepts only certain instructions through serial communication and reacts to them [4]. These instructions are known as "AT Instructions", AT means attention. There's a group of AT instructions to do different functions, every command beginning with 'AT'. In Raspberry Pi, a course is presented in python programming language to see the messages from GSM Module through serial link with link it with website and shows it around the monitor connected. The fundamental goal of this system design is how the permitted user will send SMS from his mobile phone to GSM module, this message may be the notification to be placed within the website database which is displayed to the monitor. To receive the message a SIM card is placed in GSM module and this really is connected to Raspberry Pi through RS232 serial port. An internet site is produced to show the content received on monitor [5]. The net server will run itself on Raspberry Pi. A program is written for studying the messages from GSM module and to insert them in to website database. Raspberry Pi will use the program to read the messages using GSM module only from permitted customers. And it inserts them to database from the website which is displayed to the monitor connected through HDMI port. Thus, Raspberry Pi will act as central authority from the whole system controlling the website and also the GSM module also. By using HDMI port LCD / Brought monitors may be connected. By using a HDMI extension switch, message may be displayed on several monitors at a period. This system is relevant to display messages / notices that need to be regularly up-to-date in industrial areas / college notice boards.

IV. CONCLUSION

The fundamental goal of this system design is how the permitted user will send SMS from his mobile phone to GSM module, this message may be the notification to be placed within the website database which is displayed to the monitor. This SUN system may be used in wide areas like industries & schools. An immediate use of SUN system i.e., upkeep

of local websites is described within the application section. This SUN system highlights among the programs by utilizing only a couple of options that come with Raspberry Pi. Raspberry Pi using its wide features can be used as multi reasons and also have much scope for future work. The work could be extended later on to promote in public areas not only restricting to notification systems.

REFERENCES

[1] Raspberry Pi Foundation, http://www.raspberry.org

[2] Sarthak Jain, Anant Vaibhav and Lovely Goyal, "Raspberry Pi based Interactive Home Automation System through E-mail", International Conference on Reliability, Optimization and Information Technology-ICROlT 2014, India, Feb6-8 2014.

[3] Maik Schmidt, Raspberry Pi. A QUick Start Guide. Pragmatic Programmers, LLC, 2012, pp. 1-47.

[4] SlM900_AT Command Manual_ Vl.03, Shanghai SIMCom Wireless Solutions Ltd.2010.

[5] Python Software Foundation[US], https://pypi.python.orglpypi