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"RASPBERRY PI"

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ABSTRACT

In this paper, we are exhibiting an automated weather monitoring system using BMP 180 sensor and this sensor data is represented graphically using ThingSpeak and simultaneously logged into google spreadsheet. Internet of things (IOT) can be considered as a combination of effective hardware and impressive software which results in smart objects which are able to communicate and interact among themselves. Raspberry Pi is credit card sized computer manufacture and designing in the United kingdom by the Raspberry Pi foundation with the intention of teaching basic computer science to school student. Raspberry Pi being a very cheap computer has attracted millions of users around the world. They it has a large user base. The GPIO makes it perfect for controlling almost anything programming the GPIO is much easy and intensive than an tradition FPGA or microprocessor.

Index Terms: *GPIO,FPGA, BMPIOT, microprocesso,credit card.*

1.INTRODUCTION

The Raspberry Pi is a series of small single board computers developed in the united kingdom by the Raspberry p foundation to promote the teaching of computer science in schools and developing countries. The original model become far more popular than anticipated selling out side of its target market four uses such as robotics peripherals (including keyboard, mouse & cases) are not included the Raspberry Pi. Some accessories however have been included in several official and unofficial boundles.

1)RASPBERRY PI:

The Raspberry Pi is a credit card size computer that plugs into your TV and a keyboard. It is a capable little computer which can be used in electronics projects and for many of the things that your desktop PC does, like spreadsheets, word processing, browsing the internet and Playing games.

A single board , very flexible, four watt computer in $35 (model B) and $ 25 (model A) flavors designed and made in the UK.

1.HISTORY :

Around 2005 Eben Upton was Director of studies in computer Science at Cambridge. Incoming students had relatively few programming and/or hardware skills vs "the old days", creating vision of "something like the BBC computer, but running a modern language like Python." The name "Raspberry Pi" is a combination of " a fruit name" and a play on "Python." Between 2006-

1) LOGIN IN FOR FIRST TIME:

1.1) Insert a card
1.2) Apply power to the divice
1.3) Red LED should come on
1.4) After 5 seconds
- Green LED should begin to flicker.
- Text should be appear on the screen.

2) WORKING DEVICE OF RASPBERRY PI:

The computers that doubled as gaming consoles, such as the Ataris and Commodores, allowed you to insert game cartridges. But they also allowed users to write programs in various flavors of BASIC (a more user-friendly programming language than most others of the era). At a time when there was little software available for purchase, you could buy books and magazines containing prewritten programs to retype and run on your home system, or you could write your own. Whichever you chose, you were learning at least a little programming along the way.

The devices allowed you to work on a command line, boot into programming environments and otherwise become familiar with the back-end operating system out of necessity. The Commodore 64 had a rudimentary graphical menu system, the predecessor to modern graphical user interfaces (GUIs), but you still had to know more about the computer than you do nowadays. Several of these systems attracted kids and adults alike via the games, but they also encouraged learning to program in order to get the most out of the machines.

As computers became increasingly complex over the '90s, and gobs of prewritten software became available, computers morphed into fully functional and indecipherable black boxes. Most modern GUIs hide the back-end processes of the

2011 the vision turned into a highly capable single board computer design.

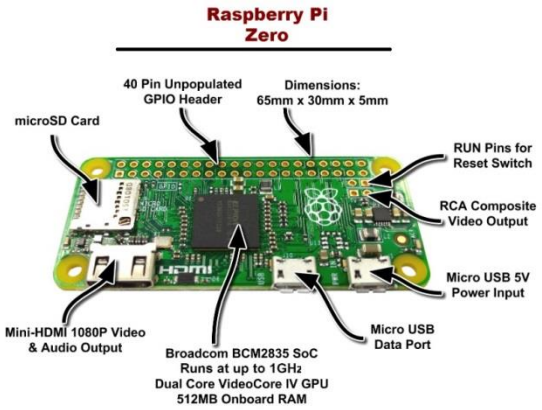

Fig.1

and you have install special software to write and compile programs. Unless you work in or study IT, you never have to go to the command line or write your own software.

This evolution has helped bring us to the current crisis. There's less need for people to tinker with the inner workings of computers, and the focus has shifted to more mundane uses (like using office software, sending e-mail and surfing the Internet). Since PCs have become as central as television to many of our daily lives, many parents aren't likely to let their kids needlessly tamper with their expensive family computers. The Raspberry Pi could bring us out of this predicament by providing a programmable device that anyone can play with, including children.

5) BIOGRAPHY : -

Components of Raspberry Pi

5.1) ARM CPU/ GPU –

This is a Broadcom BCM2835 system on a chip (Soc) that is made up of an ARM central processing unit (CPU) and a video core 4 graphics processing unit (GPU). The CPU handles all the computations that make a computer work and the GPU handles graphics output.

5.2) GPIO –

These are exposed generate purpose input/ Output connection points that will allow

6.**APPLICATIONS**

6.1) It can be used in robotics for controlling motors, sensors etc.

6.2) It can be used as a downloading machine replacing desktop computers. It consumer very low power & also can be accessed remotely.

operating system. Games and other software are impenetrable,

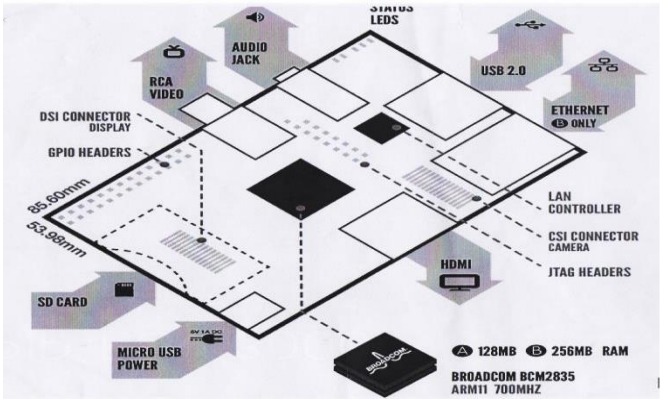

Fig.2

5.4) HDMI –

This connector allows you to hook up a high-definition television or other compatible device using an HDMI calbe.

5.5) POWER –

This is a 5V micro USB power connector into which you can plug your compatible power supply.

5.6) SD CARDSLOT –

Tish is a full sized SD card slot. An SD card with an operating system (OS) installed is required for booting the device. They are available for purchase form manufacturers, but you can also download an OS and save it to the card yourself if you have a LinunMashine and the wherewithal.

5.7) ETHERNET –

This connector allows for wired network access and is only available on the model B.

the real hardware hobbyists the opportunity to tinker.

5.3) RCA –

An RCA jack allows connection of analog TVs and other similar output devices.

5.8)Audio Out –

This is a Standard 3.55 – millimeter jack for connection of audio output devices such as headphones/ speakers. There is no audio in.

5.9)LEDS –

Light emitting diodes, for all of your indicator light needs.

5.10) USB –

This is a common connection port for peripheral devices of all types (including your mouse and keyboard). Model a has one and model B has two. You can use a USB hub to expand the no. of ports or plug your mouse into your keyboard if it has its own USB port.

and has given you the tools and techniques to carry on this journey so that you are able to create the perfect home security system for your needs.

REFERANCE

6.3) It can be used in creating & handling small servers.
6.4) It can be used for making digital photo frames, tablets etc. at home.

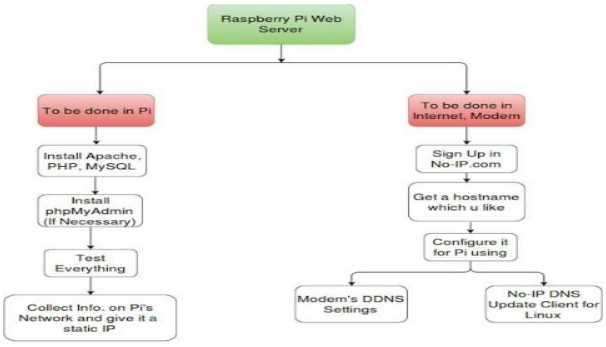

Fig.3

7) ADVANTAGES :–

7.1) The Raspberry PI is perfect for adaptive technology it is able to display images or play videos at 1080p hight definition resolution
7.2) The product is energy efficient and provides a greener ethical alternative to small businesses.
7.3) This small credit card sized product makers it easy to recycle and does not release as much carbon dioxide emission into the environment.

8) DISADVATAGES :-

8.1)It does not replace your computer.
8.2) The Ethernet is only a 10/100 and the prodessor is not as fast.
8.3)Nable to do any complex multitasking.
Not compatible with other operating systems such as wihdows.
8.4)This product will not be useful for bigger businesses that already have big servers.

9) CONCLUSION:

The Raspberry pi is a powerful little beast and a great platform building low cost, but highly capable, embedded system. The interfaces build into its GPIO connector make it easy to bolt on modules using simple low cost electronics and a bit of configuration to create very functional and flexible system. The inclusion of a dedicated camera interface and networking interfaces give you everything you could possible needs for an internet – connected home security system.
I have covered lot of topic , and I could have gone on and on, but I hope that what I have presented has been done in a structured and methodology way,

1. http://www.themagpi.com
2. http://www.tinyurl.com/RPi-edu
3. Via http://www.raspbrrypi.org
4. www.google.com