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Data Transfer between Flash Drives without Using a Computer

Vismay Deshpande¹, Pritesh Kankaria¹, Shubham Lende¹, Vrushikesh Yadav¹, Sindhu M.R²

B.E Student, Dept. of Computer, G.H.R.C.E.M, Pune, Maharashtra, India¹

Asst. Professor, Dept. of Computer, G.H.R.C.E.M, Pune, Maharashtra, India²

ABSTRACT: Storage devices such as Pen drives and hard drives, popularly known as USB flash drives, usually requires an intermediate computer for data transfer between the storage devices. Since an USB flash drive is a peripheral device, it requires a host - computer. Our aim is to provide a system of communication between USB storage devices so that a computer or a Laptop is not needed in between, for transfer of data among storage devices. This is possible by using a module that will allow us to transfer data over the flash drives. A display element can be used to display the contents of the storage device. A computer requires more power and time to complete only the task of data transfer. A low power battery is used to provide enough amount of power supply to the module. Although this proves to be a costly implementation for a low cost Pen drive, if implemented in high cost hard drives, it will provide an efficient and portable storage transfer medium. The implementation of this project will be helpful and it will provide a handy portable device for any user.

KEYWORDS: USB, Flash Drives, Raspberry Pi, Processor, Host.

I. INTRODUCTION

Due to increasing digitization in recent years, computers and mobile phones are becoming very needy and useful electronics gadgets in our day-to-day life. The ability to store data is one of the greatest advantages in any electronic gadgets. Other than this internal storing ability, when a data is to be carried along with the user or the user wants it to store externally, storage devices such as Pen drives and hard drives come into picture. With the increasing use of computers, the external storage devices are also gaining its importance because of its portability and light weight. External Hard drives providing a suitable means of communication between these USB flash drives to enable them to communicate among them without an intermediate computer will prove to be time consuming and enable faster rate of communication. This in turn supports power conservation.

II. SYSTEM OVERVIEW

The system deals with data transfer between two USB flash drives without using a computer. We are creating modules that will help us to create a communication as well as transfer data between the given two pen drives. There will be two modules, each accepting one USB flash drive. The device will be connected to the USB port of the module. This USB port will pass a signal of detection of pen drive to the microcontroller. The pen drive and the data inside the pen drive will be denoted on the LCD screen attached on the module. Similarly, the other pen drive will also be connected to another USB port of same module and it will display the detected pen drive on the display screen. Then we will establish a connection between this two pen drives so as to transfer the data. So, we will select source pen drive in one of the box and destination pen drive in another box. Now there is a proper connection established in between the two devices. This will be used as a connection medium to transfer the data. The basic operation of copy, paste, delete can be successfully implemented in these two devices. For example, if we want to transfer a file from Pendrive 1 to Pendrive 2, then we will select the file to be transferred in first module and give the command operation for copying, and also it will show the data in Pendrive 2. So we will just move over to Pendrive 2 at Paste the file which we need to transfer to it. This will successfully transfer the data from one Pendrive to other Pendrive. Our main aim is to transfer

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the data between two Pendrive without using a computer. As, many times, it is not easy to carry the computer or the laptop just for the sake of data transfer. This not only consume time but also it will not be easy to take the computer wherever we need to transfer only the data. Instead of using the computer we'll be using these modules, so that we could easily transfer the data between the Pendrive. The easy to handle and portability factor plays a very important role in the flow of this project. Various factors are considered in creating the respective modules

III. RASPBERRY PI BOARD

The Raspberry Pi board is a microcontroller that we are using for performing the embedded programming operations we'll be using in to build a data transfer module. It has been the brain of thousands of projects, from everyday objects to complex scientific instruments. It is simple and user accessible through programming.

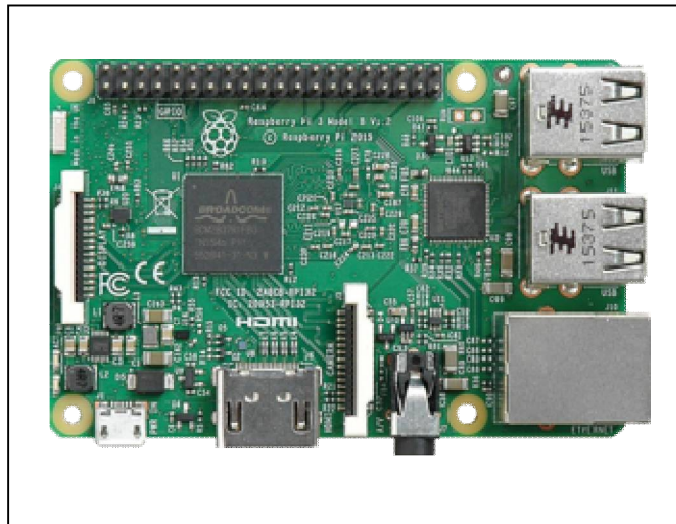


Fig.1: Raspberry Pi Board

The Raspberry Pi is a microcontroller board based on the ARM. It comes with a 1.2 GHz ARM Cortex processor. It consists of 1 GB Ram. It has 4 USB port, 2 of which will be used by the pen drives. It requires 4 W power supply to get operated. CPU speed ranges from 700 MHz to 1.2 GHz and on board memory ranges from 256 MB to 1 GB Secure Digital cards are used to store the operating system and program in either SDHC or Micro SDHC size. The raspberry pi 3 also comes with a Wi-Fi technology built in. It can be used to network the raspberry pi externally. It also consists of a HDMI port. This board is used for performing different data transfer operations which is operated by mounting a LCD screen on the Raspberry Pi board. Which contains Rx and Tx that acts as a receiver and transmitter pins respectively.

IV. LCD TOUCH SCREEN

The complete visualization of the working can operated and displayed using a LCD screen display. It will be connected at the top of the module, for handy use of user. It allows user to interact with the module and perform the operations with respect to the data transfer visualization. The screen will display all the graphical structure which will be programmed accordingly. It is a 5.5 inch capacitive display screen. That will be easily operated by the user. The screen must be properly connected to the USB shield and the power supply must also be insulated to avoid the power cut-off and shot circuit problem. That will lead to problems in constructing the device

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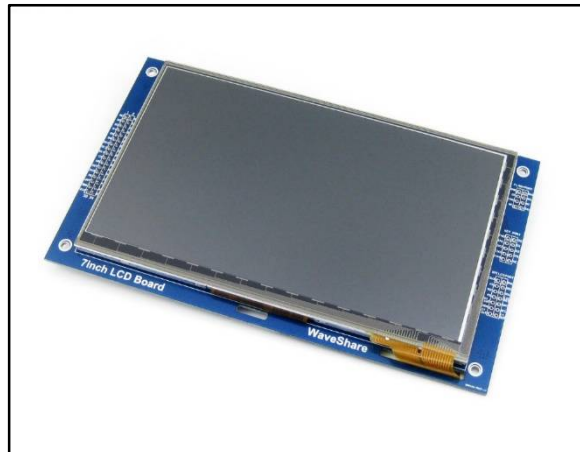


Fig.2: LCD Touchscreen Display

V. WINDOWS 10 IOT

The Windows 10 IOT is an operating system that is used to compute and operate over system on chip processors such as raspberry pi. The Windows 10 IOT core is an extensible windows platform API for building great solutions over the optimization through its use on raspberry pi. The requirements for Windows 10 IOT depends on whether it is run in a headed or headless mode. Headed devices have a video display and use Windows video subsystem to address it. Headless device have no display. Memory required for Windows 10 IOT is 512 MD RAM (128 MB free to OS) or a 2 GB storage. Minimum 400 MHz processor is required

VI. SYSTEM CONNECTIONS

A. Connecting LCD screen to Raspberry Pi board:

The LCD screen will be connected to the top of the USB host shield. There will be a 4 byte communication between these two. We will connect the LCD screen to the GPIO pins and the HDMI pins of the Raspberry Pi board. It will display the GUI and user can used to interact and operate it for performing different tasks.



Fig.3: Connection between LCD and Raspberry Pi

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B. Connecting Power supply:

We will connect a Power Supply to the Raspberry Pi board. It will be connected using an USB cable. So the device will get the supply from the same cable. But later on when the program will be uploaded into the board we will connect it to an external power battery. The battery must be of a voltage that will meet the minimum power requirement of the device. If it fails to provide the necessary power, the device will fail to implement all the operations.

VII. SYSTEM ARCHITECTURE

The system architecture of the data transfer module will be as shown in the figure below:

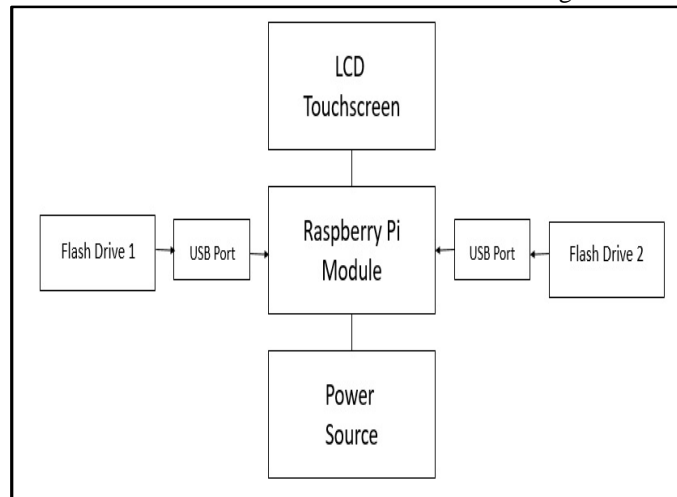


Fig.4: System Architecture

As shown in the block architecture, the two flash drives are connected to the two USB port of the Raspberry pi board. Further a LCD screen is mounted on the Raspberry Pi board which is used for the operation performance. This is a pure connection that must be established so as to conclude the data transfer between the devices.

VIII. PROGRAMMING

The complete programming will be done in a C# and Visual Studio. Which can be operated on the Windows 7 / 8 / 10 operating systems. The basics of the programming language consists of some functions and variables that are used in any other object oriented programming and other graphical programming languages. It is a simple software tool that enables a programmer to give input and command the real time hardware systems accordingly. It only requires some basic strategies and further logic can be ultimately applied through the requirement of hardware or the project.

IX. RESULTS

The final outcome will be the successful transaction between the two pendrives without using a computer. It will perform all the basic operations that need to be used during a data transfer such as, copy, paste, delete. The capacitive touchscreen will enable the user to provide necessary information regarding data transfer as well as the data inside the given USB drives.



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X. CONCLUSION

Hence, we conclude that we can transfer data between two pendrives without using a computer. It is necessary that, a successful communication must be also established between the devices and it will result into proper transmission. All the basic operations of data transfer i.e. copy, paste, delete is implemented by using these device. It has also resolved the problem of easy user portability. Which means this module can be easily carried to any place rather than carrying bulky computers or laptops just for the sake of data transfer.

XI. FUTURE SCOPE

The data transfer could be performed more quickly by using Wi-Fi. Minimization of circuit can be done. Also we can use high security antivirus systems.

REFERENCES

- [1] B.Naresh Kumar Reddy, N.Venktram and T.Sireesha, "An Efficient Data transmission by using Modern USB Flash Drive," in International Journal of Multimedia and Ubiquitous Engineering.(IJMUE), Vol 9, Issue No. 10, 2014.
- [2] J.Nandini Meera, S.Devi Abirami, C. Chithiraikkaylvizhi, "Modern and Distinguished USB Device with extendable memory capacity" in International Journal of Advanced computer science and applications (IJACSA), Vol 3, Issue No. 11, 2012
- [3] Amirthaganesh.S, "Wireless USB flash drive" in International Journal of Scientific and research publication (IJSRP), Vol 4, Issue no. 5, 2014
- [4] Mukesh Tiwari, Siddhartha Motgahre, Jimit Gada "Flash Drive to Flash drive data transfer" in International referred journal of engineering and science (IRJES), Vol. 2, Issue No. 3, 2013.
- [5] V.S.Gawali, A.M.Agarkar, "Pen drive to pen drive and mobile data transfer using ARM" in Journal of Electronics and communication engineering (JECE), Vol. 3, Issue No. 2, 2014
- [6] Vismay Deshpande, Pritesh Kankaria, Shubham Lende, Vrushikesh Yadav, Sindhu M.R "Data Transfer Between flash drives using bluetooth" International Journal of Advance Research in Computer Science and Management Studies (IJARCSMS), Vol. 4, Issue No. 10, 2016