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Smart Digital Photo Frame Design

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***Abstract:** A Digital Photo frame, also known as a digital media frame. It's a device that displays pictures digitally without the use of a computer or printer. Today's Digital picture frames comes in a number of designs and sizes, as well as with a variety of extra capabilities. The advent of digital picture frames antecedent all computers commence the dawn of projecting memories digitally. Digital photo frames were originally designed to showcase stationary, slide show of images digitally hence they give a professional look to display images in a frame and due to simplicity in the design, it can be used continuously. You can even run a video containing multiple images with a short display time frame.*
***Keywords:** Digital Photo Frame, Raspberry pi, Images, Digital Picture Display, Interaction design*

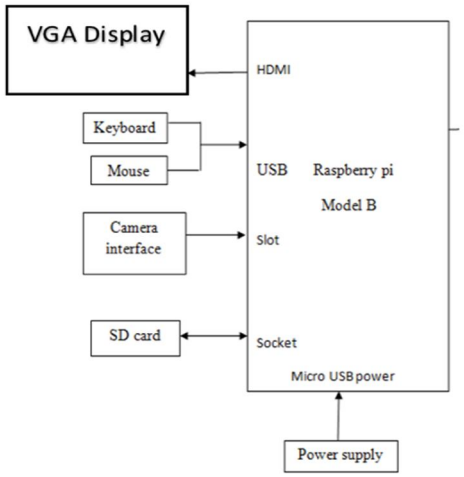
I. INTRODUCTION

The majority of tabletop photo frames are designed to be used with printed photographs and if one wants to change them, he/she will have to do it manually because photos will not be updating automatically. This problem got solved by the introduction of Digital Photo Frames but currently, they are very expensive. Thus, a digital photo frame can prove to be an excellent replacement for the mainstream photo frames where one does not have to manually change printed photographs but can do so by just pressing a button or running a slide show and it will be cost-effective. It will not be expensive. The main functions that most consumers want are image display and automatic updating of the image. This project has enlightened this demand thus increasing the probability that it will become more popular as people will start using it. Thus if one is expecting a quality display of images on their walls or tables at a very modest price, then this project is exactly what they are expecting.

II. REQUIREMENTS

A. Raspberry Pi 3 Model B
B. 7-inch display
C. Pen drive/SD card
D. Raspberry Pi OS
E. Power supply

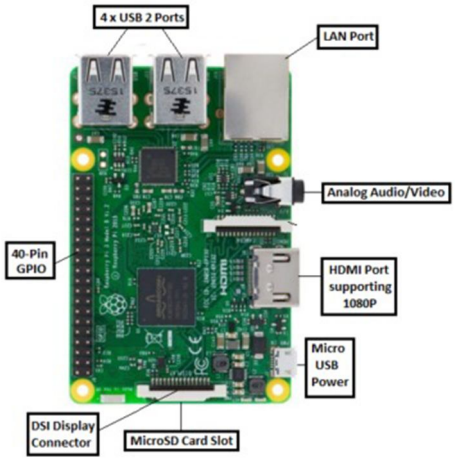
III. BLOCK DIAGRAM



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1) This project is using Raspberry Pi model B as the core processor where several input slots are available to display images like USB, SD card socket.
2) It has an output slot also which is connected to the display screen to showcase the images from the input. In Raspberry Pi 3, the user can connect to the full HD display.
3) Audio out jack is also available to connect it to the speakers.
4) A power socket is also provided in the micro USB port to provide the power of 5V to operate this processor.
5) It has a 64-bit Quad-core processor which makes it almost 10 times faster than the previous versions of Raspberry Pi.
6) Users can also run the official Raspbian operating system.
7) Apart from Raspberry Pi 1 & 2, Raspberry pi 3 supports a RAM of up to 1 GB.
8) Features like WiFi and Bluetooth are also been introduced in this version of the Raspberry Pi series making it more comfortable for the user to connect it to the destination folder containing all the pictures.

Image resolution - 1024X600
Pixels – 720p
Raspberry Pi 3
PCB Design-

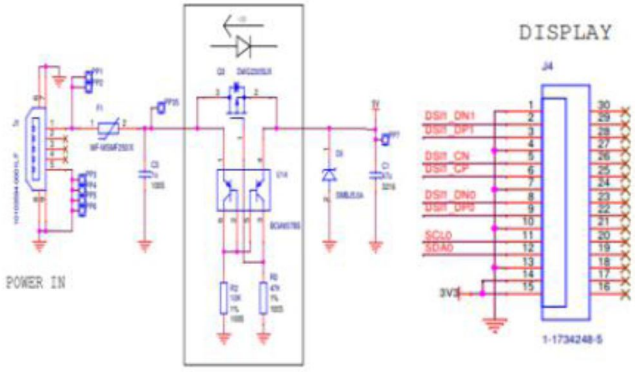


Raspberry Pi 3B

a) This project is using Raspberry Pi model B as the core processor where several input slots are available to display images like USB, SD card socket.
b) It has an output slot also which is connected to the display screen to showcase the images from the input. In Raspberry Pi 3, the user can connect to the full HD display.
c) Audio out jack is also available to connect it to the speakers.
d) A power socket is also provided in the micro USB port to provide the power of 5V to operate this processor.
e) It has a 64-bit Quad-core processor which makes it almost 10 times faster than the previous versions of Raspberry Pi.
f) Users can also run the official Raspbian operating system.
g) Apart from Raspberry Pi 1 & 2, Raspberry pi 3 supports a RAM of up to 1 GB.
h) Features like WiFi and Bluetooth are also been introduced in this version of the Raspberry Pi series making it more comfortable for the user to connect it to the destination folder containing all the pictures.

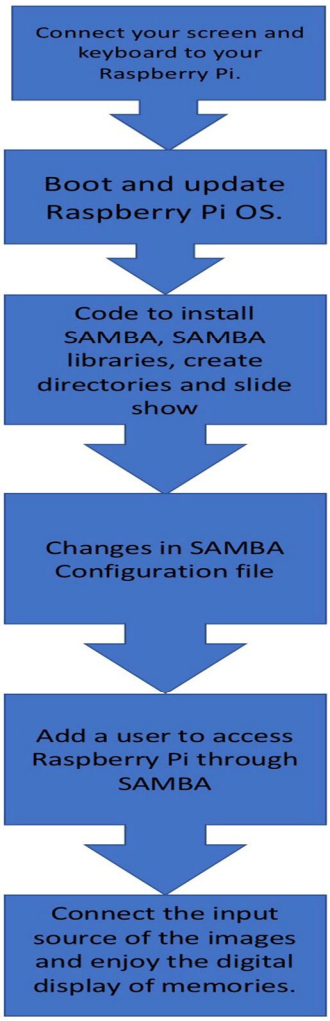
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IV. CIRCUIT DIAGRAM



V. SOFTWARE CODING

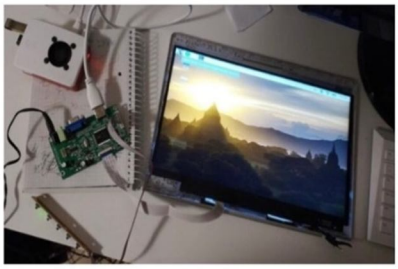
Download the Raspberry Pi Imager as per our operating system and install it. After installing follow the below-mentioned steps to extract the features.



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The code will install file-sharing software using SAMBA Configuration files and directories that will save the photos to display on the screen for some time duration. The code contains all the necessary information to implement the project idea. SAMBA Configuration file which contains all the libraries to showcase our photos will showcase them in a slide show mode. It also disables the screen to ever go black or it avoids blank mode.

1) Implementation





The image displays an HD display to present our photographs and a Raspberry Pi 3 model which is the backbone of our digital photo frame.

VI. CONCLUSION

A digital photo frame can be a great alternative to traditional table/wall photo frames because it allows you to update your photos instantly. It provides the memories a professional appearance and is a method that is designed for long-term use and is usually maintenance-free. The Raspberry Pi is probably the best CPU for this device's operation. There are numerous possibilities for displaying a picture as an input source. The major goal is to reduce costs, which may be accomplished by using a perfect and economical CPU and display.

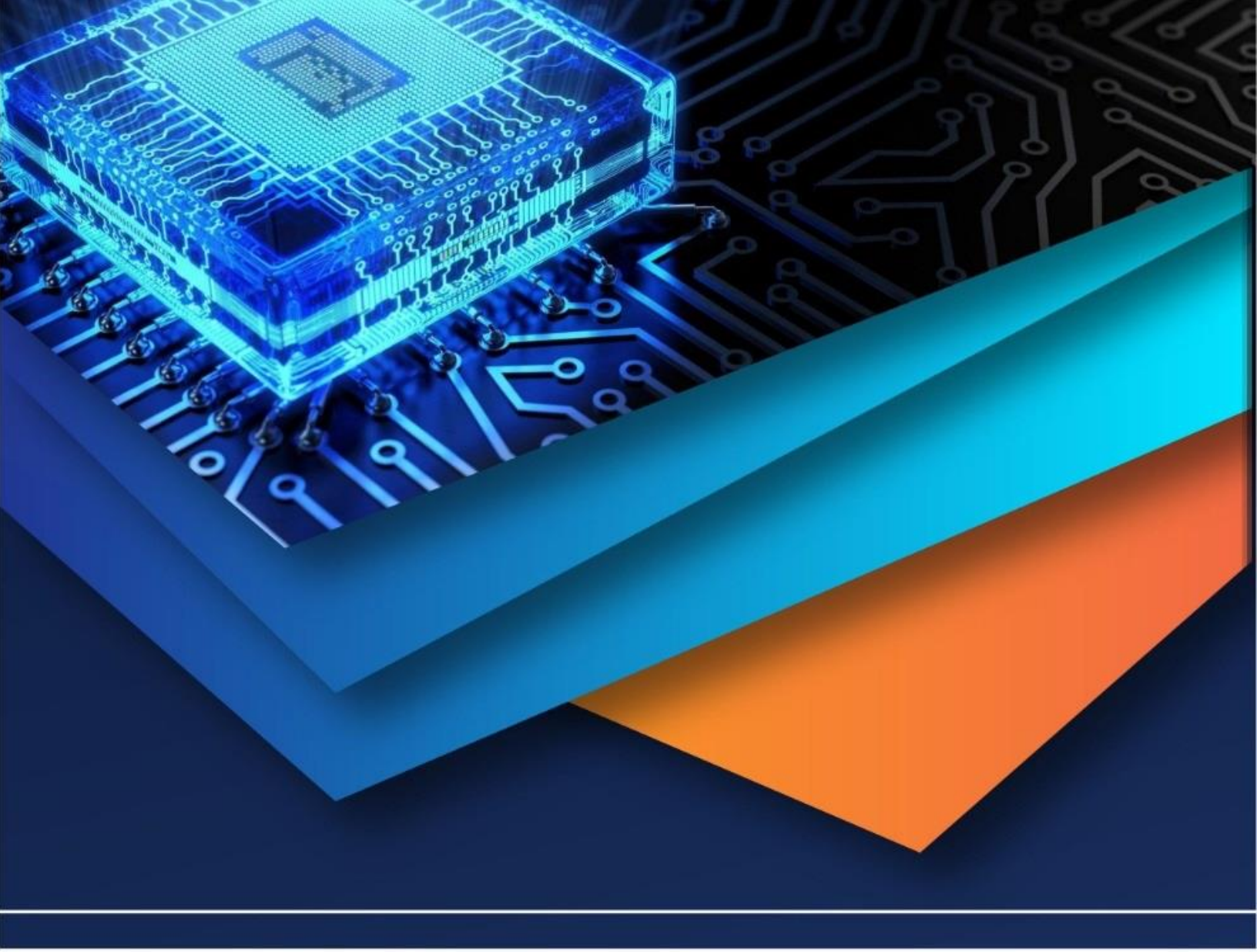
VII.FUTURE WORK

A. Contrast settings to enhance the quality of the image which will display the image in the best possible manner.
B. The Introduction of the brightness variation feature will also magnify the image.
C. Images of small size to be displayed in the frame perfectly as pixels will not be exploited.
D. Microcontroller acting camera port is also available in case of need to enable a camera.
E. Raspberry Pi is proficient enough to deliver to the best of its ability in the digital photo frame in the coming future.
F. This design is compact, is cost-effective, and can further also be improved to minimize the cost of the project.

REFERENCES

[1] A.B.Patil, Anshuman Kumar, DemitruS Cletus, Diptanshu Pathak, “Smart parking management system”, International Journal of Industrial Electronics and Electrical Engineering,2018, ISSN(p): 2347-6982, volume 6,issue 3,March2018
[2] Kaushal Puri, Devasheesh Tripathi, Yashvi Sudan, Prof. A.B Patil, ‘Feature Extraction Technique for Emotion Detection using Machine Learning, SSRG International Journal of Electronics and Communication Engineering (SSRG-IJECE) -2020/6’, ISSN: 2348 – 8549,Volume 7,Issue5, pp. 41-46,May2020
[3] Amruta Patil,Prof. R.M.Khaire,” Automatic Resistance detection and Abrasion testing of copper wire used in transformer or motor windings by ARM 7 processor”, International Journal of Emerging Trends & Technology in Computer Science (IJETTCS), Volume 3, Issue 2, March – April 2014, ISSN 2278-6856
[4] Jeong Kim, John Zimmerman(2006). Cherish: Smart Digital Photo Frames. Bloomsbury Publishing, London/New York, pp 151–158 Nam HY, Nitsche M (2014)
[5] Prashant Kumar Jha(2015). Digital Photo Frame With Audio Playback And Recording. Corpus ID: 73710762
[6] John Downs, Bery l Plimmer(2008). The Use of Digital Photo Frames as Situated Messaging Appliances. ICCMSN'08: Proceedings of the First international conference on Computer-Mediated Social Networking.
[7] Zhang, Li Jun; Zhang, Man (2014). Design and Implementation of Digital Photo Frame Based on STM32F103VET6. Advanced Materials Research, 926-930(), 448–451. doi:10.4028/www.scientific.net/AMR.926-930.448
[8] Liu, Y., Li, S., & Cao, L. (2009). Application of bluetooth communication in digital photo frame. 2009 ISECS International Colloquium on Computing, Communication, Control, and Management. doi:10.1109/cccm.2009.5270428
[9] https://components101.com/microcontrollers/raspberry-pi-3-pinout-features-datasheet
[10] https://www.firstpost.com/tech/news-analysis/make-your-own-digital-photo-frame-3571359.html https://electronics.howstuffworks.com/gadgets/home/digital-picture-frame.html

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