

Shopping Tool for Blind Person Using Raspberry Pi

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Abstract — In this generation printed text appears everywhere. So Because of this the blind People always take a help of other to buy some Product, Thus Blind People need some assistance to read Text Information of the Product. So we thought that to Develop some kind of Tool/Technology that Blind Person buy a Product by their own without taking any one's help and Blind Person feel confident about them self .The main Contributions are as follow:1) Image capturing-By using mini camera captured as an image and have to send to the Image Processing Platform.2) Text Recognition-by using a OCR the text will get filtered from the Image.3)Speech output-A filtered text will be passed into this System and Converted into an audio Output .This Paper Present Raspberry Pi based Tool which helps the Blind People in their daily life.

Index Terms—Blind people, Mini-Camera, Optical Character Recognition.

I. INTRODUCTION

In Worldwide there are over 314 million visually challenged people [1]. Recently time's development in computer vision, digital cameras and portable computers make it possible to help a single person by developing camera- based Products that combine computer vision technology with the other existing commercial products such optical character recognition (OCR) system. Reading is one of the basic necessity today's society.

II. PROPOSED WORK

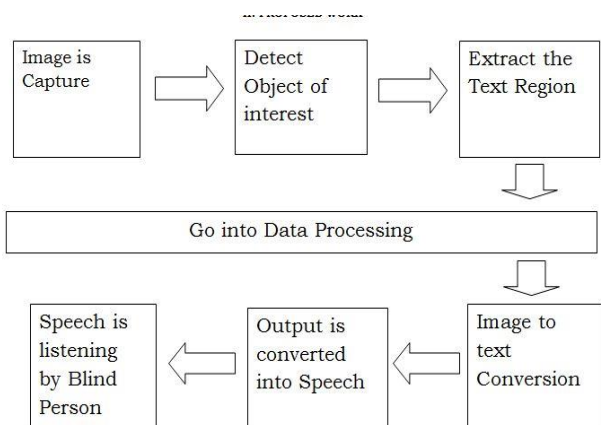


Figure: Block Diagram of Proposed System

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Everything around us is in the form of reports, receipts, bank statement, product packages, restaurant menus etc.[1] And while screen readers can help blind users and those with low vision to access document, there are few devices that can provide good access to common hand-held objects such as product label. The ability of people who are blind or have significant visual impairments to read printed labels and product Packages will enhance independent living and foster economic and social self-sufficiently so here we are going to propose a system that it useful to blind people. Today, there are already a few systems that have some promise for portable use, but they cannot handle product labeling [2]. For example, portable bar code readers designed to help blind people identify different products in an extensive product database can enable users who are blind to access information about these product through speech. But a big limitation is that it is very hard for blind users to find the position of the bar code and to correctly point the bar code reader at the bar code. Some reading-assistive system such as pen scanners might be employed in these and similar situations. Such systems integrate OCR software to offer the function of scanning and recognition of text and some have integrated voice output [3].

III. BLOCK DIAGRAM DESCRIPTION

Image Capture: Blind Person or User, First on the Camera and Capture the Image of Required Product, store it into memory of Raspberry Pi Model, Then Camera is off .and send it to next step .The image which is capture is shown in figure 2.

Extract the Text Region: Here Whatever Input image we get From Previous Step That image is Extract the text Region and Send it to Data Processing.

Data Processing: In this Data Processing the Input Image is converted into text Format by using OCREngine.

Image to text Conversion: We get the Output from Data Processing which is in the Form of text format. Output image to text shown in fig3.

Output is converted into Speech: In this Step By using Speech Recognition Function the text Format is converted into Audible Format..

Speech is listening by Blind Person: The User or Blind Person Listen Final Result by using Mini microphone or head phone. Converted audio output is listening to click on listen button as shown in fig3

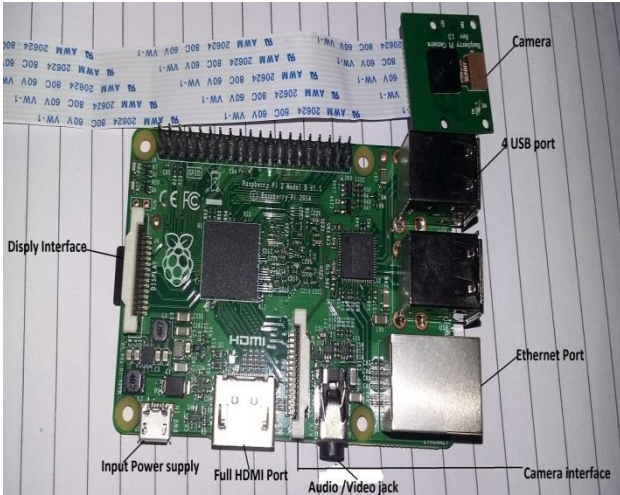
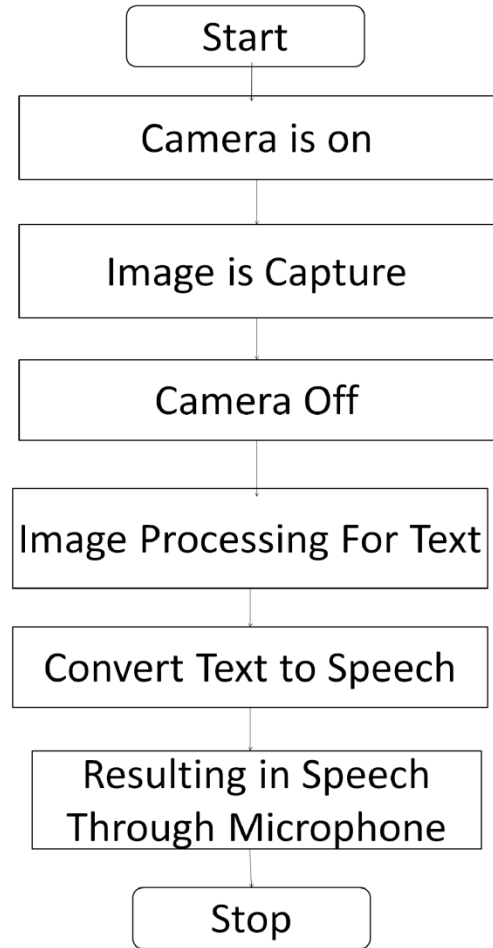


Fig1. Raspberry pi2 Model B

IV. Algorithm



V. FUNCTIONALITY



Fig2: Input

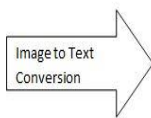


Fig3: Output

CONCLUSION AND FUTURE WORK

In this paper, to solve the common aiming problem for blind users, we have propose a camera-based product information reading framework to help blind persons read product information from hand-held objects in their daily lives .This Paper helps Blind Person to Identify the Product in Market Place, because we get the output in the form of audio.

Our future work will be to:-

1. Reduce the Image to Text conversion processing time.
2. For Complex background give proper and correct output.

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- [3.] "Camera Based Product Information Reading For Blind People Vol.4,Issue 3 Month:March2015"