

I'm not robot!

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# CONVERSION OF BRAILLE TO TEXT IN ENGLISH, HINDI AND TAMIL LANGUAGES

S.Padmavathi<sup>1</sup>, Manojna K.S.S<sup>2</sup>, Sphoorthy Reddy .S<sup>3</sup> and Meenakshy.D<sup>4</sup>

Amrita School of Engineering, Amrita Vishwa Vidyapeetham, Coimbatore, India

<sup>1</sup>a\_padnavathi@cb.amrita.edu, <sup>2</sup>manojna.kapala@gmail.com, <sup>3</sup>sphoorthy.surakanti@gmail.com, <sup>4</sup>meenakshymenon14@gmail.com,

## ABSTRACT

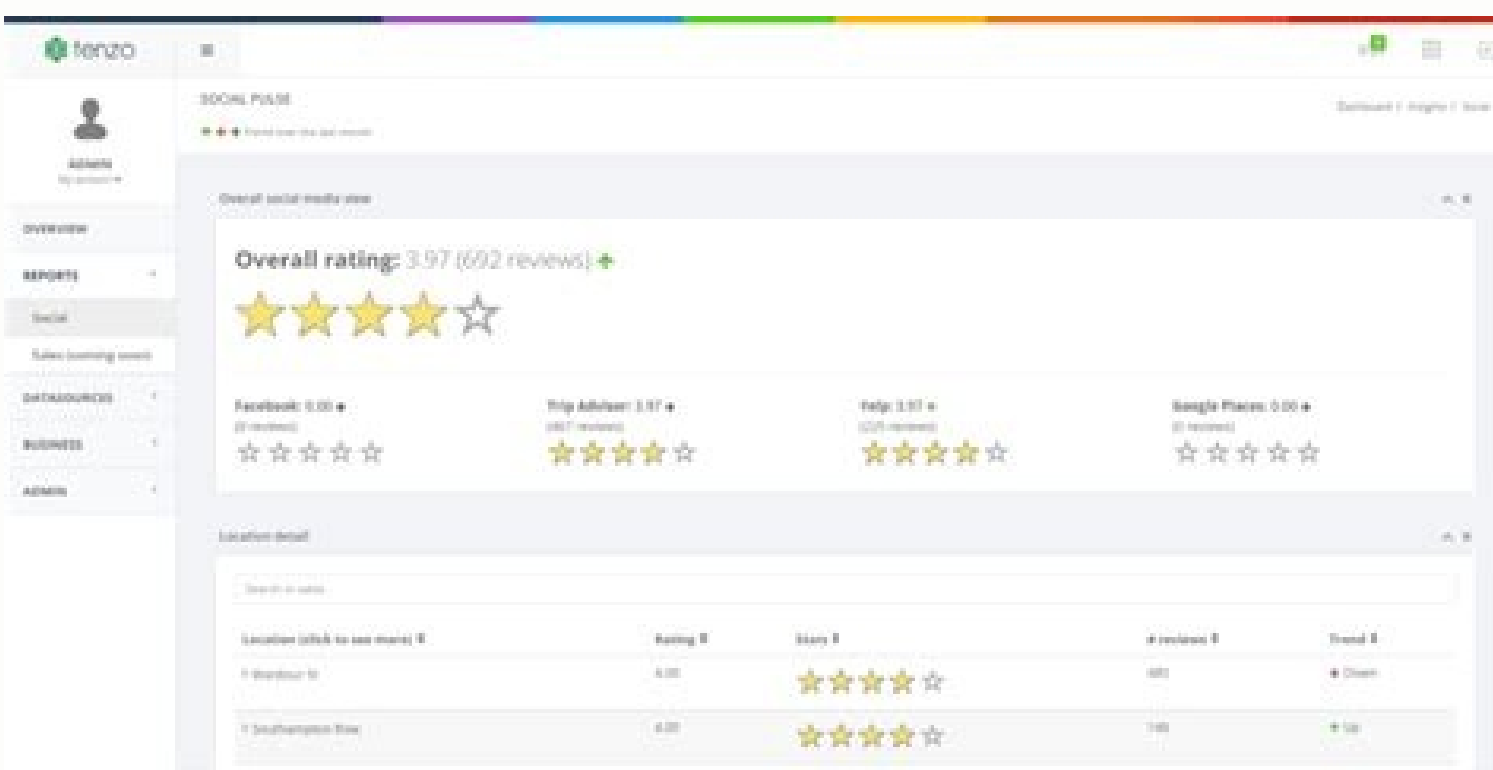
The Braille system has been used by the visually impaired for reading and writing. Due to limited availability of the Braille text books an efficient usage of the books becomes a necessity. This paper proposes a method to convert a scanned Braille document to text which can be read out to many through the computer. The Braille documents are pre processed to enhance the dots and reduce the noise. The Braille cells are segmented and the dots from each cell is extracted and converted in to a number sequence. These are mapped to the appropriate alphabets of the language. The converted text is spoken out through a speech synthesizer. The paper also provides a mechanism to type the Braille characters through the number pad of the keyboard. The typed Braille character is mapped to the alphabet and spoken out. The Braille cell has a standard representation but the mapping differs for each language. In this paper mapping of English, Hindi and Tamil are considered.

## KEYWORDS

Braille Conversion, Projection Profile, Tamil Braille conversion, Hindi Braille conversion, Image Segmentation

## 1. INTRODUCTION

Visually impaired people are an integral part of the society. However, their disabilities have made them to have less access to computers and Internet than the people with clear vision. Over time Braille system has been used by them for written communication. Braille is a system of writing that uses patterns of raised dots to inscribe characters on paper. This allows visually impaired people to read and write using touch instead of vision. It is the way for blind people to participate in a literate culture. First developed in the nineteenth century, Braille has become the pre-eminent tactile alphabet. Its characters are six-dot cells, two wide by three tall as shown in figure 1. Each dot may exist or may not exist giving two possibilities for each dot cell. Any of the six dots may or may not be raised; giving 64 possible characters. In English it includes 26 English alphabets, punctuations, numbers etc. Figure 2 shows the Braille representation of English alphabets. Braille representation for numerals is shown in figure 3.











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