

# Digital Audio Book

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## Abstract

Today's world basically depends on printed books as well as on eBook which is also known as electronic books. Both the books are read by using human beings and therefore it requires vision or eye to read it very well. What about all those who doesn't have vision or they don't have eyes to read the book and therefore the newest version of printed book and eBooks are comes in our mind. Here is the beginning of "digital audio book". The Digital Audio book overcomes the disadvantages of printed books as well as eBooks. Digital audio book is nothing but the printed book with speaking features, i.e. people who are visually impaired can acquire the knowledge of the book with the help of mp3 system available in the book itself.

**Keywords:** Digital Audio Book, Speaking Book, Talking Book, Audio Book.

## 1. Introduction

People who are blind or have limited vision need alternative versions of books and magazines. Typically, these formats are not available locally and must be specially ordered. They are not as convenient to use as a regular book or magazine because they are large and cumbersome to store and carry around. In addition, printed material causes difficulties for people with some cognitive disabilities, such as those with dyslexia (this group is estimated to be 5 to 17 percent of the population [1]). The visually impaired people make up a large section of the population [2], face many problems when it comes to accessing one of the most widespread means of knowledge - books. There are a very few books that exist in the

Braille format for the visually impaired to read. And with one page in a normal book taking up to three pages in a Braille book [3], they are very large and heavy. If this medium of access to knowledge and entertainment could be made less cumbersome, cheaper and simpler, a large section of the blind population would have an easier access to education, thus increasing their currently poor literacy rate [4]. The best way to tackle this would be to take the help of technology [5]. Owing to this, several companies came up with the solution of audio books, text-to-speech converters, Braille displays and printers. There are a very few audio books available in the market, and though text-to-speech converters can solve this problem, by converting any book into an audio format, the resulting audio can be extremely monotonous and devoid of expressions. The Braille displays are very expensive (a few thousand USD) [6] and have a PC dependency. 'TactoBook' [7] is one such example of a portable Braille-Book reader; however it requires a software on the PC to convert normal books into a Braille format. Braille printers also cannot work without a PC and as the paper used for printing is similar to that used in normal Braille books, these printed books are not at all portable.

Digital Audio books aims at overcoming the drawbacks of printed books as well as eBooks. This book have a button on it, whenever we press that button the text available on the current opened page speeches automatically which is clearly audible to human beings and can be heard by using headphones also due to which the other one nearby us not get disturbed.

## 2. Survey of Previous Work

In the past decades, many researchers have come up with the solutions for visually impaired and blind. Some of these are DAISY (Digital Accessible Information System), Braille-e-Book, Printed book to audio book converter for visually impaired, Towards the Digitalization of the Braille and Audio-Book Library of the ABA. •

### 2.1. DAISY (Digital Accessible Information System)

The Digital Accessible Information System (Daisy) standard describes an open data format for the representation of interactive books that are accessible to those with print-related disabilities. Daisy books may have both a textual and an audio component and allow for an active reading experience. To read a Daisy book, a reader needs a hardware or software playback system [1].

### 2.2. Braille-e-Book

An Innovative Idea for an Economical, User-Friendly and Portable eBook Reader for the Visually Impaired

This paper aims at presenting the prototype for Braille-e-Book, a portable and user-friendly device that converts the large ocean of e-knowledge into the Braille format for the blind to access easily. The Braille-e-Book makes use of USB flash drives that contain several books in text format. It has a speech recognition system using which the user can search for the file name or its author, which when selected will be displayed on a refreshable display. Furthermore, the Braille-e-Book is equipped with the audio notifications to enable the user to navigate through the entire process easily [8].

### 2.3. Printed book to audio book converter for visually impaired

Visually impaired people are dependent solely on Braille books & audio recordings provided by NGOs. Owing to many constraints in above two approaches blind people can't have book of their choice. The presented work will provide them an opportunity to have an audio-book of their choice in English or Marathi language of any printed book having English, Marathi or Braille script. Printed text from textbook having English, Marathi or Braille script will be taken as input in the form of an image which will be converted into plain editable text with the help of Optical Character Recognition (OCR). This plain text will be then fed to Text to Speech (TTS) converter which will generate the audio output file in English or Marathi language corresponding to the input text image script.

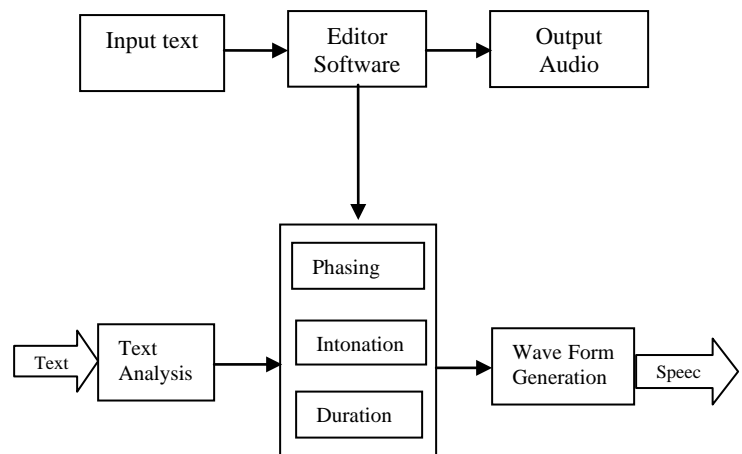
Printed book to audio book converter has been successfully implemented and satisfactory results were obtained[9].

### 2.4. Towards the Digitalization of the Braille and Audio-Book Library of the ABA

Visually handicapped persons have special needs for reading books. The Association for the well-being of the Blind in Geneva maintains a large Braille and cassette audio book library with numerous books for the use of its members. The multimedia project set up with the University of Geneva aims in converting the tangible printed Braille and audio books in electronic form, so that they can distributed over the Internet. The issues raised in this project range from the choice of hardware and electronic format, to copyright considerations and user authorizations[10].

## 3. Proposed Work

### 3.1. Audio Generation Procedure



A text-to-speech system is composed of two parts:

1. Front-end,
2. Back-end.

#### 3.1.1. Front-end

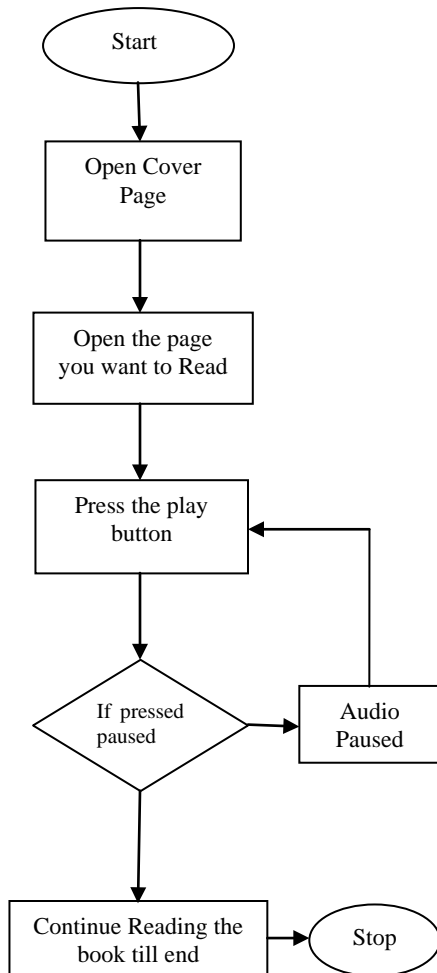
The front-end has two major tasks. First, it converts raw text containing symbols like numbers and abbreviations into the equivalent of written-out words. This process is often called text normalization, pre-processing, or tokenization. The front-end then assigns phonetic

transcriptions to each word, and divides and marks the text into prosodic units, like phrases, clauses, and sentences. The process of assigning phonetic transcriptions to words is called text-to-phoneme or grapheme-to-phoneme conversion. Phonetic transcriptions and prosody information together make up the symbolic linguistic representation that is output by the front-end.

### 3.1.2. Back-end

The back-end—often referred to as the synthesizer—then converts the symbolic linguistic representation into sound. In certain systems, this part includes the computation of the target prosody (pitch contour, phoneme durations), which is then imposed on the output speech.

### 3.2. Flow Chart For Digital Audio Book



### Procedure for digital audio book

Firstly start the book, open the cover page or say front page of the book and then open the page you want to read. After that press play button and then check whether the user has pressed the paused button or not . If yes then audio paused , again to go play button and If no then continue reading the book till end .

Steps are as follows:-

Step 1:- Start the book.

Step 2:-Open the cover page of book.

Step 3:-Open the page you want to Read.

Step 4:-Press the play button.

Step 5:-Check whether the user has pressed the paused button or not .

a) If yes then audio paused , again to go play button .

b) If no then go to step 6.

Step 6:-Continue reading the book till end .

Step 7:-Stop.

### 4. Benefits

It is specially designed for those who doesn't have vision or they don't have eyes to read the book.

It provides a luxurious life for students that they just connect headphone with book and closing their eyes and listen the content printed on it without disturbing anybody else.

The main aim of our project is to provide a new technology to the world that speaks itself or read a book itself.

### 5. Conclusions

The DIGITAL AUDIO BOOK will be a boost to all the under privileged people who are unable to read, but are sufficient to understand a particular language or their native language. Thus, DIGITAL AUDIO BOOK can be considered as a source of knowledge and guidance to these type of people.

The digital audio book will actually speak all the text written in book the audio of text would be generated in very short amount of time ,it will be beneficial for blind people as well as people with vision. Example during festivals students get disturbed due to noise they can

simply attach headphone on the book and can listen anytime.

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