

AUDIO BOOKS USING PYTHON

**A mini project report submitted in partial fulfillment of
the requirement for the award of the degree of**

Bachelor of Technology

In

ELECTRONICS AND COMMUNICATION ENGINEERING

By

DUNGU SESHAGIRI

19L31A04Q1

MALLA SRINIVAS

19L31A04O4

ADIGARLA LAVANYA

19L31A04M6

NAMBURI VARAPRASAD

19L31A04N8

Under the Guidance of

Mrs.VIJAYASREE

ASSISTANT PROFESSOR

**DEPARTMENT OF ELECTRONICS AND COMMUNICATION
ENGINEERING**



**Department of Electronics and Communication Engineering
Vignan's Institute of Information Technology (A)
Visakhapatnam-530 049
INDIA**

2019-2023

**Department of Electronics and Communication Engineering
Vignan's Institute of Information Technology (A)**



Certificate

This is to certify that the project entitled **“AUDIO BOOKS USING PYTHON”** submitted by **DUNGU SESHAGIRI(19L31A04Q1), MALLA SRINIVAS(19L31A04O4),ADIGARLA LAVANYA (19L31A04M6), NAMBURI VARAPRASAD(19L31A04N8)** in fulfillment of the requirement for the award of B.Tech Degree in Electronics and Communication Engineering, is a Bonafide project work carried out by them under the guidance and supervision in the Department of Electronics and Communication Engineering, Vignan's Institute of Information Technology, Visakhapatnam. This work has not been submitted to any university for award of any degree.

Project Guide

Mrs.VijayaSree

Assistant Professor
Dept. of Electronics &
Communication Engineering
Vignan's Institute of Information
Technology (A)
Visakhapatnam
India

Head of the Department

Dr. K.Murali Krishna

Professor
Dept. of Electronics &
Communication Engineering
Vignan's Institute of Information
Technology (A)
Visakhapatnam
India

DECLARATION

We hereby declare that the mini project entitled “**AUDIO BOOKS USING PYTHON**” has been written by us and has not been submitted either in part or whole for the award of any degree, diploma or any other similar title to this or any other university.

Date:

<i>DUNGU SESHAGIRI</i>	19L31A04Q1
MALLA SRINIVAS	19L31A04O4
ADIGARLA LAVANYA	19L31A04M6
NAMBURI VARAPRASAD	19L31A04N8

Acknowledgements

We would like to express our gratitude to **Mrs.VijayaSree**, Assistant Professor, Department of Electronics and Communication Engineering, for his valuable guidance, advice and supporting us in successfully doing this project.

We express our sincere thanks to **Dr. L. Rathaiah**, Chairman, Vignan group of institutions, for his co-operation and providing facilities for doing this project.

We express our sincere thanks to **Dr.V.Madhusudhan Rao**, Rector, **Mr.B.Srikanth**, Executive Director, Vignan Vizag Group, Visakhapatnam for their co-operation and encouragement for completion of this project.

We express our sincere thanks to **Dr. B.Arundati**, Principal, Vignan's Institute of Information Technology, Visakhapatnam for her co-operation and encouragement on this project.

We express our sincere thanks to **Dr. K. Murali Krishna**, Head of the Department, Electronics and Communication Engineering, Vignan's Institute of Information Technology, Visakhapatnam for his Valuable suggestions and encouragement for completion of this project.

Lastly, we extend our gratitude to all our Teaching and Non-Teaching staff and all my friends, who directly or indirectly helped us in this Endeavour.
Regards

DUNGU SESHAGIRI
MALLA SRINIVAS
ADIGARLA LAVANYA
NAMBURI VARAPRASAD

19L31A04Q1
19L31A04O4
19L31A04M6
19L31A04N8

ABSTRACT

An audiobook is a recording or voiceover of a book or other work read aloud. You can listen to audiobooks on any smartphone, tablet, computer, home speaker system, or in-car entertainment system. In this article, I will walk you through how to create an audiobook with Python.

You don't need to buy a subscription for an audiobook if you have a pdf of the book. At the end of this article, you will learn how to create an audiobook with the python programming language in a few lines of code. Python has a large collection of libraries due to the very active community which serves various purposes. Here we need to use two libraries pyttsx3 and PyPDF2 to create an audiobook with Python.

Both the above libraries can be easily installed by using the pip command; `pip install PyPDF2`, `pip install pyttsx3`.

creating an Audiobook that takes PDF file path as input and reads the text in the PDF file to the user via audio. Python programming language was used to create this project.

CONTENTS

S.No	CONTENT NAME	PAGE NO.
	CHAPTER 1 – INTRODUCTION	
1.1	INTRODUCTION	8
1.2	APPLICATIONS	9
	CHAPTER 2 –SOFTWARE USED IN AUDIO BOOKS USING PYTHON	
2.1	COMPONENTS USED	10
2.1.1	Pytsx3	11
2.1.2	PyPDF2	11
2.1.3	PYCHARM	12
	CHAPTER 3 –IMPLEMENTATION STEPS	
3.1	IMPLEMENTATION STEPS	13-16
3.2	APPROACH	17
3.3	CODE USED	18
	CHAPTER 4 – BENEFITS AND APPLICATIONS	
4.1	BENIFITS	18
4.2	APPLICATIONS	19
	CONCLUSION	20
	REFERENCES	21

CHAPTER 1

INTRODUCTION

1.1 INTRODUCTION

Reading stories or essays or any text can be arduous, however an audio reading of the text is convenient and doesn't require as much concentration as reading requires. In this project, I implemented a simple PDF to audio converter. This code scans page(s) of PDF and reads it using audio, to the user. While this project is good for simple text reading, it does not perform good if a scientific paper with equations is given to it because equations are not supported to be read in Pytesseract OCR library which I used to convert image to text.

To build our audiobook converter, we will use the following Python libraries: Pyttsx3, PyPDF3

1.2 APPLICATIONS

Audiobooks have traditionally been used with second-language learners, learning-disabled students, and struggling readers or nonreaders. In many cases, audiobooks have proven successful in helping these students to access literature and enjoy books.

CHAPTER 2

SOFTWARE USED IN AUDIO BOOKS USING PYTHON

Software used in Audio Books using python

2.1 components

- Laptop
- Python interpreter(pycharm)
- Python packages(pytsx3,pyPDF2)

2.1.2 What is PyPDF2?

It is a pure-python library built as a PDF toolkit. It was built to help with the following:

- Extracting document information (title, author, etc.).
- Splitting documents page by page.
- Merging documents page by page.
- Cropping pages.
- Merging multiple pages into a single page.
- Encrypting and decrypting PDF files.
- It is important to note that since this library is built from a file page perspective, it has problems manipulating pdf files that are not correctly page numbered.

APPLICATION

It can be used as a tool for websites that manage or manipulate PDFs

2.1.3 What is Pyttsx3?

From the Pyttsx3's official documentation, Python Text to Speech version 3 (pyttsx3) is a text-to-speech conversion library in Python. Unlike alternative libraries, it works offline and is compatible with both Python 2 and 3.

Application

It can be applied in desktop and mobile applications and websites to convert text to speech for the visually impaired.

It can be used to create an audiobook

2.1.4 What is PyCharm?

PyCharm is a hybrid platform developed by JetBrains as an IDE for Python. It is commonly used for Python application development.

It supports two versions: v2.x and v3.x.

We can run PyCharm on Windows, Linux, or Mac OS. Additionally, it contains modules and packages that help programmers develop software using Python in less time and with minimal effort. Further, it can also be customized according to the requirements of developers

- It helps us write high-quality codes!
- It consists of color schemes for keywords, classes, and functions. This helps increase the readability and understanding of the code.
- It helps identify errors easily.
- It provides the autocomplete feature and instructions for the completion of the code.
- It provides intelligent code editor

CHAPTER 3

IMPLEMENTATION STEPS

3.1 Implementation steps

Step 1

Open PyCharm and create a project titled Audiobook. Then, open the terminal and type the below-listed commands to install the respective libraries:

- **Install pyttsx3 module,using**

pip install pyttsx3

- **Install pyPDF2 module,using**

pip install PyPDF2

Pyttsx3 module

- It is a python library for text to speech. It has many functions which will help the machine to communicate with us. It will help the machine to speak to us.
- It is one of the popular modules in python which intakes text as an input and results in speech/audio as an output. Even this pyttsx3 module works offline, proving it a user-friendly module over other modules. It is compatible with Python version 2 as well as Python version 3.

PyPDF2 module

- It is a pure-python library built as a PDF toolkit. It was built to help with the following:
 - Extracting document information (title, author, etc.).
 - Splitting documents page by page.
 - Merging documents page by page.

- Cropping pages.
- Merging multiple pages into a single page.
- Encrypting and decrypting PDF files.
- It is important to note that since this library is built from a file page perspective, it has problems manipulating pdf files that are not correctly page numbered.

Step 2:

Importing modules

The above modules must be invoked to get their functionalities used in the program. Use an import statement to import a module, like

```
import PyPDF2
```

```
import pyttsx3
```

step 3:

Reading a PDF file

A PDF file must be opened first to manipulate its contents. A PDF file can be read/write, can embed with an attachment, add a bookmark within a pdf file and so on. Various operations can be performed on a pdf file using Python. We can retrieve some useful information from a PDF file like the number of pages, the layout of the page that is being used, one can retrieve a page with the help of a page number and so on. All these operations are carried over by the PyPDF2 module in Python.

To read a PDF file, use a command as,

```
variable_name = PyPDF2.PdfFileReader(open('file_name','rb'))
```

where variable_name → the name of the variable

PdfFileReader() → class under PyPDF2 module.

open() → function used for opening a file.

file_name → the name of the file that needs to be opened.

rb → mode of a file (opens file in binary format to read)

step 4:

Initializing speaker

Speakers must be initialized next so that we can convert text to audio format using the pyttsx3 module. Use command,

speaker=pyttsx3.init()

to initialize speaker.

Step 5:

Extracting text

The first and foremost thing is getting a page with the help of its page number. The page number of the required page is passed as an argument to the getPage() method.

The command can be written as

text=readpdf.getPage(pagename).extractText()

where getPage(pagename) → retrieve a page with the help of page number

extractText() → extract text from page specified.

Step 6:

Text to Audio

Now it's time to pass all those extracted texts as an argument to the method named say() in the pyttsx3 module, which helps in converting text to an audio format. The command is as follows,

speaker.say(text)

where text extracted in the previous command is passed as an argument into the say() method.

Step 7:

Saving voice to a file

The voice generated by the above command can be saved into an mp3 file. The file will be saved in the exact location where our code has been saved. Hence saving the audio file will help users to access it in future days.

The command to save voice to a file is as follows,

speaker.save_to_file(text,'filename.mp3')

where speaker → the variable that is initialized already.

save_to_file(text, 'filename.mp3') → method used for saving an audio file.

3.1.2 APPROACH

- Import the PyPDF2 and pyttsx3 modules.
- Open the PDF file.
- Use PdfFileReader() to read the PDF. We just have to give the path of the PDF as the argument.
- Use the getPage() method to select the page to be read.
- Extract the text from the page using extractText().
- Instantiate a pyttsx3 object.
- Use the say() and runwait() methods to speak out the text.

3.1.3 CODE USED

```
import pyttsx3
import pyPDF2
book = open('oop.pdf', 'rb')
pdfReader = pyPDF2.pdfFileReader(book)
pages = pdfReader.numPages
print(pages)
speaker = pyttsx3.init()
```



```
for num in range(7,pages):  
    page = pdfReader.getPage(7)  
    text = page.extractText()  
    speaker.say(text)  
speaker.runAndWait()
```

CHAPTER 4

BENEFITS & APPLICATIONS

4.1 BENEFITS

- Increasing reading accuracy by 52%
- Increasing reading speed, expanding vocabulary and improving fluency
- Teaching pronunciation
- Improving comprehension by 76%
- Increasing test scores by 21% when engaged in multi-modal learning.

4.2 APPLICATIONS

Audiobooks have traditionally been used with second-language learners, learning-disabled students, and struggling readers or nonreaders. In many cases, audiobooks have proven successful in helping these students to access literature and enjoy books.

CONCLUSION

It was seen that this code performs really well in reading straightforward PDF text files. However, if complex mathematical equations are involved in the text, then this software cannot properly read the equations as a human would. Hence, the code is good for simple text but not for scientific papers as it will fumble reading the complex equations. I hope readers will find this project helpful.

REFERENCES

The project is referred from the website:

Youtube link : https://youtu.be/kyZ_5cvrXJI

Website 1: <https://www.section.io/engineering-education/creating-an-audiobook-with-pyttsx3-pypdf3-and-tkinter/>

2: <https://medium.com/analytics-vidhya/easy-way-to-build-an-audiobook-using-python-20fc7d6fb1af>

