**1. INTRODUCTION**

**1.1 Introduction to the system**

**1.1.1 Project Title**

Digital File Manipulation.

**1.1.2 Category**

Windows Application.

**1.1.3 Overview**

The application provides various manipulation operations on different types of digital files like Images, Audio, Video, Text, Doc, Pdf, xls, csv.

**1.2 Background**

**1.2.1 Introduction of the Company**

Not Applicable.

**1.2.2 Brief note on Existing System**

In existing system, when we cut text from image the file is saved as image itself because we are cropping the image. To highlight the text in image or pdf , we have to use external tools. Image color recognition is difficult in existing system and a lot of time is consumed by existing system. Symbol and Mathematical equations are difficult recognize. User has to use different existing software to achieve the tasks.

* 1. **Objective of the System**
* Objectives are the pre-determined goals or outcomes of the system process.
* The main objective of the system is to develop an application which can be used to manipulate various digital files like image, video, audio, text, doc, pdf, xls and csv. And to provide one stop solution for different types of digital file manipulations.
  1. **Scope of the System**
* Scope is the limitation that a process faces from the beginning to the end.
* Image recognition, symbol and mathematical equation recognition is difficult.
* Clarity of image is must for text recognition.
* Clarity Audio and Video is must for extracting text and to extract audio from video.
  1. **Structure of the System**

**1.5.1 Text Manipulation in an Image**

**1.5.1.1 Extracting Text from Images**

The user provides a clear image as input and the application retrieves the text in that image and saves it in a text file.

**1.5.1.2 Extracting Text from Region of Interest**

The user provides a clear image as input and selects a region in that image and the application will retrieve the text in that image.

**1.5.1.3 Highlighting Text**

The user provides a clear image and a word or a sentence as input, and the application highlights that word/sentence in the image ,else gives a prompt message telling ‘There is no such word or sentence’.

**1.5.2 Spread Sheet Manipulation**

**1.5.2.1 Excel to Text**

The user provides an Excel file as input and the application converts it into a text file and gives it as output.

**1.5.2.2 Csv to Text**

The user provides a Csv file as input and the application converts it into a text file and gives it as output.

**1.5.2.3 Excel to Csv**

The user provides an Excel file and the excel sheet name as inputs and the application converts it into a Csv file and gives it as output.

**1.5.2.4 Search a Column**

The user provides an Excel file required column name as input and the application converts the specified column data into a text file and gives it as output.

**1.5.3 Video-Audio Manipulation**

**1.5.3.1 Extracting Text from Video**

The user provides a video as input and the application retrieves the words spoken in that video and writes it on a text file, which is the output.

**1.5.3.2 Extracting Audio from Video**

The user provides a video as input and the application retrieves the audio in that video and provides it as output.

**1.5.2.3 Extracting Text from Audio**

The user provides an audio as input and the application retrieves the words spoken in that audio and writes it on a text file, which is the output.

**1.5.4 File Manipulation**

**1.5.4.1 Pdf to Text**

The user provides a Pdf file as input and the application converts it into a text file and gives it as output.

**1.5.4.2 Doc to Text**

The user provides a Doc file as input and the application converts it into a text file and gives it as output.

**1.5.4.3 Text to Pdf**

The user provides a Text file as input and the application converts it into a Pdf file and gives it as output.

**1.5.4.4 Text to Doc**

The user provides a Text file as input and the application converts it into a Doc file and gives it as output.

* 1. **System Architecture**

**USERS**

**GUI**

**User Level**

Commands

Console

Tools

Buttons

Menu

**Digital File Manipulation Application**

File Manipulation

Text Manipulation

**Application**

Video-Audio Manipulation

Spread Sheet Manipulation

**Level**

Mass Storage Device

Image Processing Tools/Packages/Functions/Procedures

**System**

**Operating System**

**Level**

**Processing Hardware**

**1.7 End User**

The End-User can be anyone who requires the functionalities provided by this system. They can give image as an input and perform operations like extracting text, highlighting text. The user can give video and audio as input and perform operations like extracting audio from video, extracting text from video and extract text from audio. They can also input a doc/pdf/text file and convert them to text/doc/pdf.

**1.8 Software/Hardware need for the development**

**Software:**

Python, Pytessaract, ffmpeg, Windows OS.

**Hardware:**

The system must have more than 2GB of RAM.

**1.9 Software/Hardware need for the implementation**

**Software:**

Pytessaract, ffmpeg, Windows OS.

**Hardware:**

The system must have more than 2GB of RAM, and the screen resolution must be more than 1600X900 pixels.