

# WHATSAPP INVOICE AUTOMATION

*A Mini-project Report Submitted in the  
Partial Fulfillment of the Requirements  
for the Award of the Degree of*

**BACHELOR OF TECHNOLOGY**

**IN**

**COMPUTER SCIENCE AND ENGINEERING**

Submitted by

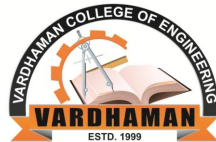
K. Sai Charan 18881A0587

P. Saiteja 18881A05A8

**SUPERVISOR**

Dr. S. Venu gopal

Associate Professor

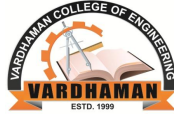


Department of Computer Science and Engineering

**VARDHAMAN COLLEGE OF ENGINEERING, HYDERABAD**

**An Autonomous Institute, Affiliated to JNTUH**

June, 2021



# **VARDHAMAN COLLEGE OF ENGINEERING, HYDERABAD**

**An Autonomous Institute, Affiliated to JNTUH**

**Department of Computer Science and Engineering**

## **CERTIFICATE**

This is to certify that the mini-project titled **WHATSAPP INVOICE AUTOMATION** is carried out by

**K. Sai Charan    18881A0587**

**P. Saiteja        18881A05A8**

in partial fulfillment of the requirements for the award of the degree of **Bachelor of Technology in Computer Science and Engineering** during the year 2020-21.

**Signature of the Supervisor**

**Dr. S. Venu gopal**

**Associate Professor**

**Signature of the HOD**

**Dr. K. Rajinikanth**

**Professor and Head, CSE**

# Acknowledgement

The satisfaction that accompanies the successful completion of the task would be put incomplete without the mention of the people who made it possible, whose constant guidance and encouragement crown all the efforts with success.

We wish to express our deep sense of gratitude to **Dr. S. Venu gopal**, Associate Professor and Project Supervisor, Department of Computer Science and Engineering, Vardhaman College of Engineering, for his able guidance and useful suggestions, which helped us in completing the mini-project in time.

We are particularly thankful to **Dr. K. Rajinikanth**, the Head of the Department, Department of Computer Science and Engineering, his guidance, intense support and encouragement, which helped us to mould our mini-project into a successful one.

We show gratitude to our honorable Principal **Dr. J.V.R. Ravindra**, for providing all facilities and support.

We avail this opportunity to express our deep sense of gratitude and heartful thanks to **Dr. Teegala Vijender Reddy**, Chairman and **Sri Teegala Upender Reddy**, Secretary of VCE, for providing a congenial atmosphere to complete this mini-project successfully.

We also thank all the staff members of Electronics and Communication Engineering department for their valuable support and generous advice. Finally thanks to all our friends and family members for their continuous support and enthusiastic help.

**K. Sai Charan**

**P. Saiteja**

# Abstract

In the current situation of Corona Virus pandemic contactless i.e., digital payments allow people to acquire goods and services while in quarantine or social distancing. During this coronavirus crisis, contactless digital payments are keeping the economies running and helping people to reduce exposure to the virus.

The prime intent of this project is to design a Software Application which can generate the contactless digital bills and payment slips to the customers. Thus reducing the exposure to harmful viruses and protect people from being infected. This app creates a basic and direct interface between sellers and buyers to easily generate and send bills and payment slips as simple text messages to contact number through WhatsApp. Hence, this application can create great differences in present prevailing situations. This Project shows their impact over the small firms who are not capable of affording huge money over the technology usage in this type of pandemic situation.

***Keywords:*** Invoice Data Extraction, Text Automation, Pdf to Text Conversion

# Table of Contents

Title	Page No.
Acknowledgement . . . . .	i
Abstract . . . . .	ii
List of Figures . . . . .	iv
CHAPTER 1 Introduction . . . . .	1
1.1 Introduction . . . . .	1
1.2 Problem Definition . . . . .	2
CHAPTER 2 Literature Survey . . . . .	3
2.1 Existing System . . . . .	4
2.2 Disadvantages of Existing System . . . . .	5
CHAPTER 3 Proposed Design . . . . .	6
3.1 Proposed System . . . . .	6
3.2 Data Extraction using PyPDF2 . . . . .	6
3.3 Regex Implementation . . . . .	7
3.4 Pyautogui . . . . .	8
CHAPTER 4 Design And Analysis . . . . .	9
4.1 User Requirements . . . . .	9
4.1.1 Software Requirements . . . . .	9
4.1.2 Hardware Requirements . . . . .	9
4.2 Architecture of the Project . . . . .	10
4.3 Data Flow Diagram . . . . .	10
4.4 TestCases . . . . .	11
4.5 Advantages: . . . . .	12
CHAPTER 5 Results . . . . .	13
5.1 Inputs And Outputs . . . . .	13
CHAPTER 6 CONCLUSION . . . . .	16
CHAPTER 7 Future Scope . . . . .	17
CHAPTER 8 References . . . . .	18

## List of Figures

1.1	.....	1
1.2	.....	2
2.1	.....	4
3.1	.....	6
3.2	.....	7
4.1	Architectural Diagram .....	10
4.2	DataFlow Diagram .....	11
4.3	TestCases .....	12
5.1	Accessing the GUI .....	13
5.2	Selecting the invoices to be sent to the customers .....	14
5.3	Displaying the selected Customers .....	14
5.4	Automating text message through whatsapp .....	15
5.5	Automating text message through whatsapp .....	15

# CHAPTER 1

## Introduction

### 1.1 Introduction

As Everything in our reality has two inverse qualities engaged with it. Also, There are both huge and little firms exists. Huge Firms like Amazon, Max can ready to deal with the circumstances and can bear over the mechanical improvement in their business while little firms can't put resources into advancement over the innovation in their strategic policies. There are numerous things present in business which can be made simpler with the assistance of the rising innovation.

At Present occasions, Covid-19 had a tremendous effect over market. Enormous firms can ready to utilize the innovation and ready to get over this pandemic circumstance by meeting the principles, security just as benefits, yet little firms not ready to make benefits because of dread of this Covid infection, they can't maintain their business and confronting circumstances and dropping their own business, to keep away from these circumstances we made a stride which assists the little firms with disposing of some their awful circumstances.



**Figure 1.1**

We took center over how billing is finished by the little firms. Little firms keeps up with the solicitations with the connected nearby programming's which can be reasonable by them, yet advancement in innovation and assets

which are needed at the current circumstance are not made accessible to them. Social Distance is one of the critical job to get freed from this Coronavirus circumstance ,this nearby programming's can't give online receipt which are made accessible by huge firms. Online Invoices make a lot of help to both the client's just as the firm holders both in information reinforcement and furthermore in having security, which should be possible with the assistance of information extraction and Automation of text invoices where the numerous clients includes at customary premise and numerous organizations have their own receipt arranges according to the firm holder prerequisites we remove information from their solicitations and mechanize messages to the clients so that even a helpless person can ready to comprehend the receipt.

## 1.2 Problem Definition

The project “Whatsapp Invoice Automation” helps small firms to automate invoices to their customers to meet their market expectations in this pandemic situations which can be able to do their work by following safety measures.



Figure 1.2



## CHAPTER 2

### Literature Survey

Processing systems have become computerized for great ease and accuracy . A billing system is a combination of hardware and software that receives purchase details and service usage information, groups this for specific accounts or customers produces invoices, creates reports for employee or an administrator.

The word billing can refer to both the total amount of goods and the act of counting them. Medical billing system involves a healthcare provider submitting following up on, claims with health insurance in order to receive payment for services. It discuss the purpose of medical record documentation and various forms and

the patients accounts, order entry, charge capture, billing and accounts . Billing plus is the admin plus module to manage student billing from invoicing and online bill payments to tuition plans, financial reporting and record keeping. Designed for use by private and public schools. Telecommunication billing software is the group of processes of communications service providers that are responsible to collect consumption data, calculate charging and billing information, produce bills to customers, process their payments and manage collection

In accounting, purchases is the amount of goods a shop bought throughout a periodic time. It also refers to information as to the kind, quality, quantity, and cost of goods bought that should be maintained. They are added to inventory. Here purchasing can be seen in 2 forms one is by the owner who buy goods and store them another one is by the customer who wants to take particular items from the shop. Inventory is the collection of unsold products waiting to be sold. It is listed as a current asset on an enterprises balance sheet. Inventory is a key component of calculating cost of goods sold (COGS) and is a key driver of profit, total assets, and tax liability. Many financial ratios, such as inventory turnover, incorporate inventory values to measure

certain aspects of the health of a business. Once a customer purchases the items corresponding value is deducted from the inventory and amount of tax along with the GST is calculated. Further sales are done, bills are generated and proper report is maintained.

## 2.1 Existing System

At present occasions, Large firms keeps up with their own product for charging and innovation utilization in their business practice includes computerization i.e, which implies they send the connection of the receipt or receipt to the clients whatsapp account. However, it can't be executed by little firms because of they are completely reliant upon nearby programming's the place where it is absurd to expect to be update the innovation in their product's, in case it is fundamental it costs high. Little firms are accessible with the

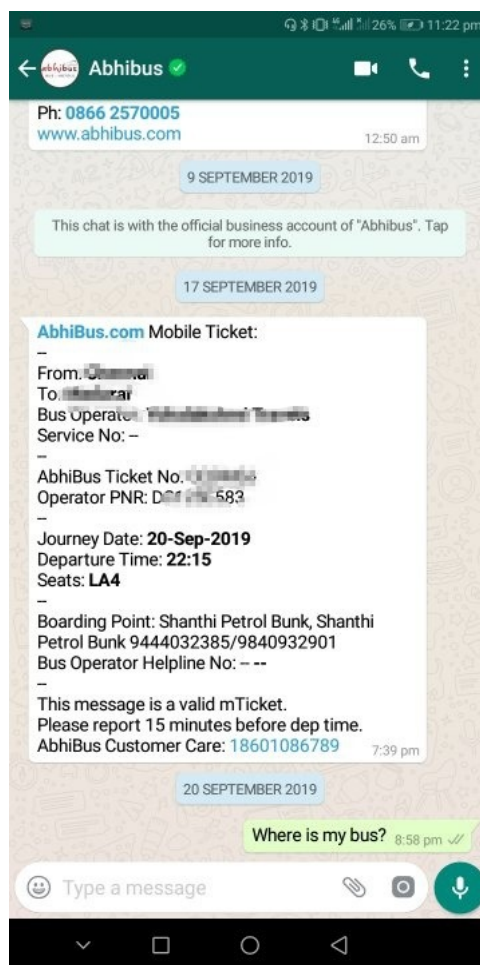


Figure 2.1

product's which contains the stock related and other assessment related assets yet there is no online bill trade, which significantly affects them in this pandemic circumstance. This made us to give these tech improvement even to little firms.

## **2.2 Disadvantages of Existing System**

- Not able to afford by small firms
- Not able to understand by every customer
- Contains excess of unwanted information

# CHAPTER 3

## Proposed Design

### 3.1 Proposed System

As our primary goal is to give the new innovation to the little firms so they can afford. We propose a framework primarily related to the little firms. Little firms utilize their nearby programming's for their charging. As online bill move isn't accessible for them so we attempt to make accessible for them.

As Each little firm has their own receipt plan we extricate information from their receipt pdf. There are numerous techniques engaged with information extraction i.e, by utilizing ocr-picture handling. We use PyPDF2 python module for extraction of data. Then we use regex for separating firm holder explicit fields and afterward we mechanize these fields utilizing pyautogui.

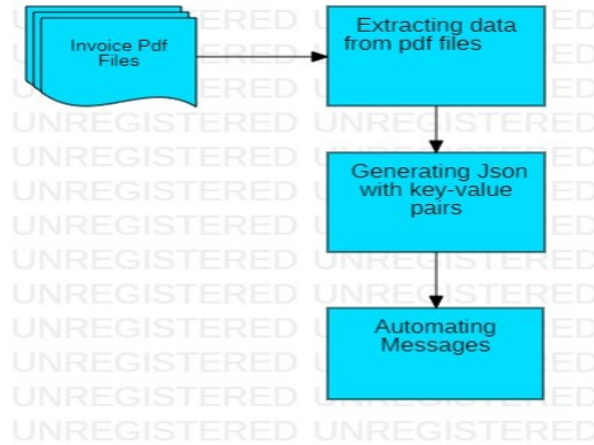


Figure 3.1

### 3.2 Data Extraction using PyPDF2

As PyPDF2 module involves in creating objects of images contains each image as each page and the extraction of data takes place using python pillow module i.e, OCR-image processing

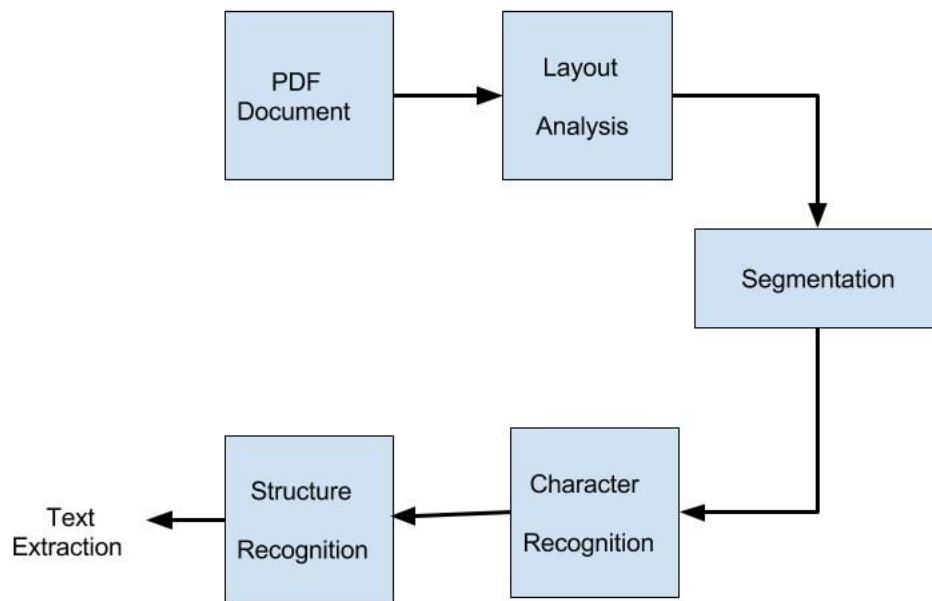


Figure 3.2

### 3.3 Regex Implementation

Regular expressions, called regexes for short, are descriptions for a pattern of text. For example, a `\d` in a regex stands for a digit character — that is, any single numeral 0 to 9.

- Import the regex module with `import re`.
- Create a Regex object with the `re.compile()` function. (Remember to use a raw string.
- Pass the string you want to search into the Regex object's `search()` method. This returns a Match object.
- Call the Match object's `group()` method to return a string of the actual matched.

- we store the messages and phonenumbers in csv file and we read them using python pandas module.

## 3.4 Pyautogui

Pyautogui is a library that allows you to control the mouse and keyboard to do various things. It is a cross-platform GUI automation Python module for human beings.

- automate, we will make use of typewrite method from pyautogui module, it will type each character present in the message on the screen at the cursor location.
- Python, web browser module provides a high-level interface that allows displaying Web-based documents to users. The web browser module can be used to launch a browser in a platform-independent.
- Python time method sleep() suspends execution for the given number of seconds. The argument may be a floating-point number to indicate a more precise sleep time.

# CHAPTER 4

## Design And Analysis

### 4.1 User Requirements

#### 4.1.1 Software Requirements

Software Requirements for our project are:

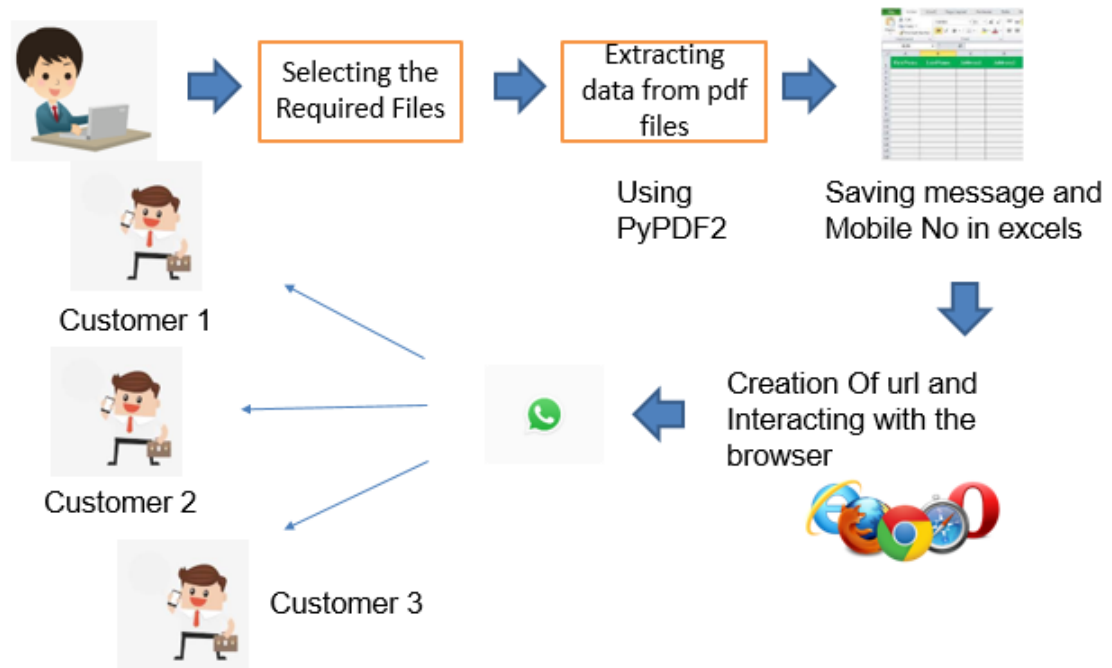
- **Python:** If possible we could use the latest version of python i.e Python 3.9.0. Or you can use any version of python that comes after python 3.6
- **Python Libraries:** Here we use different python libraries for the project, they are:
  - Pyautogui
  - tkinter
  - webbrowser
  - PyPDF2
  - Pandas
  - Regex

#### 4.1.2 Hardware Requirements

Hardware Requirements for the project are:

- **laptop:** This is required so that you can run software and automate whatsapp message
- **Android/IOS Device:** This is required to login through whatsapp web account.

## 4.2 Architecture of the Project



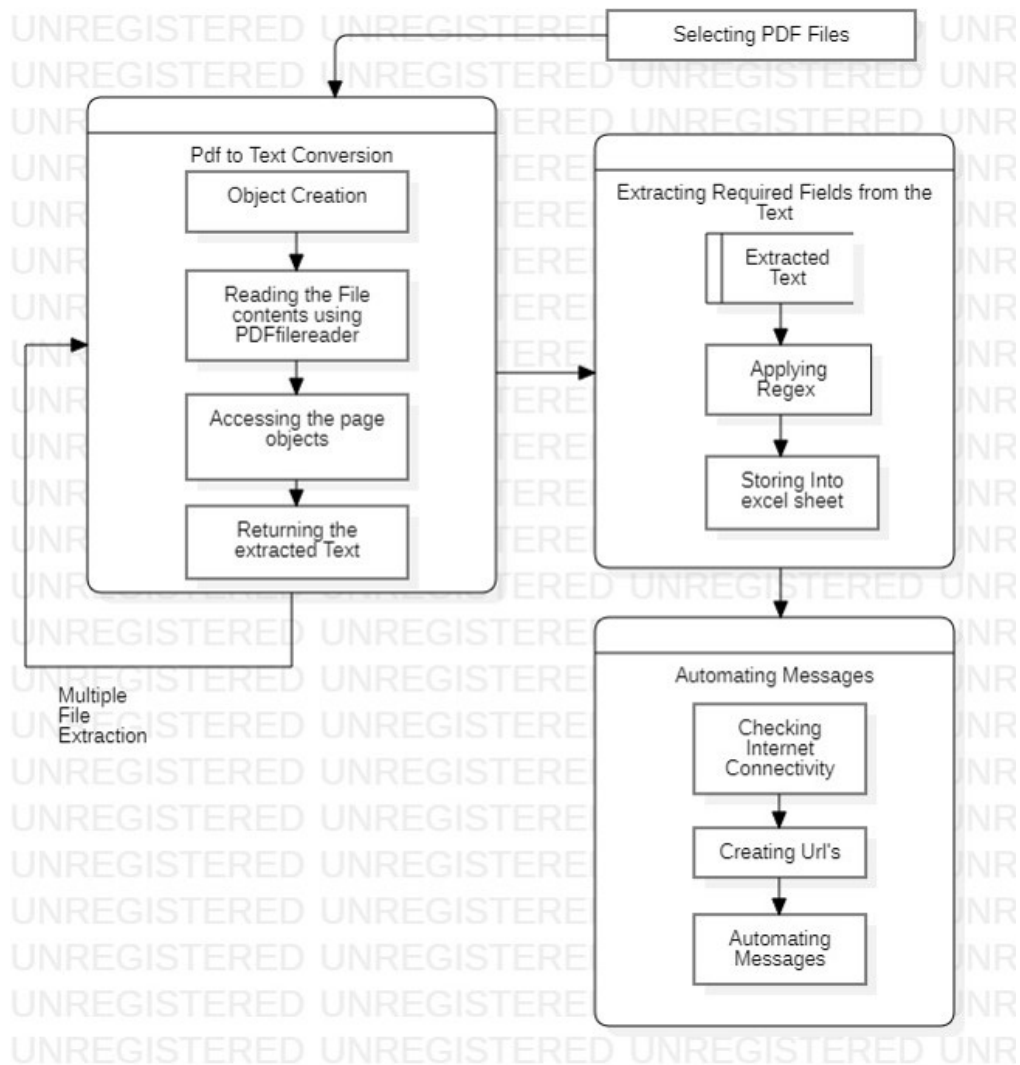
**Figure 4.1:** Architectural Diagram

- User interact with the python GUI
- user Selects the required pdf files
- data extraction takes place
- Extracted text data is store in the csv file.
- Read the data from the csv file using pandas module and we create url and automation of these text messages are done.

## 4.3 Data Flow Diagram

First step involves selection of PDF files and Pdf to Text conversion took place and then these text data is stored in the csv file and these files are read by pandas module then automation of whatsapp messages is done





**Figure 4.2:** DataFlow Diagram

## 4.4 TestCases

A test case is a document, which has a set of test data, preconditions, expected results and postconditions, developed for a particular test scenario in order to verify compliance against a specific requirement.

Test Case acts as the starting point for the test execution, and after applying a set of input values, the application has a definitive outcome and leaves the system at some end point or also known as execution postcondition.

Test Case ID	Test Scenario	Test Case	Pre-Condition	Test Steps	Test Data	Expected results	Post Condition	Status
TC-1	Predefined template and valid network	Upload a document	Should be predefined template format.	Upload document file	<valid file and valid connection>	Should Send the required information	Should be able to send the required information.	Information sent successfully
				Click Submit				
TC-2	Predefined template and no valid network	Upload a document	Should be predefined template format.	Upload document file	<valid file and invalid connection>	Should not send the required information	Shouldn't be able to send the required information.	Information sent is Unsuccessful
				Click submit				
TC-3	Undefined template and no valid network	Upload a document	Should be predefined template	Upload document file	<invalid template and invalid connection>	Should not send the required information	Shouldn't be able to send the required information	Information sent is <u>unsuccessfull</u>
				Click submit				

Figure 4.3: TestCases

## 4.5 Advantages:

- Multiple Customer's Interaction with the firm holders.
- This method is specially designed for low-level firms to attain their minimum profits in these pandemic situations.
- Only text format is easy to understand for the customer.

# CHAPTER 5

## Results

The system is implemented in Anaconda Prompt using Python. We used a platform of Intel core i5 processor with 8-GB RAM. The implementation results are shown. The input pdf is pre processed initially, then data is extracted using PyPDF2 module. It outputs the required data fields in text format and automation of messages through whatsapp is done.

### 5.1 Inputs And Outputs

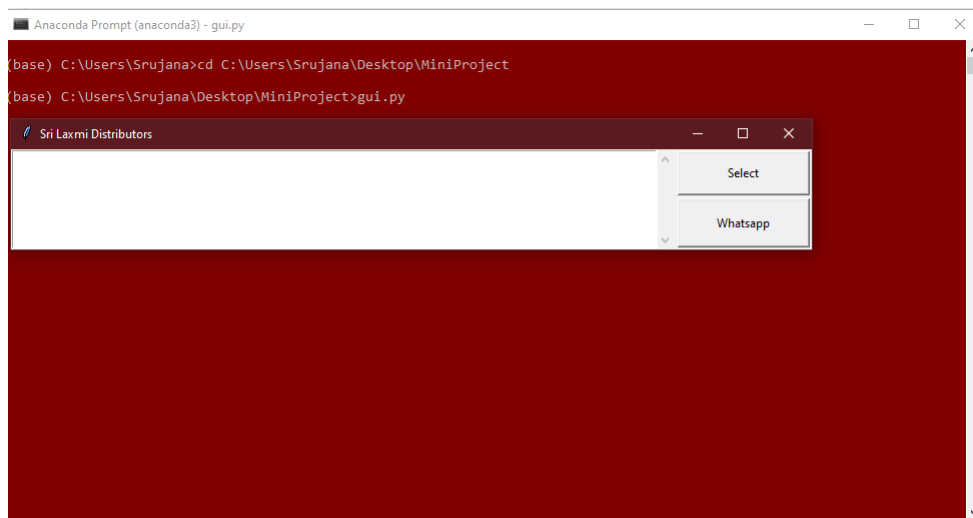
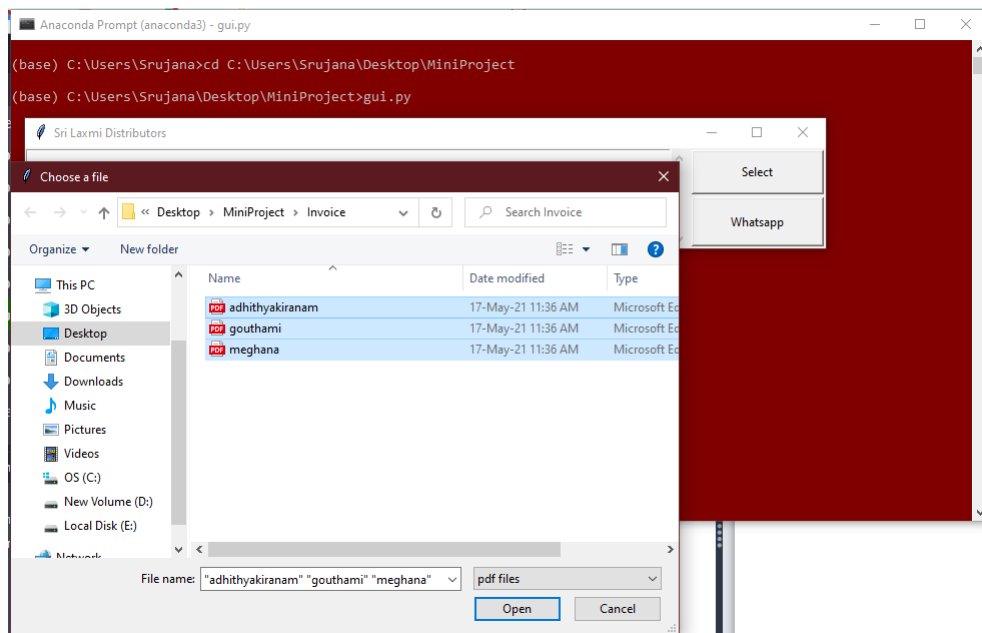
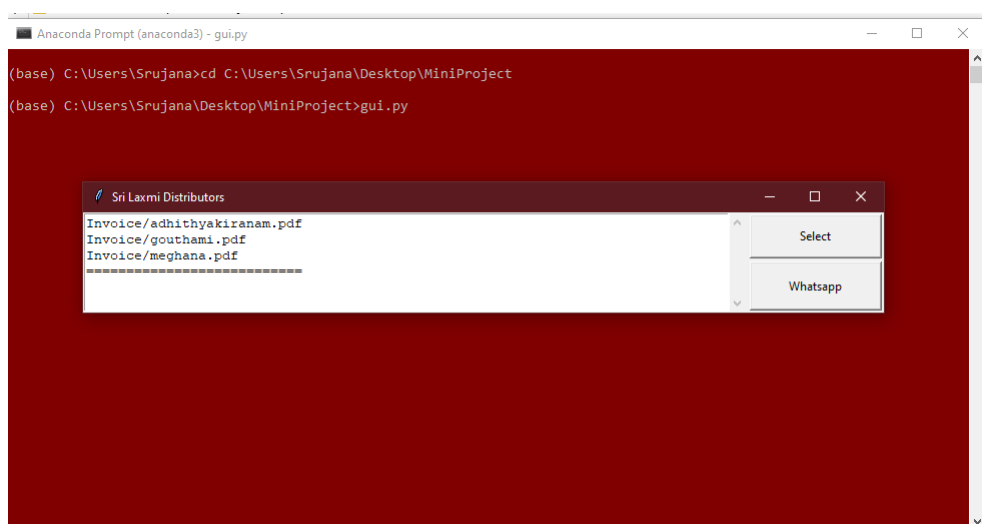


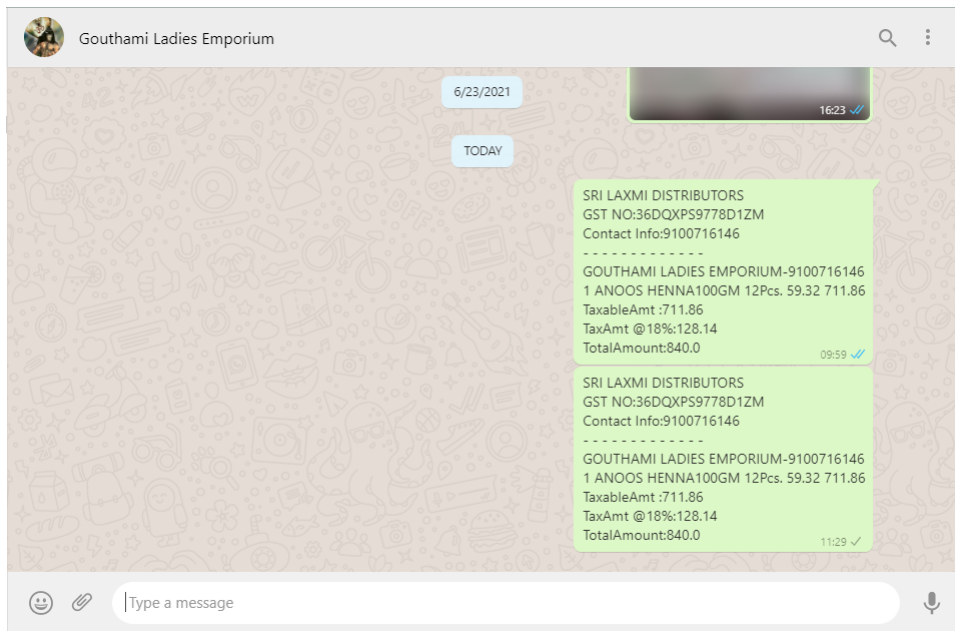
Figure 5.1: Accessing the GUI



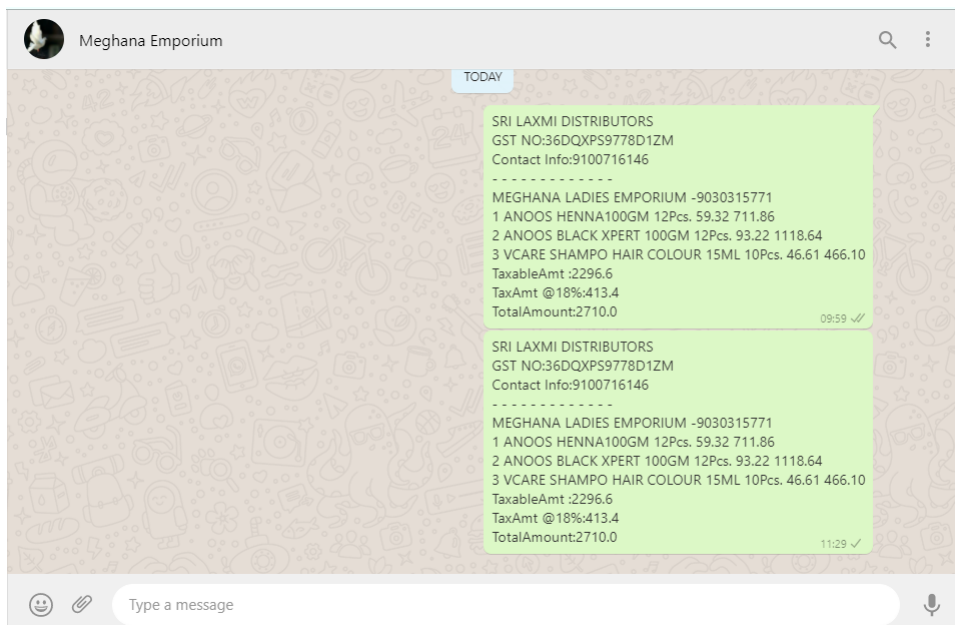
**Figure 5.2:** Selecting the invoices to be sent to the customers



**Figure 5.3:** Displaying the selected Customers



**Figure 5.4:** Automating text message through whatsapp



**Figure 5.5:** Automating text message through whatsapp

## CHAPTER 6

### CONCLUSION

- By using this software the low-level firm able to reach customers even in this pandemic situations
- By this software low-level firms can able to manage their time by automating multiple invoices at an instant.
- The Technology is able to reach the little firms needs, The development and usage of technology even for little firms will be made possible to meet their conditions

## **CHAPTER 7**

### **Future Scope**

- We may provide custom templates as per the user requirements.
- Remainder for customers to pay the invoice amount.
- Providing the customers with online pay directives so that they can pay the bill through online pay directives.

## CHAPTER 8

### References

- [1]For automation of messages-<https://stackabuse.com/getting-started-with-python-pyautogui>
- [2]Pdftodata Conversion-<https://pythonhosted.org/PyPDF2/>
- [3]Creation of Python gui-<https://www.javatpoint.com/python-tkinter-canvas>
- [4][https://www.w3schools.com/python/python\\_regex.asp](https://www.w3schools.com/python/python_regex.asp)
- [5]Extraction of data from pdf file  
<https://towardsdatascience.com/pdf-text-extraction-in-python-5b6ab9e92dd>