SmartBridge-VMware Tanzu Build-A-Thon

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Digital Payment Book

1. Introduction

Payment book application is designed to maintain customers, payments, and their purchases. A retailer will be an admin of the application and each customer of the retailer's shop will be the user. Customers can create their account in the payment book app by reading and agree to the terms and conditions of the shop.

Once a user created their account they can login to their account by using their own credentials, users will be able to see their purchase history, pending payments, and also if the user is having any doubt or complaint they can contact the retailer by using the contact our service. Admin will maintain data about purchases made by the customers & can see payment details and pending payment of the customers. Admin will send alerts to the customers if there is any due for payment or payment is pending for a long time.

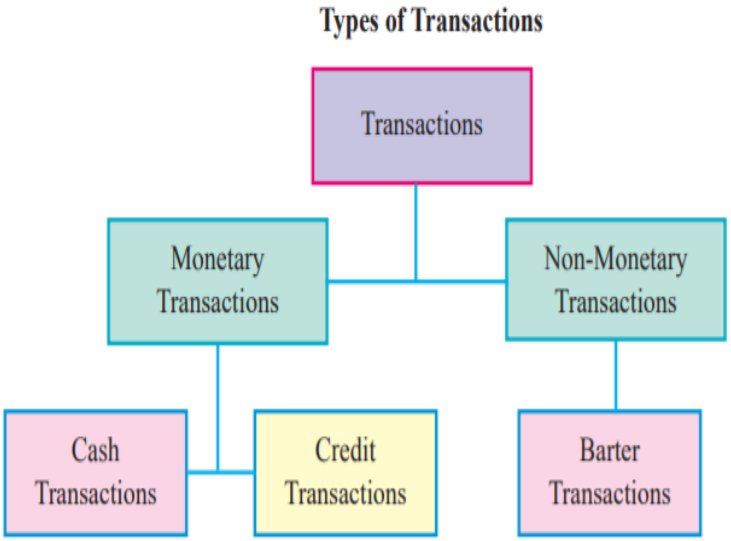
2. Literature Survey

India is the second-largest smartphone market in the world after China. The smartphones and other facilities with strong back up of Internet providers like Reliance Jio have boosted usage of the digital wallets, electronic payments. Mobile connectivity and internet are very important for online payments. As of November 2019, the active internet users in India are 504 million (Digital in India 2019 by IAMAI and Nielsen). Financial service institutions and other firms have tried a lot in increasing online payments and governments have also increased efforts to make increased penetration of internet. The penetration in rural India is also increasing substantially). The digital payment market is estimated to be $ 69,168 million in

2020(statistica.com). This is contributed by the technological developments happening in this filed and emergence of digital wallets. Digital wallet is a software application that helps users to digitally store money, payment credentials, and more. Consumers can use this software to implement various types of cashless transactions (McKinsey, May 2015). This is very much used for digital payment. The major deterrent for India‘s growth in this sector is the reach and quality of internet. India was ranked 128 out of 140 countries in terms of internet download speed as per the research done by The Hindu (December 2019). This must be improved for digital payment to be more successful. Though digital payment has reduced in different key sectors affected by COVID19, a lot of other sectors have seen an increase of utilization like online retail stores, gaming industry, utility payment etc

2.1 Existing Problems

Book-keeping is related with recording of business transactions. Business enterprise and other organizations deal in activities which involve exchange of money or money’s worth. All these activities are recorded for the purpose of taking important decisions as to whether the activities are feasible, profitable and are to be continued or not. Information about the business and other organizations is required not only by the proprietors and managers of business and other organisations but also to various other stakeholders such as the government, investors, customers, employees and researchers



2.2 Proposed Solution

The timely notifications and SMS from the app displays the current status for a customer/ vendor hereby making space for no ambiguous transactions or dealings. This helps improve decision making to buy in bulk as well as just-in-time buying, and to maintain low inventory.

Offers n special messages can be broadcasted to their customers in the time of emergency or lockdown. The app enables shopkeepers to add new customers in one click.

3.Theoritical Analysis

3.1 Block Diagram

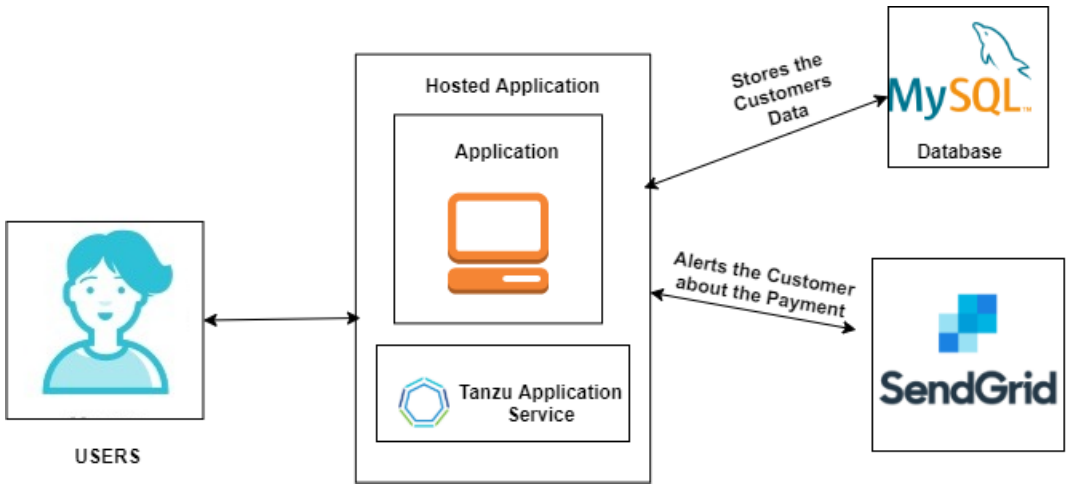


Fig : Proposed Solution For Digital Payment Book

3.2 Hardware and Software Requirements

3.2.1 Software Requirements

- Operating System: Windows10
- Text Editor / IDE: Spyder, Visual Studio Code
- Language: Python 3.8, HTML, CSS, JS, Bootstrap
- Framework: Flask

3.2.2 Hardware Requirements

- Processor: Intel Core i5 8thgen
- RAM: 8GB
- Hard Disk:500GB

4 Experimental Investigations

One such web app is the Digital Payment Book app. It allows small business owners to manage their accounting books digitally. Yes, the manual accounting or the ledger book which is now available digitally on the mobile device is called the Digital Payment Book app.

This app has replaced the traditional Digital Payment Book by its new digital ledger book. Digital Payment Book is an Indian app that is launched to help small business owners to record their daily financial transactions along with accepting payment online and keep their daily business accounting data up to date.

Small businesses include running a *paan* shop, tea shop, mobile accessory shop, *Kirana* store, milk delivery, vegetable vendor, grocery store, barbershop, and much more. Every such business is required in both rural and urban areas. Indeed these are essential services. Also, it is a hoary practise that all these businesses must accept the *udhar* model as customers may not always have the cash to buy things. This does not mean running a business for charity but there needs to be an accounting system to record the pending payments from customers to collect it later.
This is where the app plays a role in managing the cash book online to help businesses serve customers and collect money.

The app will help to store transaction details of all the customers personalized and will record every entry. There is no need to know accounting to start a business with this app. It will do all calculations for you.

The records of each customer are stored individually along with the payment due date. Minute details like how much you gave and received are also recorded in the app, With this app, it is now easy to manage the accounts of more than one business you run. Concurrently carry out different businesses and still enjoy all the accountings in this one book which is pocket friendly.

Maintaining inventory becomes easy as the app will show the current status of customer transactions. Which items are in demand, or what kind of service your customers look for can be determined with the previous transaction details, and deciding on expanding business becomes possible.

5. Results

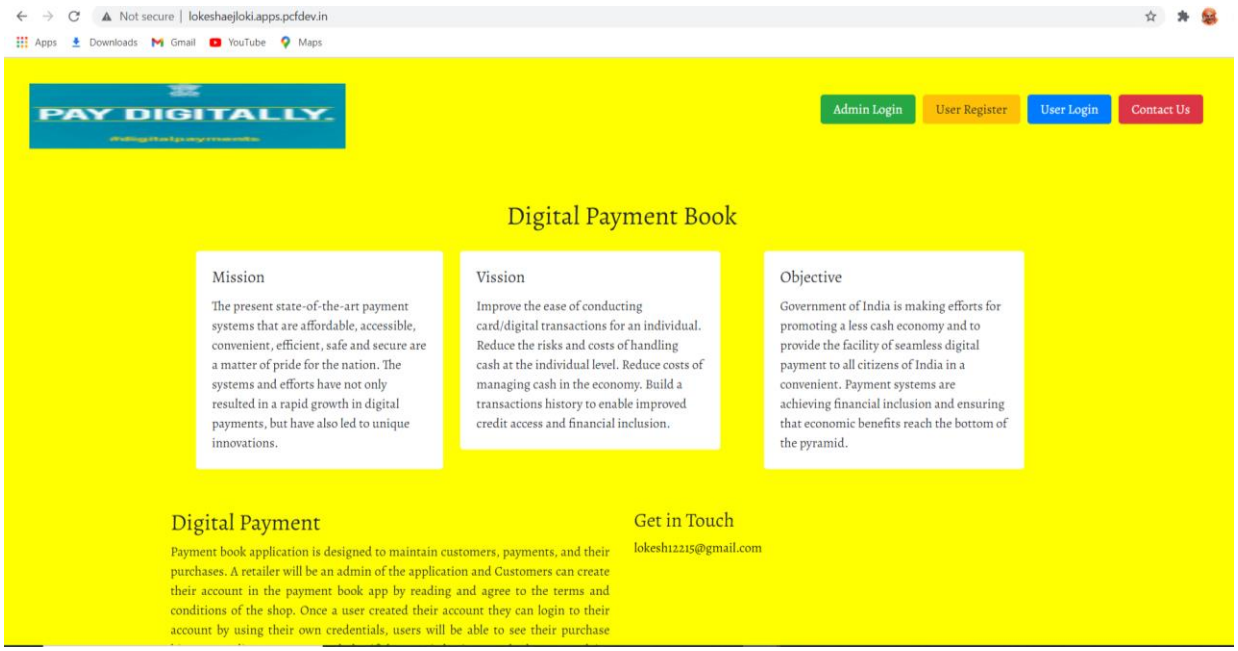


Fig 5.1 :Home Page of Digital Payment Book

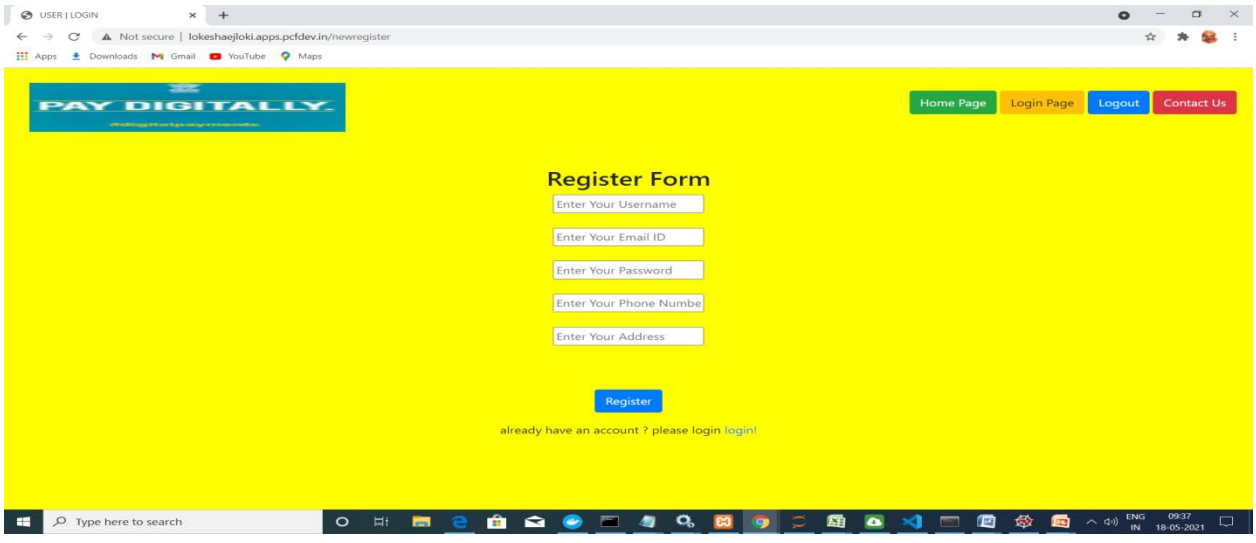


Fig 5.2:- Customer Can Register Digital Payment Book

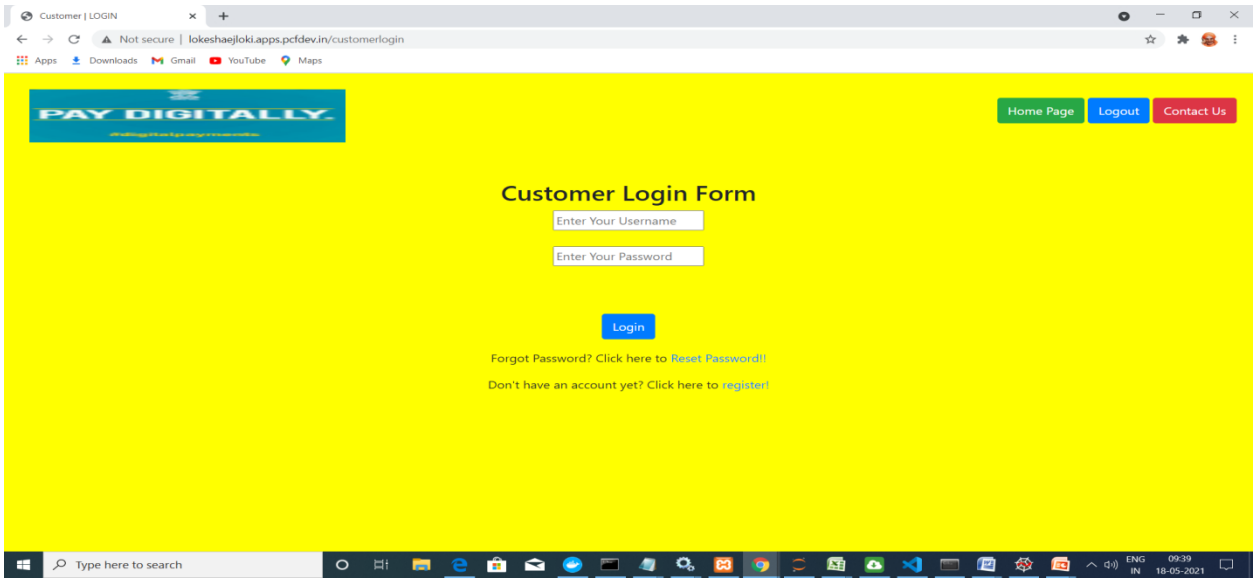


Fig 5.3:-Customer Login

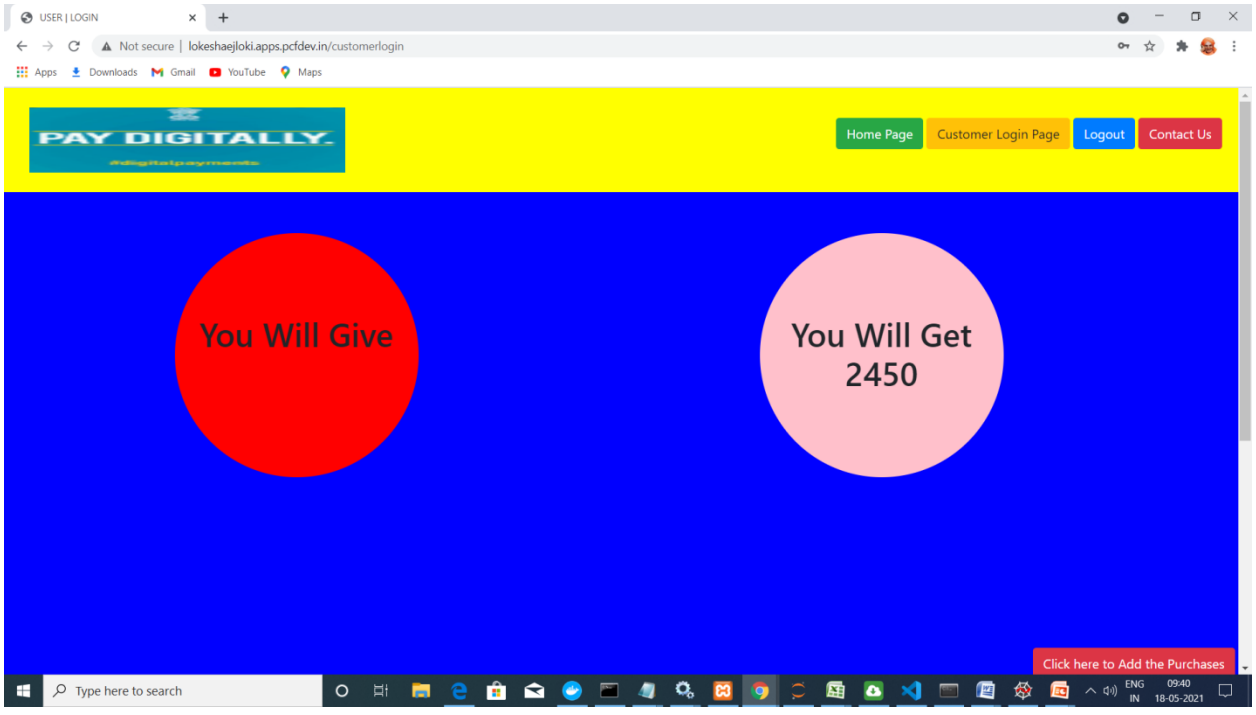


Fig 5.4:- Customer can view balance & add purchase items

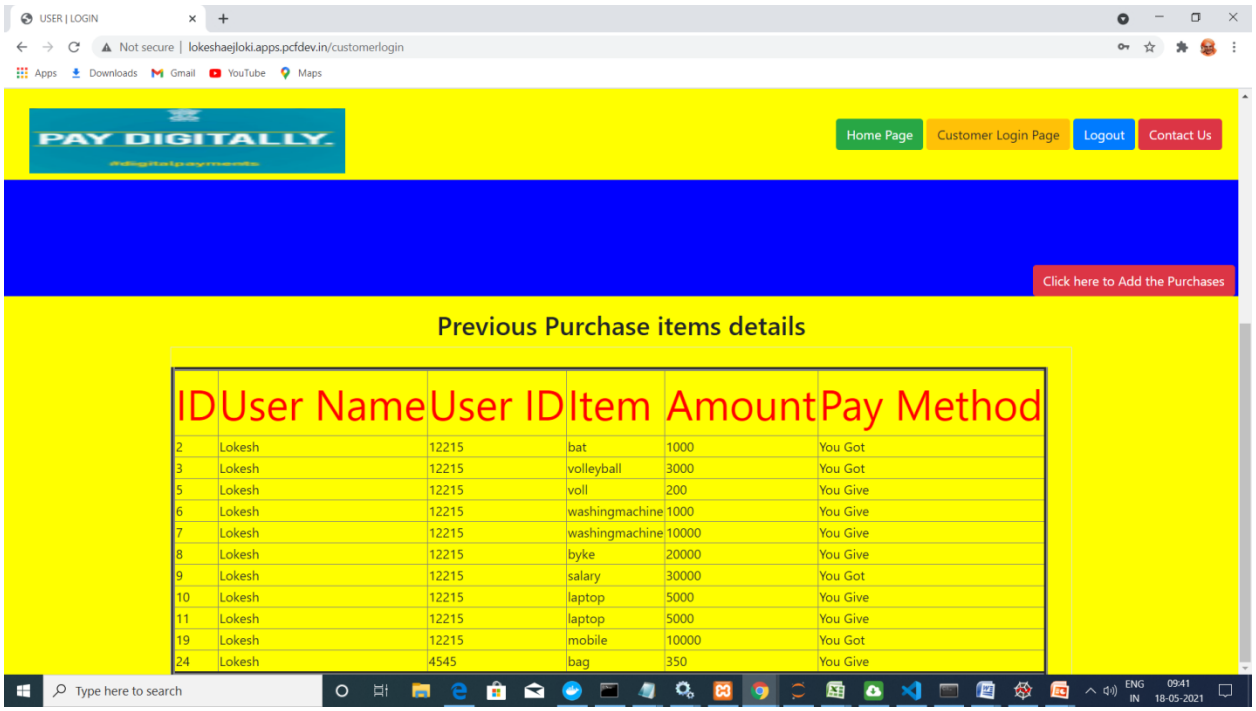


Fig 5.5 :- Customer can view the previous purchase items

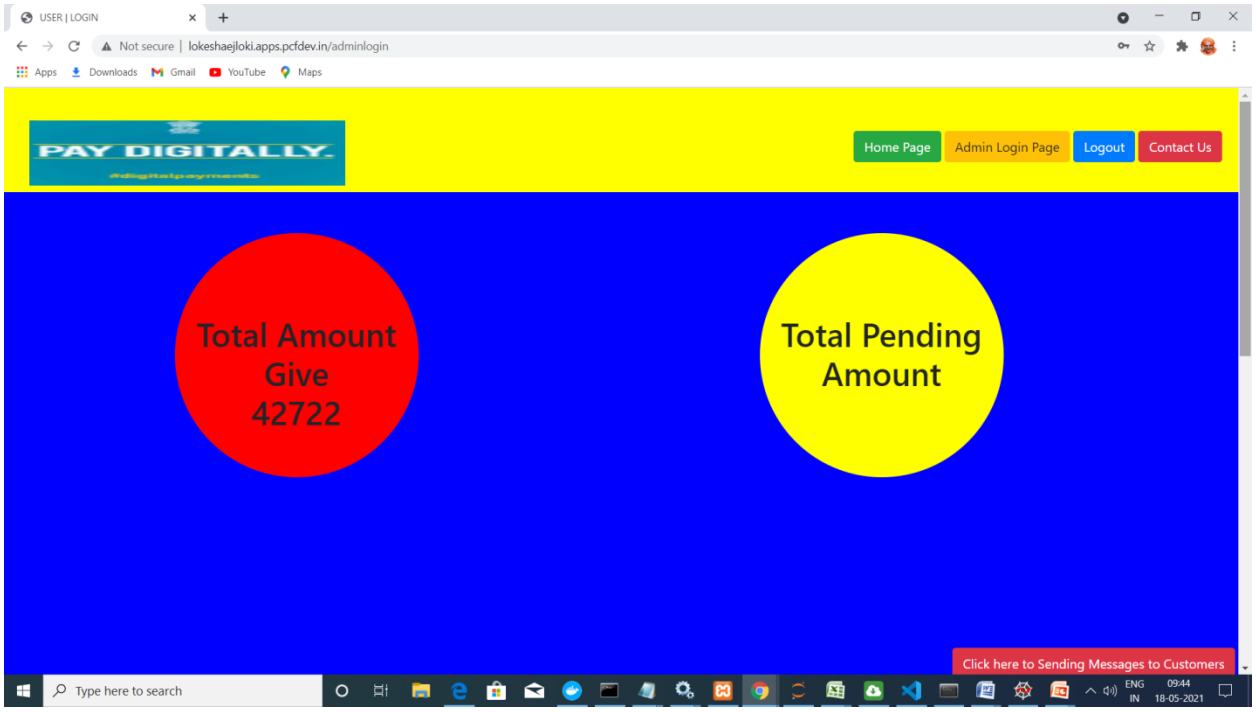


Fig 5.6:-Admin Dashboard

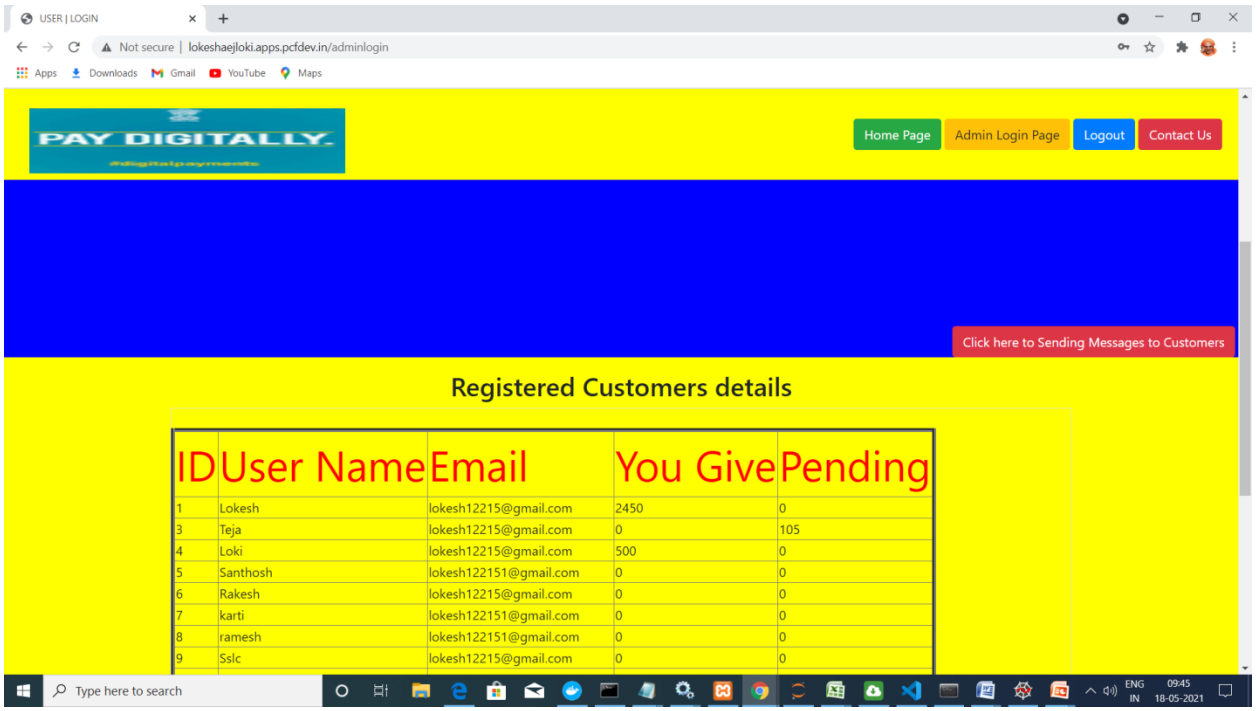


Fig 5.7:- Admin Can View the register Customer details

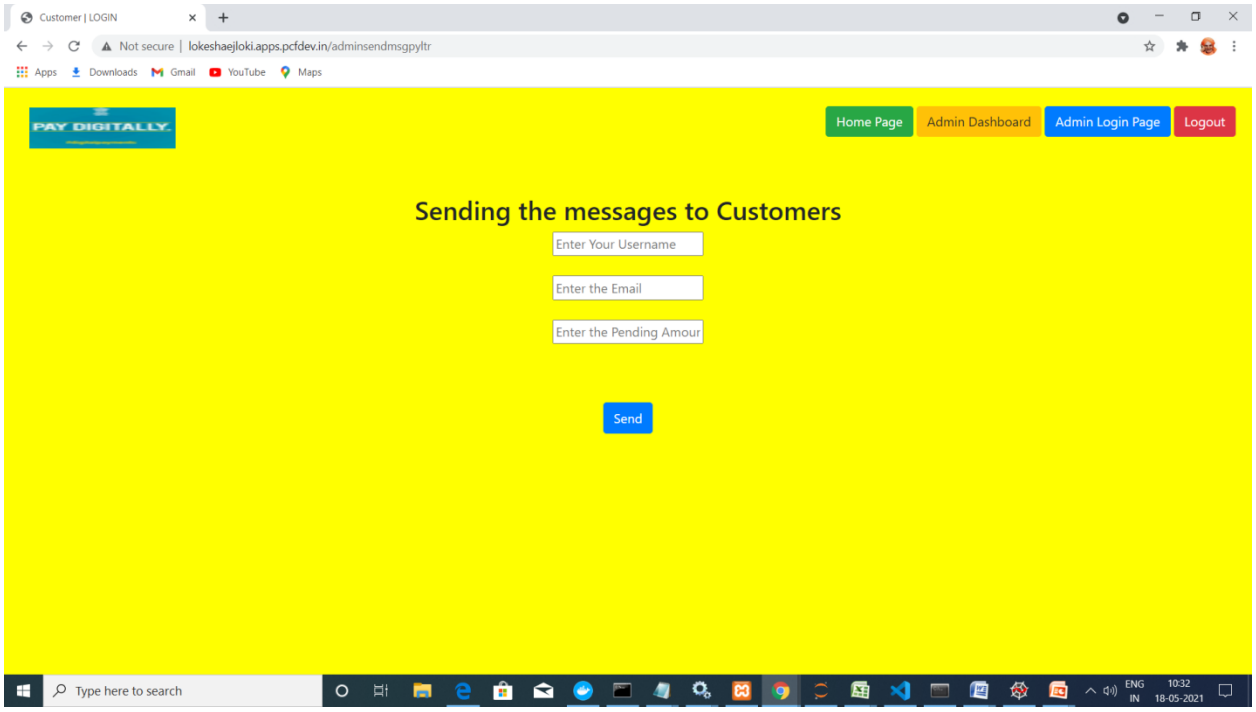


Fig 5.8 :- Admin Can Send the messages to pending amount to customers

6. Advantages and Disadvantages

Advantages

- Improved the transparency of the tax collection process.
- User friendly
- the government faced the complex task of managing multiple indirect taxes. But the backbone of the GST, the *GST Network (GSTN),* will manage all the processes related to GST operation. This is a fully integrated platform, which will simplify and ensure the smooth functioning of the GST activities.

Disadvantages

- Companies who operate their businesses in multiple states, have to register in all those states. This adds an extra level of complexity that did not exist earlier

7.Conclusion

Transformations that take place in the digital world have impacted in every phase of human life. Smartphones and internet facilities had made life simpler by a click of a button. This ultimately increases the needs and expectations of the consumers. In the current scenario with the increasing use of cashless payments has almost substituted the physical cash transactions. Though there are few limitations especially when it comes to privacy and security.

It was also inferred from the study that consumer has enough awareness of the information security in cashless transactions. Cashless transactions are to be encouraged as it provides convenience and agility. Even internet banking has become very popular for transactions. Modern technology and automation are going to take the transactions more user friendly in the future.

11. BIBILOGRAPHY

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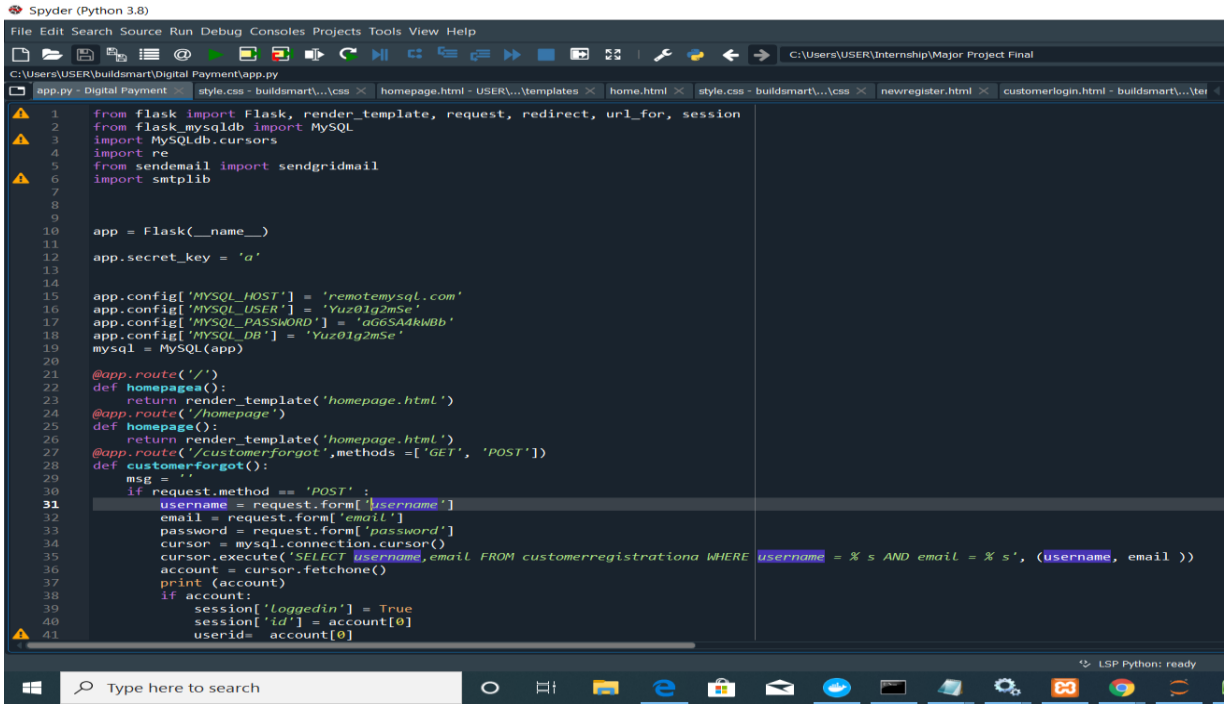
[3] Alkhowaiter, W. A. (2020). Digital payment and banking adoption research in Gulf countries: A systematic literature review. International Journal of Information Management, 53, 102102.

[4] Babu Sudhir, D and Narayanamma Lakshmi, P (2018), "Consumer Perception Towards Digital Payment", International Journal of Emerging Technologies and Innovative Research (www.jetir.org), ISSN:2349-5162,5(8),350-354, Available: http://www.jetir.org/papers/JETIRA006063.pdf

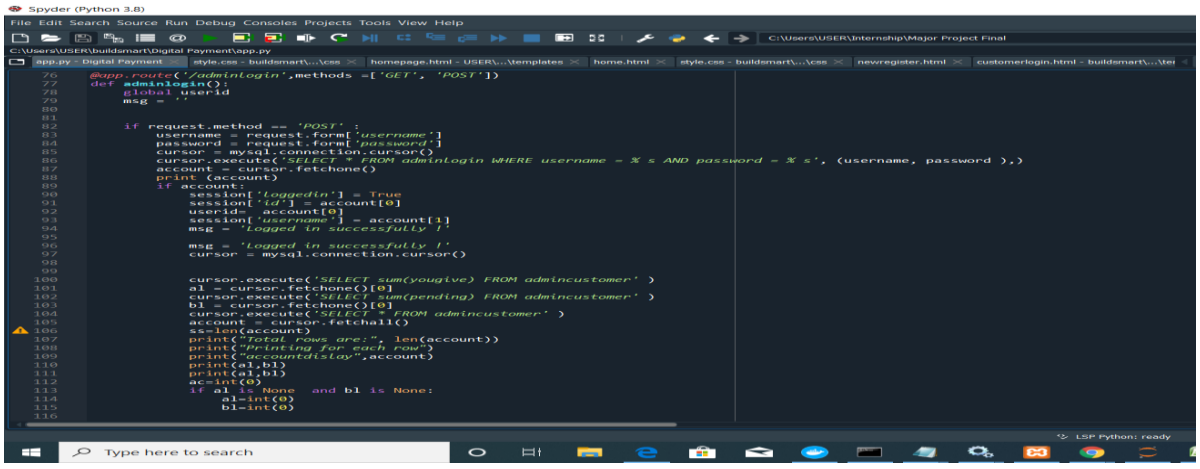
[5] Chattopadhyay, S. (2018). Awareness and participation of small retail businesses in cashless transactions: An empirical study. Management Dynamics in the Knowledge Economy, 6(2), 209-225

APPENDIX

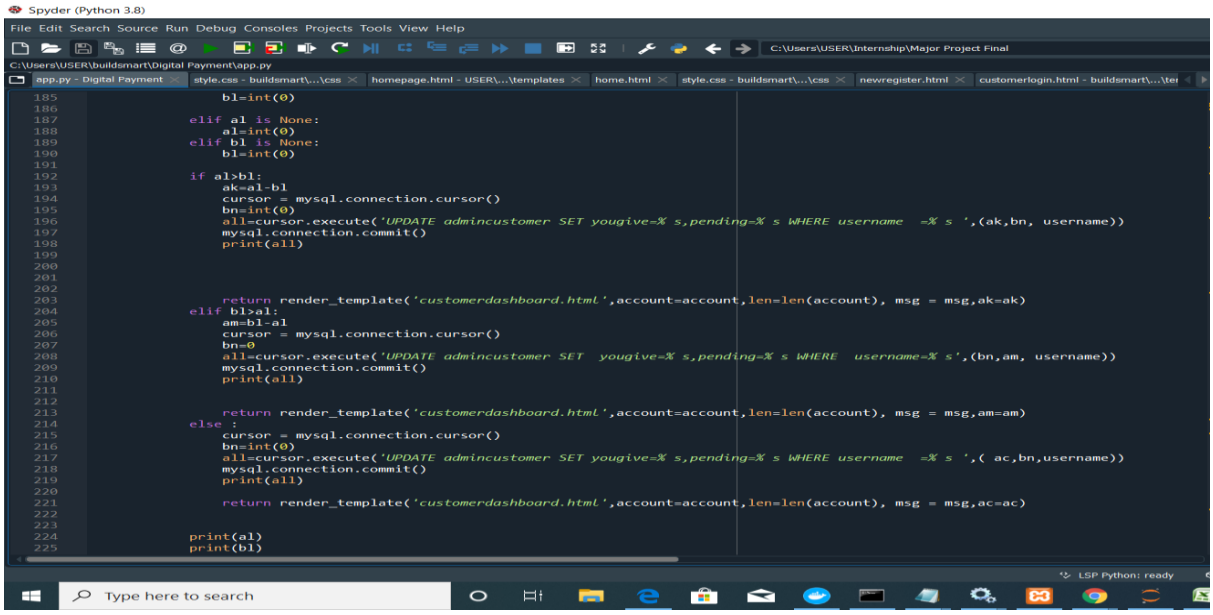
A] Source Code

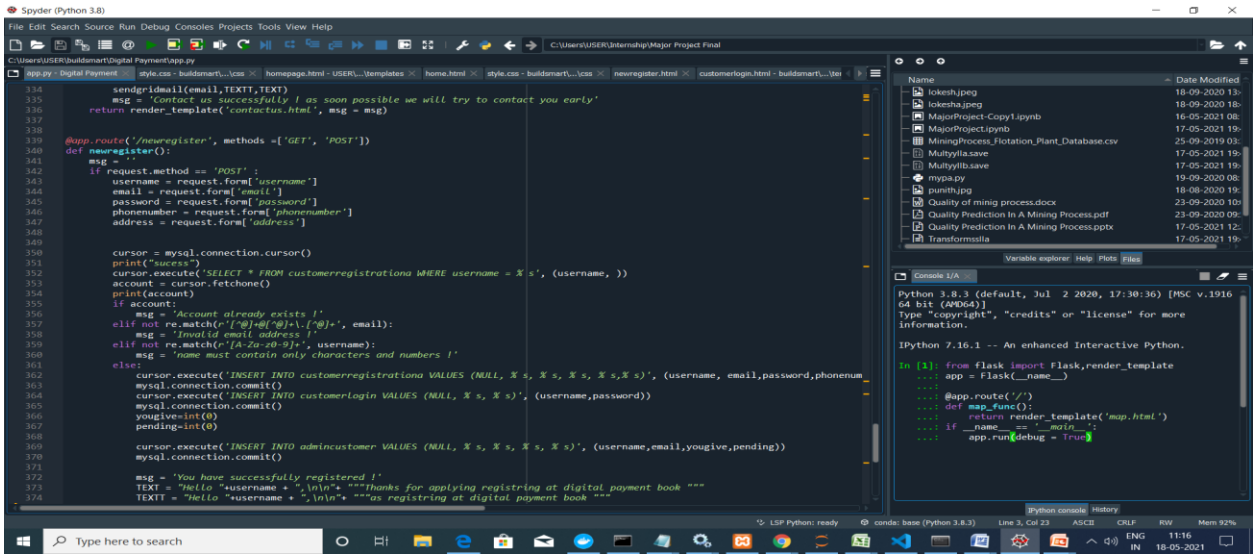


```
from flask import Flask, render_template, request, redirect, url_for, session
from flask_mysqldb import MySQL
import MySQLdb.cursors
import re
from sendemail import sendgridmail
import smtplib



app = Flask(__name__)

app.secret_key = 'a'


app.config['MYSQL_HOST'] = 'remotemysql.com'
app.config['MYSQL_USER'] = 'Yuz01g2mSe'
app.config['MYSQL_PASSWORD'] = 'aG6SA4kWBb'
app.config['MYSQL_DB'] = 'Yuz01g2mSe'
mysql = MySQL(app)

@app.route('/')
def homepagea():
    return render_template('homepage.html')
@app.route('/homepage')
def homepage():
    return render_template('homepage.html')
@app.route('/customerforgot',methods =['GET', 'POST'])
def customerforgot():
    msg = ''
    if request.method == 'POST' :
        username = request.form['username']
        email = request.form['email']
        password = request.form['password']
        cursor = mysql.connection.cursor()
        cursor.execute('SELECT username,email FROM customerregistrationa WHERE username = % s AND email = % s', (username, email ))
        account = cursor.fetchone()
        print (account)
        if account:
            session['loggedin'] = True
            session['id'] = account[0]
            userid=  account[0]
```



```
@app.route('/adminlogin',methods =['GET', 'POST'])
def adminlogin():
    global userid
    msg = ''

    if request.method == 'POST' :
        username = request.form['username']
        password = request.form['password']
        cursor = mysql.connection.cursor()
        cursor.execute('SELECT * FROM adminlogin WHERE username = % s AND password = % s', (username, password ),)
        account = cursor.fetchone()
        print (account)
        if account:
            session['loggedin'] = True
            session['id'] = account[0]
            userid=  account[0]
            session['username'] = account[1]
            msg = 'Logged in successfully !'

            msg = 'Logged in successfully !'
            cursor = mysql.connection.cursor()


            cursor.execute('SELECT sum(yougive) FROM admincustomer' )
            a1 = cursor.fetchone()[0]
            cursor.execute('SELECT sum(pending) FROM admincustomer' )
            b1 = cursor.fetchone()[0]
            cursor.execute('SELECT * FROM admincustomer' )
            account = cursor.fetchall()
            ss=len(account)
            print("Total rows are:", len(account))
            print("Printing for each row")
            print("accountdislay",account)
            print(a1,b1)
            print(a1,b1)
            ac=int(0)
            if a1 is None  and b1 is None:
                a1=int(0)
                b1=int(0)
```





B] Running Application Link:- http://lokeshaejloki.apps.pcfdev.in/