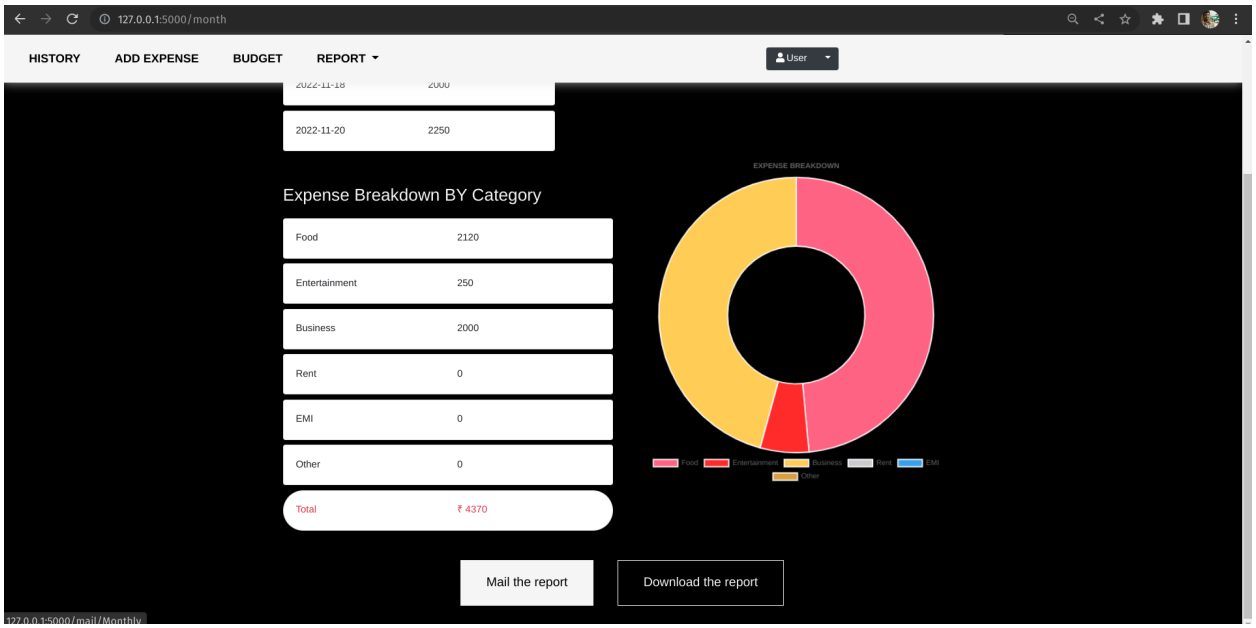
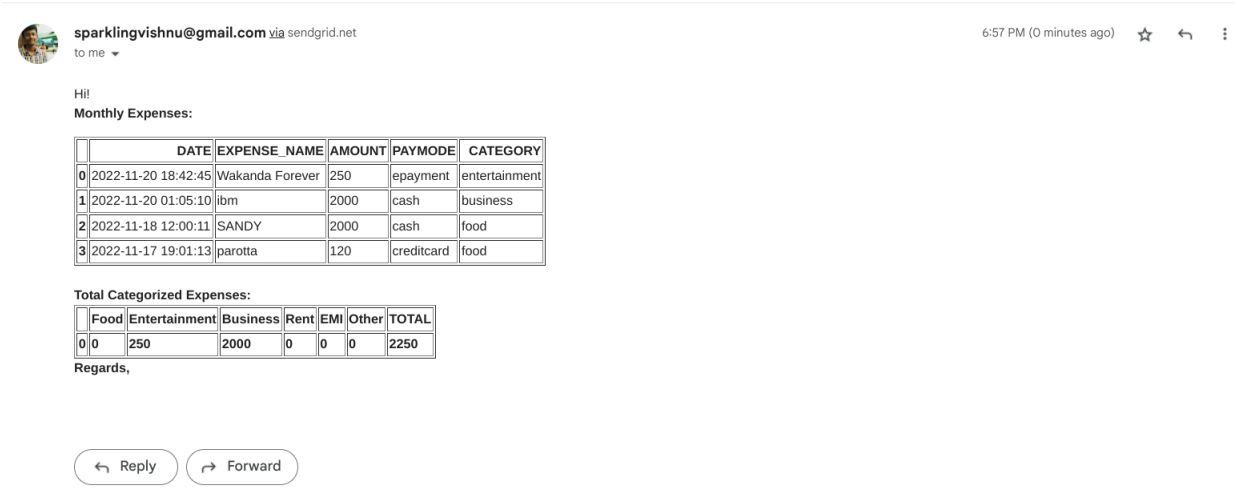
DEVELOPMENT PHASE
SPRINT - 3

Team ID	PNT2022TMID35639
Project Name	Personal Expense Tracker Application

SCREENSHOTS:

- Click on Mail the report:





sparklingvishnu@gmail.com via sendgrid.net
to me
6:57 PM (0 minutes ago)

Hi!
Monthly Expenses:

	DATE	EXPENSE_NAME	AMOUNT	PAYMODE	CATEGORY
0	2022-11-20 18:42:45	Wakanda Forever	250	epayment	entertainment
1	2022-11-20 01:05:10	ibm	2000	cash	business
2	2022-11-18 12:00:11	SANDY	2000	cash	food
3	2022-11-17 19:01:13	parotta	120	creditcard	food

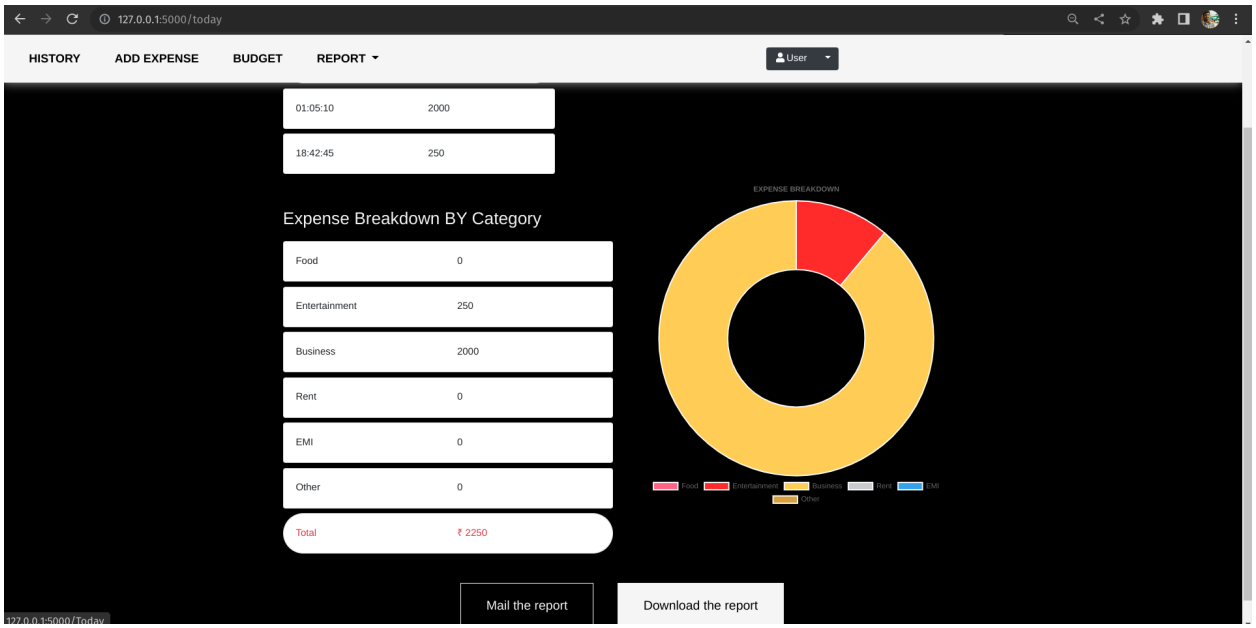
Total Categorized Expenses:

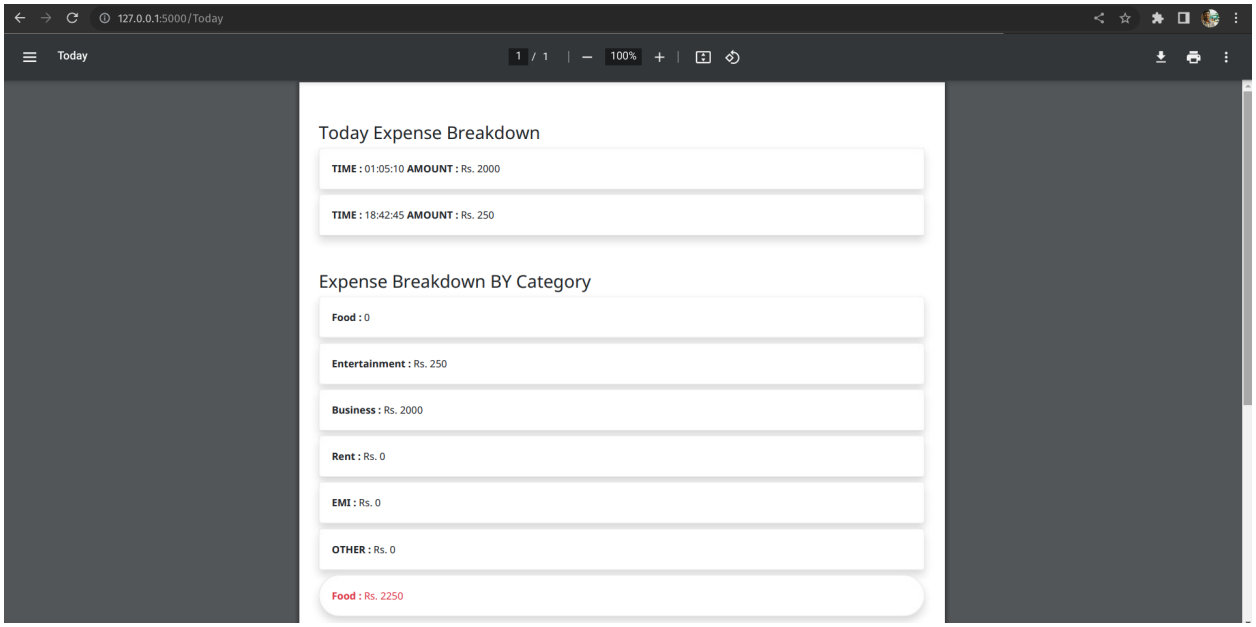
	Food	Entertainment	Business	Rent	EMI	Other	TOTAL
0	0	250	2000	0	0	0	2250

Regards,

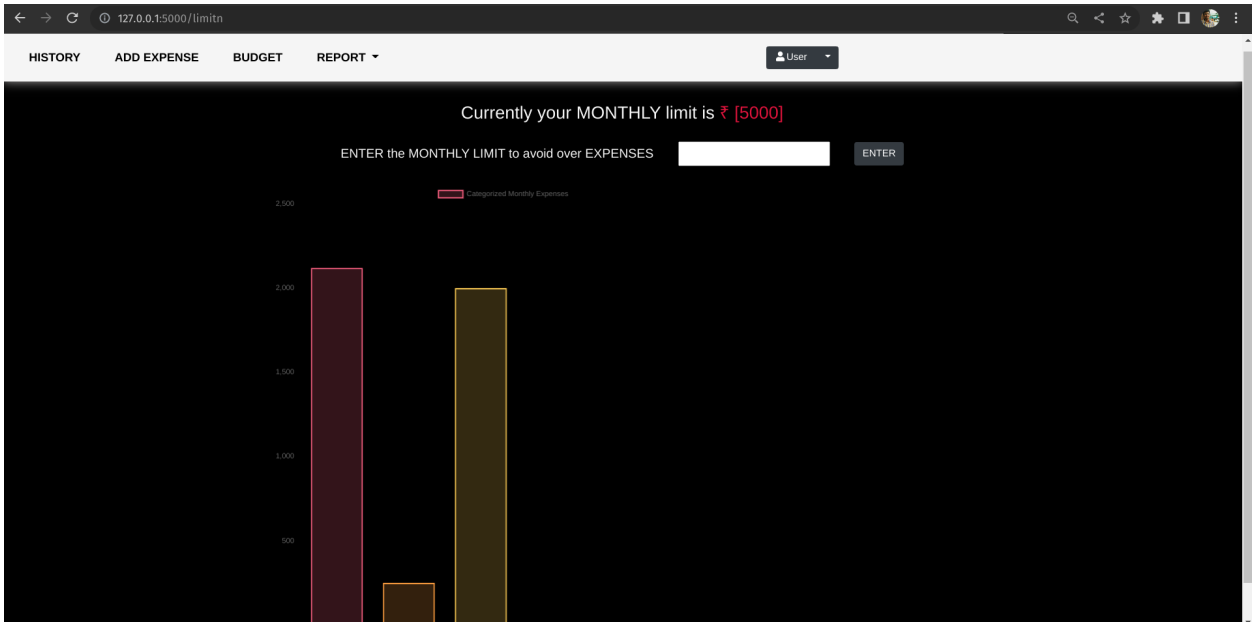
Reply Forward

- Click on Download the report:



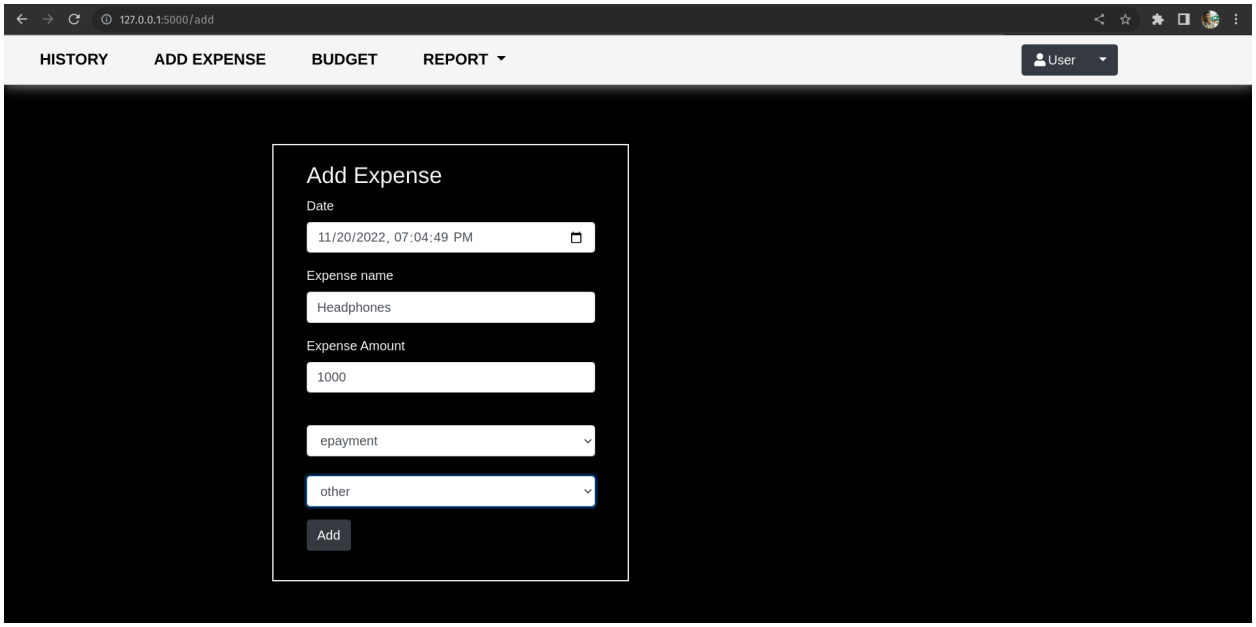


- Limit is set to 5000

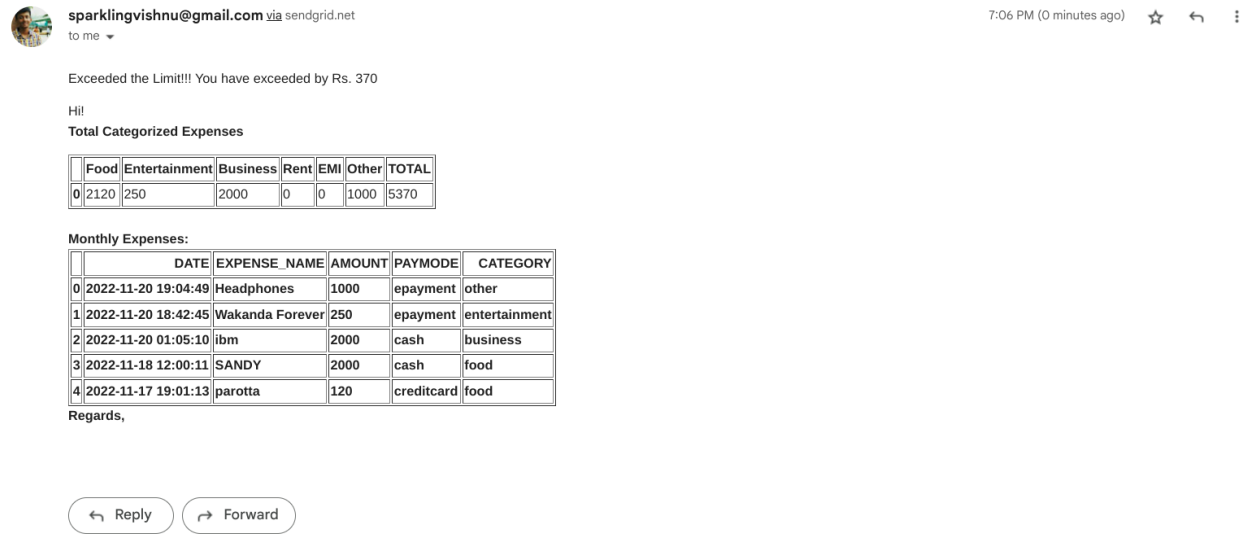


- Try adding expenses such that your monthly expenses go beyond Rs. 5000. Current monthly expense is Rs. 4370, so add Rs. 1000 in add-expense.

- An email alert will be sent to your registered email, stating that you have crossed your limit.



- Alert mail received successfully:



sparklingvishnu@gmail.com via sendgrid.net
to me

7:06 PM (0 minutes ago)

Exceeded the Limit!!! You have exceeded by Rs. 370

Hi!

Total Categorized Expenses

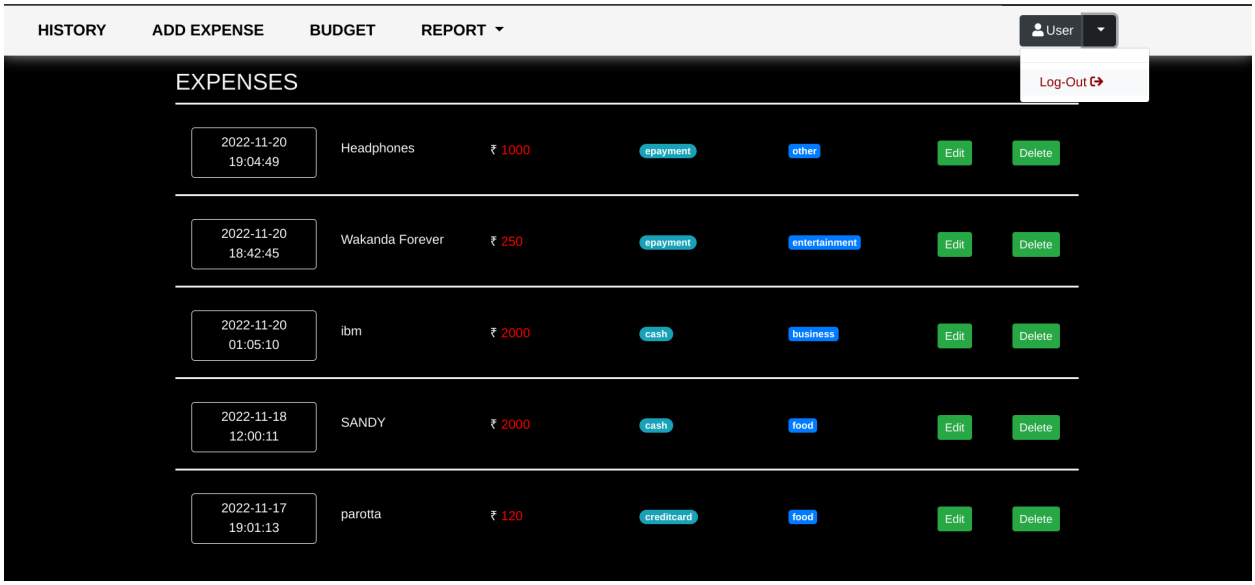
	Food	Entertainment	Business	Rent	EMI	Other	TOTAL
0	2120	250	2000	0	0	1000	5370

Monthly Expenses:

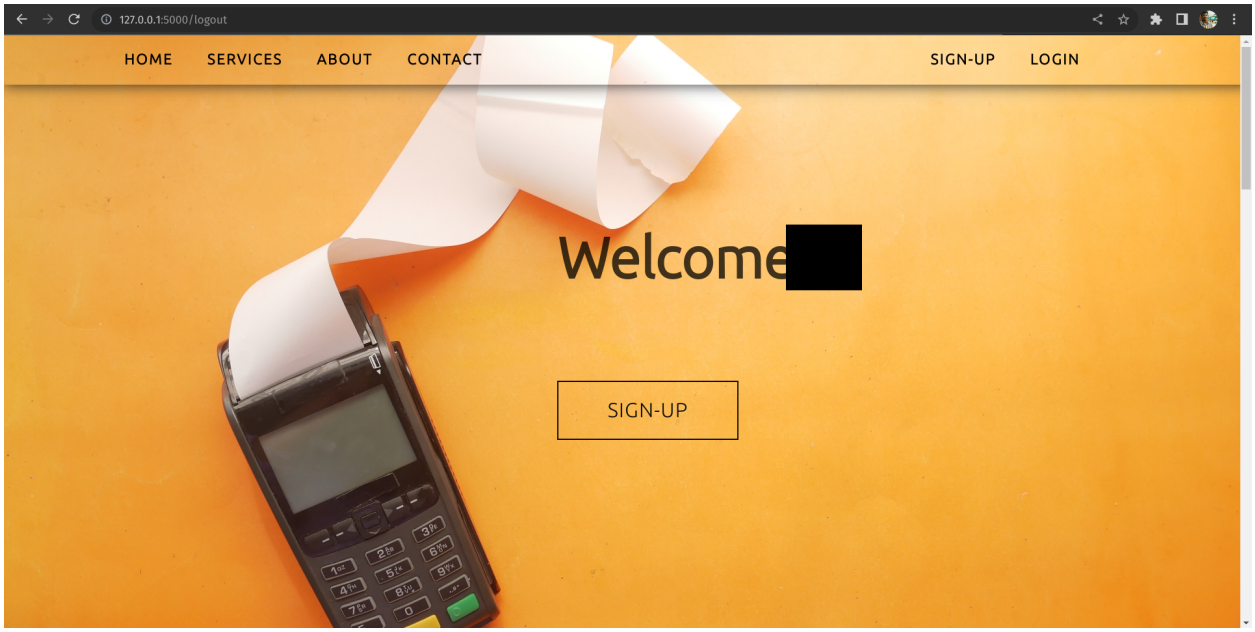
	DATE	EXPENSE_NAME	AMOUNT	PAYMODE	CATEGORY
0	2022-11-20 19:04:49	Headphones	1000	epayment	other
1	2022-11-20 18:42:45	Wakanda Forever	250	epayment	entertainment
2	2022-11-20 01:05:10	ibm	2000	cash	business
3	2022-11-18 12:00:11	SANDY	2000	cash	food
4	2022-11-17 19:01:13	parotta	120	creditcard	food

Regards,

Reply Forward



- Logged out successfully:



CODE:

```
from flask import Flask, render_template, request, redirect, session , make_response, url_for,
json, flash
import re, ibm_db
import ibm_db_dbi ,pandas as pd
from flask_mail import Mail, Message
import os, datetime
from pandas import Timestamp
from pretty_html_table import build_table
import pdfkit


app = Flask(__name__)

app.secret_key = 'SECRET_KEY'



conn = ibm_db.connect("DATABASE=bludb;
HOSTNAME=fbd88901-ebdb-4a4f-a32e-9822b9fb237b.c1ogj3sd0tgtu0lqde00.databases.appdo
main.cloud; PORT=32731; SECURITY=SSL; SSLServerCertificate=DigiCertGlobalRootCA.crt;
UID=rfh77431;PWD=1WClhcJWgdCoeAk5","","")
pd_conn = ibm_db_dbi.Connection(conn)

#HOME--PAGE
@app.route("/home")
def home():
```

```
    return render_template("homepage.html")

@app.route("/")
def add():
    return render_template("home.html")



#SIGN--UP--OR--REGISTER
@app.route("/signup")
def signup():
    return render_template("signup.html")



@app.route('/register', methods =['GET', 'POST'])
def register():
    msg = ''
    if request.method == 'POST' :
        username = request.form['username']
        email = request.form['email']
        password = request.form['password']

        sql = 'SELECT * from REGISTER WHERE USERNAME = ?'
        stmt = ibm_db.prepare(conn, sql)
        ibm_db.bind_param(stmt, 1, username)
        ibm_db.execute(stmt)

        account = ibm_db.fetch_assoc(stmt)

        print(account)
        if account:
            msg = 'Account already exists !'
        elif not re.match(r'[^@]+@[^@]+\.[^@]+', email):
            msg = 'Invalid email address !'
        elif not re.match(r'[A-Za-z0-9]+', username):
            msg = 'name must contain only characters and numbers !'
        else:
            sql = "INSERT INTO REGISTER(USER_ID,USERNAME,EMAIL,PASSWORD)
VALUES(DEFAULT,?,?,?)"
            stmt=ibm_db.prepare(conn,sql)
            ibm_db.bind_param(stmt,1,username)
            ibm_db.bind_param(stmt,2,email)
            ibm_db.bind_param(stmt,3,password)
```

```
            ibm_db.execute(stmt)

            msg = 'You have successfully registered !'
        return render_template('signup.html', msg = msg)



#LOGIN--PAGE
@app.route("/signin")
def signin():
    return render_template("login.html")

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

    if request.method == 'POST' :
        username = request.form['username']
        password = request.form['password']

        sql = 'SELECT * from REGISTER WHERE USERNAME = ? AND PASSWORD = ?'
        stmt = ibm_db.prepare(conn, sql)
        ibm_db.bind_param(stmt, 1, username)
        ibm_db.bind_param(stmt, 2, password)
        ibm_db.execute(stmt)

        account = ibm_db.fetch_assoc(stmt)

        print (account)
        if account:
            session['loggedin'] = True
            session['id'] = account['USER_ID']
            userid =  account['USER_ID']
            session['username'] = account['USERNAME']

            return redirect('/add')
        else:
            msg = 'Incorrect username / password !'
    return render_template('login.html', msg = msg)
```

```
#ADDING----DATA
@app.route("/add")
def adding():
    if session.get("id")== None or session.get("username") == None:
        return redirect('/')

    return render_template('add.html')


@app.route('/addexpense',methods=['GET', 'POST'])
def addexpense():

    if session.get("id")== None or session.get("username") == None:
        redirect('/')

    date = request.form['date']
    date = AlterDate(date)

    expensename = request.form['expensename']
    amount = request.form['amount']
    paymode = request.form['paymode']
    category = request.form['category']

    print(date)
    rep = generateReport('Monthly')
    monthly_expense = rep['total'][0]
    print(type(monthly_expense),type(amount))

    sql = "INSERT INTO EXPENSES VALUES(DEFAULT,?,?,?,?,?,?)"
    stmt = ibm_db.prepare(conn, sql)
    ibm_db.bind_param(stmt, 1, session['id'])
    ibm_db.bind_param(stmt, 2, date)
    ibm_db.bind_param(stmt, 3, expensename)
    ibm_db.bind_param(stmt, 4, amount)
    ibm_db.bind_param(stmt, 5, paymode)
    ibm_db.bind_param(stmt, 6, category)
    ibm_db.execute(stmt)


    sql = 'SELECT limitss FROM LIMITS WHERE USER_ID = {}'.format(session['id'])
    df = pd.read_sql(sql,pd_conn)
    row = df.values.tolist()
```

```
    if(len(row) > 0 and int(amount) + int(monthly_expense) > int(row[0][0]) ):
        flash("ALERT!!! You have crossed your monthly limit")
        sendLimitAlert(int(amount) + int(monthly_expense) - int(row[0][0]))

    print(date + " " + expensename + " " + amount + " " + paymode + " " + category)

    return redirect("/display")

def AlterDate(date):
    temp = date.split('T')
    time = temp[1].replace(':','.')

    return temp[0]+'-'+time



#DISPLAY---graph
@app.route("/display")
def display():
    if session.get("id")== None or session.get("username") == None:
        return redirect('/')

    print(session["username"],session['id'])

    id = str(session['id'])

    sql = 'SELECT * FROM EXPENSES WHERE USER_ID = {} ORDER BY DATE
DESC'.format(id)
    df = pd.read_sql(sql,pd_conn)
    expense = df.values.tolist()

    print(expense)

    return render_template('display.html' ,expense = expense)


#delete---the--data

@app.route('/delete/<string:id>', methods = ['POST', 'GET' ])
def delete(id):
    sql = "DELETE FROM expenses WHERE EXPENSE_ID = ?"
    stmt = ibm_db.prepare(conn, sql)
    ibm_db.bind_param(stmt, 1, id)
    ibm_db.execute(stmt)
```

```
    print('deleted successfully')
    return redirect("/display")


#UPDATE---DATA
@app.route('/edit/<id>', methods = ['POST', 'GET' ])
def edit(id):
    sql = 'SELECT * FROM EXPENSES WHERE EXPENSE_ID = {}'.format(id)
    df = pd.read_sql(sql,pd_conn)
    row = df.values.tolist()

    print(row[0])
    return render_template('edit.html', expenses = row[0])




@app.route('/update/<id>', methods = ['POST'])
def update(id):
    if request.method == 'POST' :

        date = request.form['date']
        print(AlterDate(date))
        expensename = request.form['expensename']
        amount = request.form['amount']
        paymode = request.form['paymode']
        category = request.form['category']


        sql = "UPDATE expenses SET DATE = ?, EXPENSE_NAME = ?, AMOUNT = ?,PAYMODE
= ?, CATEGORY = ? WHERE EXPENSE_ID = ?"
        stmt = ibm_db.prepare(conn, sql)
        ibm_db.bind_param(stmt, 1, AlterDate(date))
        ibm_db.bind_param(stmt, 2, expensename)
        ibm_db.bind_param(stmt, 3, amount)
        ibm_db.bind_param(stmt, 4, paymode)
        ibm_db.bind_param(stmt, 5, category)
        ibm_db.bind_param(stmt, 6, id)

        ibm_db.execute(stmt)

        print('successfully updated')
        return redirect("/display")
```

```
 #limit
@app.route("/limit" )
def limit():
      return redirect('/limitn')

@app.route("/limitnum" , methods = ['POST' ])
def limitnum():
   if request.method == "POST":
      if session.get("id")== None or session.get("username") == None:
         return redirect('/')

      number= request.form['number']

      sql = 'SELECT limitss FROM LIMITS WHERE USER_ID = {}'.format(session['id'])
      df = pd.read_sql(sql,pd_conn)
      row = df.values.tolist()

      if(len(row) > 0):
         sql = "UPDATE LIMITS SET LIMITSS = ? WHERE USER_ID = ?"
         stmt = ibm_db.prepare(conn, sql)
         ibm_db.bind_param(stmt,1,number)
         ibm_db.bind_param(stmt,2,session['id'])
         ibm_db.execute(stmt)

      else:
         sql = "INSERT INTO LIMITS VALUES(DEFAULT,?,?)"
         stmt = ibm_db.prepare(conn, sql)
         ibm_db.bind_param(stmt, 1, session['id'])
         ibm_db.bind_param(stmt, 2, number)
         ibm_db.execute(stmt)

      return redirect('/limitn')


@app.route("/limitn")
def limitn():
   if session.get("id")== None or session.get("username") == None:
      return redirect('/')

   sql = 'SELECT limitss FROM LIMITS WHERE USER_ID = {}'.format(session['id'])
   df = pd.read_sql(sql,pd_conn)
```

```
    row = df.values.tolist()

    s = 0
    if(len(row) > 0):
        s = row[0]

    rep = generateReport('Monthly')
    monthly_expense = list()
    for key,val in rep.items():
        if(key != 'texpense' and key!='total'):
            print(key)
            monthly_expense.append(val[0])

    return render_template("limit.html", type="Monthly",expense_data=monthly_expense, y=s)


#Generate Report Today, Monthly, Yearly
def generateReport(report_type):
    if(session.get('id') == None):
        return

    id = str(session['id'])

    total=0
    t_food=0
    t_entertainment=0
    t_business=0
    t_rent=0
    t_EMI=0
    t_other=0
    expense = []
    texpense = []

    if(report_type == 'Today'):
        sql = 'SELECT TIME(date), AMOUNT FROM EXPENSES WHERE USER_ID = {} AND
DATE(date) = DATE(NOW())'.format(id)
        df = pd.read_sql(sql,pd_conn)
        texpense = df.values.tolist()

        sql = 'SELECT * FROM EXPENSES WHERE USER_ID={} AND DATE(DATE) =
(CURRENT_DATE) ORDER BY AMOUNT DESC, DATE DESC'.format(id)
        df = pd.read_sql(sql,pd_conn)
        expense = df.values.tolist()
```

```
    elif(report_type == 'Monthly'):
        sql = 'SELECT DATE(date), SUM(AMOUNT) FROM EXPENSES WHERE USER_ID = {}
AND MONTH(DATE(date)) = MONTH(CURRENT_DATE) GROUP BY DATE(date)'.format(id)
        df = pd.read_sql(sql,pd_conn)
        texpense = df.values.tolist()

        sql = 'SELECT * FROM EXPENSES WHERE USER_ID={} AND MONTH(DATE(DATE)) =
MONTH(CURRENT_DATE) ORDER BY AMOUNT DESC, DATE DESC'.format(id)
        df = pd.read_sql(sql,pd_conn)
        expense = df.values.tolist()

    elif(report_type == 'Yearly'):
        sql = 'SELECT YEAR(date), SUM(AMOUNT) FROM EXPENSES WHERE USER_ID = {}
AND YEAR(DATE(date)) = YEAR(CURRENT_DATE) GROUP BY YEAR(date)'.format(id)
        df = pd.read_sql(sql,pd_conn)
        texpense = df.values.tolist()

        sql = 'SELECT * FROM EXPENSES WHERE USER_ID={} AND YEAR(DATE(DATE)) =
YEAR(CURRENT_DATE) ORDER BY AMOUNT DESC, DATE DESC'.format(id)
        df = pd.read_sql(sql,pd_conn)
        expense = df.values.tolist()


    for x in expense:
        total += x[4]
        if x[6] == "food":
            t_food += x[4]

        elif x[6] == "entertainment":
            t_entertainment  += x[4]

        elif x[6] == "business":
            t_business  += x[4]
        elif x[6] == "rent":
            t_rent  += x[4]

        elif x[6] == "EMI":
            t_EMI  += x[4]

        elif x[6] == "other":
            t_other  += x[4]

    return {'texpense':texpense,'t_food':[t_food],'t_entertainment':[t_entertainment],
                        't_business':[t_business],'t_rent':[t_rent],
```

```
                    't_EMI':[t_EMI],'t_other':[t_other],'total':[total] }



#REPORT
#daily report
@app.route("/today")
def today():
    if(session.get('id') == None):
        return redirect('/')

    rep = generateReport('Today')
    print(rep)
    return render_template("report.html", type="Today", texpense = rep['texpense'],  total =
rep['total'][0] ,
                    t_food = rep['t_food'][0],t_entertainment =  rep['t_entertainment'][0],
                    t_business = rep['t_business'][0],  t_rent =  rep['t_rent'][0],
                    t_EMI = rep['t_EMI'][0],  t_other =  rep['t_other'][0] )


# Monthly report
@app.route("/month")
def month():

    if(session.get('id') == None):
        return redirect('/')

    rep = generateReport('Monthly')
    return render_template("report.html", type="Monthly", texpense = rep['texpense'],  total =
rep['total'][0] ,
                    t_food = rep['t_food'][0],t_entertainment =  rep['t_entertainment'][0],
                    t_business = rep['t_business'][0],  t_rent =  rep['t_rent'][0],
                    t_EMI = rep['t_EMI'][0],  t_other =  rep['t_other'][0] )


# Yearly report
@app.route("/year")
def year():
    if(session.get('id') == None):
        return redirect('/')

    rep = generateReport('Yearly')
    return render_template("report.html", type="Yearly", texpense = rep['texpense'],  total =
rep['total'][0] ,
```

```
                    t_food = rep['t_food'][0],t_entertainment =  rep['t_entertainment'][0],
                    t_business = rep['t_business'][0],  t_rent =  rep['t_rent'][0],
                    t_EMI = rep['t_EMI'][0],  t_other =  rep['t_other'][0] )

#log-out
@app.route('/logout')
def logout():
   session.pop('loggedin', None)
   session.pop('id', None)
   session.pop('username', None)
   return render_template('home.html')


#Download the report as PDF
@app.route('/<report_type>')
def downloadPDF(report_type):
    if(session.get('id') == None):
        return redirect('/')

    rep = generateReport(report_type)
    html = render_template("MailPDF.html", type=report_type, texpense = rep['texpense'],  total =
rep['total'][0] ,
                    t_food = rep['t_food'][0],t_entertainment =  rep['t_entertainment'][0],
                    t_business = rep['t_business'][0],  t_rent =  rep['t_rent'][0],
                    t_EMI = rep['t_EMI'][0],  t_other =  rep['t_other'][0] )

    pdf = pdfkit.from_string(html, False)
    response = make_response(pdf)
    response.headers["Content-Type"] = "application/pdf"
    response.headers["Content-Disposition"] = "inline; filename=output.pdf"

    return response


def mailConfig():
    SENDGRID_API_KEY=
"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"
    MAIL_DEFAULT_SENDER= "sparklingvishnu@gmail.com"

    app.config['SECRET_KEY'] = 'top-secret!'
    app.config['MAIL_SERVER'] = 'smtp.sendgrid.net'
    app.config['MAIL_PORT'] = 587
    app.config['MAIL_USE_TLS'] = True
    app.config['MAIL_USERNAME'] = 'apikey'
```

```
    app.config['MAIL_PASSWORD'] = SENDGRID_API_KEY
    app.config['MAIL_DEFAULT_SENDER'] = MAIL_DEFAULT_SENDER


#Send report via MAIL
@app.route('/mail/<report_type>')
def sendReportMail(report_type):

    if session.get("id")== None or session.get("username") == None:
        return redirect('/')


    mailConfig()
    mail = Mail(app)

    sql = 'SELECT EMAIL FROM REGISTER WHERE USER_ID={}'.format(session['id'])
    df = pd.read_sql(sql,pd_conn)
    row = df.values.tolist()
    msg = Message('Personal Expense Tracker', recipients=[row[0][0]])
    msg.body = report_type + ' Report'


    sql = 'SELECT * FROM EXPENSES WHERE USER_ID={} AND MONTH(DATE(DATE)) =
MONTH(CURRENT_DATE) ORDER BY DATE DESC, AMOUNT'.format(session['id'])
    df = pd.read_sql(sql,pd_conn)
    df.drop(columns=['EXPENSE_ID','USER_ID'],inplace=True)

    rep = generateReport(report_type)
    del rep['texpense']
    df1 = pd.DataFrame(rep)
    df1.rename(columns={"t_food": "Food", "t_entertainment": "Entertainment","t_business":
"Business","t_rent": "Rent","t_EMI": "EMI","t_other":"Other","total":"TOTAL"}, inplace=True)


    html = """\
    <html>
      <head></head>
      <body>
        <p>Hi!<br>
           <b>Monthly Expenses:<b><br>
           {0}
           <br><b>Total Categorized Expenses:<b><br>
           {1}
```

```
        Regards,
      </p>
    </body>
  </html>

  """.format(df.to_html(), df1.to_html())

  msg.html = html
  mail.send(msg)

  print("mail sent successfully")
  flash("Mail sent successfully!")

  rep = generateReport(report_type)
  return render_template("report.html", type=report_type, texpense = rep['texpense'],  total =
rep['total'][0] ,
                    t_food = rep['t_food'][0],t_entertainment =  rep['t_entertainment'][0],
                    t_business = rep['t_business'][0],  t_rent =  rep['t_rent'][0],
                    t_EMI = rep['t_EMI'][0],  t_other =  rep['t_other'][0] )



def sendLimitAlert(exceded_amt):
  if(session.get('id') == None):
    return

  mailConfig()
  mail = Mail(app)


  sql = 'SELECT EMAIL FROM REGISTER WHERE USER_ID={}'.format(session['id'])
  df = pd.read_sql(sql,pd_conn)
  row = df.values.tolist()
  msg = Message('Personal Expense Tracker', recipients=[row[0][0]])
  msg.body = 'Exceeded the Limit!!! You have exceeded by ' + str(exceded_amt)


  sql = 'SELECT * FROM EXPENSES WHERE USER_ID={} AND MONTH(DATE(DATE)) =
MONTH(CURRENT_DATE) ORDER BY DATE DESC, AMOUNT'.format(session['id'])
  df = pd.read_sql(sql,pd_conn)
  df.drop(columns=['EXPENSE_ID','USER_ID'],inplace=True)

  rep = generateReport('Monthly')
  del rep['texpense']
```

```
    df1 = pd.DataFrame(rep)
    df1.rename(columns={"t_food": "Food", "t_entertainment": "Entertainment","t_business":
"Business","t_rent": "Rent","t_EMI": "EMI","t_other":"Other","total":"TOTAL"}, inplace=True)



    html = """\
    <html>
      <head></head>
      <body>
        <p>Exceeded the Limit!!! You have exceeded by  Rs. {0}</p>
        <p>Hi!<br>
           <b>Total Categorized Expenses<b><br>
           {1}
           <br><b>Monthly Expenses:<b><br>
           {2}

           Regards,
        </p>
      </body>
    </html>

    """.format(str(exceded_amt),df1.to_html(), df.to_html())

    msg.html = html
    mail.send(msg)

    print("mail sent successfully")
    flash("Mail sent successfully!")



if __name__ == "__main__":
    app.run(debug=True)
```