Student name	**GAYATHRI**
Team id	**PNT2022TMID41394**
Project name	**Personal expense tracker application.**

SPRINT-4

6. Views.py

- **Importing modules**

```
from django.shortcuts import render,HttpResponse,redirect
from django.contrib import messages
from django.contrib.auth import authenticate ,logout
from django.contrib.auth import login as dj_login
from django.contrib.auth.models import User
from .models import Addmoney_info,UserProfile
from django.contrib.sessions.models import Session
from django.core.paginator import Paginator, EmptyPage , PageNotAnInteger
from django.db.models import Sum
from django.http import JsonResponse
import datetime
from django.utils import timezone
```

Code Explanation:

- Render: It returns the Httpresponse object and combines the template with the dictionary that is mentioned in it.
  - HttpResponse: It displays a text response to the user.
  - Redirect: It redirects the user to the specified url.
  - Messages: It helps to store and display messages to the user on the screen.
  - Authenticate: It verifies the user.
  - User: This model handles authentication as well as authorization.
  - Session: It helps the user to access only their data. Without sessions, every user's data will be displayed to the user.
  - Paginator: It is used to manage paginated data.

- datetime:It is used to get the current date and time.

- **Login and Index function**

```
def home(request):
    if request.session.has_key('is_logged'):
        return redirect('/index')

    return   render(request,'home/login.html')
    # return HttpResponse('This is home')
def index(request):
    if   request.session.has_key('is_logged'):
        user_id   =   request.session["user_id"]
        user = User.objects.get(id=user_id)
        addmoney_info = Addmoney_info.objects.filter(user=user).order_by('-Date')
        paginator = Paginator(addmoney_info , 4)
        page_number = request.GET.get('page')
        page_obj = Paginator.get_page(paginator,page_number)
        context = {
            # 'add_info' : addmoney_info,
            'page_obj' : page_obj
        }
    #if request.session.has_key('is_logged'):
        return render(request,'home/index.html',context)
    return redirect('home')
```

Code Explanation:

home() is a function that allows the user to access the dashboard once the user is logged in. index() function contains the backend of the dashboard page.

- filter(): Queryset is filtered by filter().
- get(): Single unique object can be obtained with get().
- order_by(): It orders the queryset.

- **Other Functions**

```
def addmoney(request):
    return render(request,'home/addmoney.html')

def profile(request):
    if request.session.has_key('is_logged'):
```

```
        return render(request,'home/profile.html')
    return redirect('/home')

def profile_edit(request,id):
    if request.session.has_key('is_logged'):
        add = User.objects.get(id=id)

        return render(request,'home/profile_edit.html',{'add':add})
    return redirect("/home")
```

Code Explanation:

The first function redirects the user to the page where we can enter our expenses and income. profile() function redirects the user to the profile page where information of the user is displayed. profile_edit() redirects to

the page where information of the user can be edited. These pages can only be accessed if the user is logged in.

- **Updating Profile**

```
def profile_update(request,id):
    if request.session.has_key('is_logged'):
        if request.method == "POST":
            user = User.objects.get(id=id)
            user.first_name = request.POST["fname"]
            user.last_name = request.POST["lname"]
            user.email = request.POST["email"]
            user.userprofile.Savings = request.POST["Savings"]
            user.userprofile.income = request.POST["income"]
            user.userprofile.profession = request.POST["profession"]
            user.userprofile.save()
            user.save()
            return redirect("/profile")
    return redirect("/home")
```

Code Explanation:

profile_update() function performs the backend of the edit profile form. User.objects.get() gets all the information of the user then all the updated information is saved again. This function is performed by save().

- **Signup, Login, and Logout backend:**

```
def handleSignup(request):
```

```
   if request.method  =='POST': #
        get the post parameters
        uname = request.POST["uname"]
        fname=request.POST["fname"]
        lname=request.POST["lname"]
        email = request.POST["email"]
        profession = request.POST['profession']
        Savings = request.POST['Savings']
        income = request.POST['income']
        pass1 = request.POST["pass1"]
        pass2 = request.POST["pass2"]
        profile = UserProfile(Savings = Savings,profession=profession,income=income)
        # check for errors in input
        if request.method == 'POST':
           try:
              user_exists = User.objects.get(username=request.POST['uname'])
              messages.error(request," Username already taken, Try something else!!!")
              return redirect("/register")
           except User.DoesNotExist:
              if len(uname)>15:


again")



messages.error(request," Username must be max 15 characters, Please tryreturn

redirect("/register")



              if not uname.isalnum():
                 messages.error(request," Username should only contain letters and
numbers, Please try again")
                 return redirect("/register")

              if pass1 != pass2:
                 messages.error(request," Password do not match, Please try again")
                 return redirect("/register")

        # create the user
        user = User.objects.create_user(uname, email, pass1)
        user.first_name=fname
```

```
            user.last_name=lname
            user.email = email
            # profile = UserProfile.objects.all()

            user.save()
            # p1=profile.save(commit=False)
            profile.user = user
            profile.save()
            messages.success(request," Your account has been successfully created")
            return redirect("/")
    else:
        return HttpResponse('404 - NOT FOUND ')
    return redirect('/login')

def handlelogin(request):
    if request.method =='POST':
        # get the post parameters
        loginuname = request.POST["loginuname"]
        loginpassword1=request.POST["loginpassword1"]
        user = authenticate(username=loginuname, password=loginpassword1)
        if user is not None:
            dj_login(request, user)
            request.session['is_logged'] = True
            user = request.user.id
            request.session["user_id"] = user
            messages.success(request, " Successfully logged in")
            return redirect('/index')
        else:
            messages.error(request," Invalid Credentials, Please try again")
            return redirect("/")
    return HttpResponse('404-not found')
def handleLogout(request):
        del request.session['is_logged']


        del request.session["user_id"]
        logout(request)
        messages.success(request, " Successfully logged out")
        return redirect('home')
```

Code Explanation:

handlesignup() function handles the backend of signup form. Uname, fname, lname, email , pass1, pass2, income, savings and profession will store the information of the form in these variables.

Various conditions are there to sign up . The username should be unique, pass1 and pass 2 should be the same and also the length of the username should be maximum 15 characters. handlelogin() handles the backend of the login page. If the information entered by the user is correct, the user will be redirected to the dashboard. handleLogout() handles the backend oflogout.

- error(): This function gives the error message on the screen if a condition is not satisfied.
- len():This function returns the length of the string, array, dictionary etc.
- success():If a condition is satisfied, it displays the message that is specified in the parentheses.
- **Add Money Form and Add Money Update Backend:**

```
def addmoney_submission(request):
    if request.session.has_key('is_logged'):
        if request.method == "POST":
            user_id = request.session["user_id"]
            user1 = User.objects.get(id=user_id)
            addmoney_info1 =
Addmoney_info.objects.filter(user=user1).order_by('-Date')
            add_money = request.POST["add_money"]
            quantity = request.POST["quantity"]
            Date = request.POST["Date"]
            Category = request.POST["Category"]
            add = Addmoney_info(user =
user1,add_money=add_money,quantity=quantity,Date = Date,Category=
Category)

            add.save()
            paginator = Paginator(addmoney_info1, 4)
            page_number = request.GET.get('page')
```

```
        page_obj = Paginator.get_page(paginator,page_number)
        context = {
           'page_obj' : page_obj
           }
        return render(request,'home/index.html',context)
   return redirect('/index')
def addmoney_update(request,id):
   if request.session.has_key('is_logged'):
      if request.method == "POST":
        add  = Addmoney_info.objects.get(id=id)
        add .add_money = request.POST["add_money"]
        add.quantity = request.POST["quantity"]
        add.Date = request.POST["Date"]
        add.Category = request.POST["Category"]
        add .save()
        return redirect("/index")
   return redirect("/home")
```

Code Explanation:

addmoney_submission() handles the backend of the form we filled for our daily expenses. addmoney_update() saves the information of the form after we have edited .

- **Expense Edit and Expense Delete Backend:**

```
def expense_edit(request,id):
   if request.session.has_key('is_logged'): addmoney_info
      = Addmoney_info.objects.get(id=id)user_id =
      request.session["user_id"]
      user1 = User.objects.get(id=user_id)
```

```
    return
render(request,'home/expense_edit.html',{'addmoney_info':addmoney_info})
  return redirect("/home")

def expense_delete(request,id):
  if request.session.has_key('is_logged'): addmoney_info
    = Addmoney_info.objects.get(id=id)
    addmoney_info.delete()
    return redirect("/index")
  return redirect("/home")
```

Code Explanation:

expense_edit() form redirects the user to the edit form and also extracts the details of the user from the database and displays it on the screen.
expense_delete() helps in deleting the expenses.

- **Monthly, weekly , yearly expense Backend**

```
def expense_month(request):
  todays_date = datetime.date.today()
  one_month_ago = todays_date-datetime.timedelta(days=30)
  user_id = request.session["user_id"]
  user1 = User.objects.get(id=user_id)
  addmoney = Addmoney_info.objects.filter(user =
user1,Date_gte=one_month_ago,Date_lte=todays_date)
  finalrep ={}

  def get_Category(addmoney_info):
    # if addmoney_info.add_money=="Expense":
    return addmoney_info.Category
  Category_list = list(set(map(get_Category,addmoney)))

  def get_expense_category_amount(Category,add_money):
    quantity = 0
    filtered_by_category = addmoney.filter(Category = Category,add_money="Expense")
    for item in filtered_by_category:
      quantity+=item.quantity
    return quantity

  for x in addmoney:
    for y in Category_list:
      finalrep[y]= get_expense_category_amount(y,"Expense")
```

```
    return JsonResponse({'expense_category_data': finalrep}, safe=False)


def stats(request):
    if request.session.has_key('is_logged') :
        todays_date = datetime.date.today()

        one_month_ago = todays_date-datetime.timedelta(days=30)
        user_id = request.session["user_id"]
        user1 = User.objects.get(id=user_id)
        addmoney_info = Addmoney_info.objects.filter(user =
user1,Date_gte=one_month_ago,Date_lte=todays_date)
        sum = 0
        for i in addmoney_info:
            if i.add_money == 'Expense':
                sum=sum+i.quantity
        addmoney_info.sum = sum
        sum1 = 0
        for i in addmoney_info:
            if i.add_money == 'Income':
                sum1 =sum1+i.quantity
        addmoney_info.sum1 = sum1
        x=  user1.userprofile.Savings+addmoney_info.sum1  -  addmoney_info.sum
        y=  user1.userprofile.Savings+addmoney_info.sum1  -  addmoney_info.sum
        if x<0:
            messages.warning(request,'Your expenses exceeded your savings')
            x = 0
          if x>0:
              y = 0
        addmoney_info.x = abs(x)
        addmoney_info.y = abs(y)
        return render(request,'home/stats.html',{'addmoney':addmoney_info})

def expense_week(request):
    todays_date = datetime.date.today()
    one_week_ago = todays_date-datetime.timedelta(days=7)
    user_id = request.session["user_id"]
    user1 = User.objects.get(id=user_id)
    addmoney = Addmoney_info.objects.filter(user =
user1,Date_gte=one_week_ago,Date_lte=todays_date)
    finalrep ={}

    def get_Category(addmoney_info):
        return addmoney_info.Category
```

```
    Category_list = list(set(map(get_Category,addmoney)))


    def get_expense_category_amount(Category,add_money):
        quantity = 0
        filtered_by_category = addmoney.filter(Category = Category,add_money="Expense")
        for item in filtered_by_category:
            quantity+=item.quantity
        return quantity

    for x in addmoney:
        for y in Category_list:


            finalrep[y]= get_expense_category_amount(y,"Expense")
    return JsonResponse({'expense_category_data': finalrep}, safe=False)

def weekly(request):

     if request.session.has_key('is_logged') :
         todays_date = datetime.date.today()
        one_week_ago = todays_date-datetime.timedelta(days=7)
        user_id = request.session["user_id"]
        user1 = User.objects.get(id=user_id)
        addmoney_info = Addmoney_info.objects.filter(user =
user1,Date_gte=one_week_ago,Date_lte=todays_date)
        sum = 0
        for i in addmoney_info:
            if i.add_money == 'Expense':
                sum=sum+i.quantity
        addmoney_info.sum = sum
        sum1 = 0
        for i in addmoney_info:
            if i.add_money == 'Income':
                sum1 =sum1+i.quantity
        addmoney_info.sum1 = sum1
        x=  user1.userprofile.Savings+addmoney_info.sum1  -  addmoney_info.sum
        y=  user1.userprofile.Savings+addmoney_info.sum1  -  addmoney_info.sum
        if x<0:
            messages.warning(request,'Your expenses exceeded your savings')
            x = 0
         if x>0:
             y = 0
```

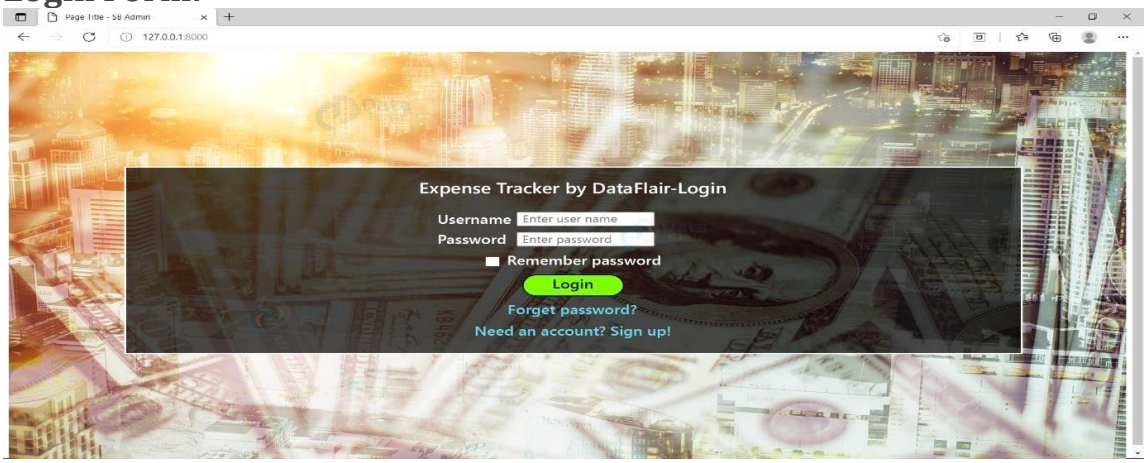
```
        addmoney_info.x = abs(x)
        addmoney_info.y = abs(y)
    return render(request,'home/weekly.html',{'addmoney_info':addmoney_info})

def check(request):
    if request.method == 'POST':
        user_exists  =  User.objects.filter(email=request.POST['email'])
        messages.error(request,"Email not registered, TRY AGAIN!!!")
        return redirect("/reset_password")

def info_year(request):
    todays_date = datetime.date.today()
    one_week_ago = todays_date-datetime.timedelta(days=30*12)
    user_id = request.session["user_id"]
    user1 = User.objects.get(id=user_id)
    addmoney = Addmoney_info.objects.filter(user =
user1,Date_gte=one_week_ago,Date_lte=todays_date)
    finalrep ={}

    def get_Category(addmoney_info):

        return addmoney_info.Category
    Category_list = list(set(map(get_Category,addmoney)))


    def get_expense_category_amount(Category,add_money):
        quantity = 0
        filtered_by_category = addmoney.filter(Category = Category,add_money="Expense")
        for item in filtered_by_category:
            quantity+=item.quantity
        return quantity

    for x in addmoney:
        for y in Category_list:
            finalrep[y]= get_expense_category_amount(y,"Expense")
    return JsonResponse({'expense_category_data': finalrep}, safe=False)


def info(request):


    return render(request,'home/info.html')
```

Code Explanation:

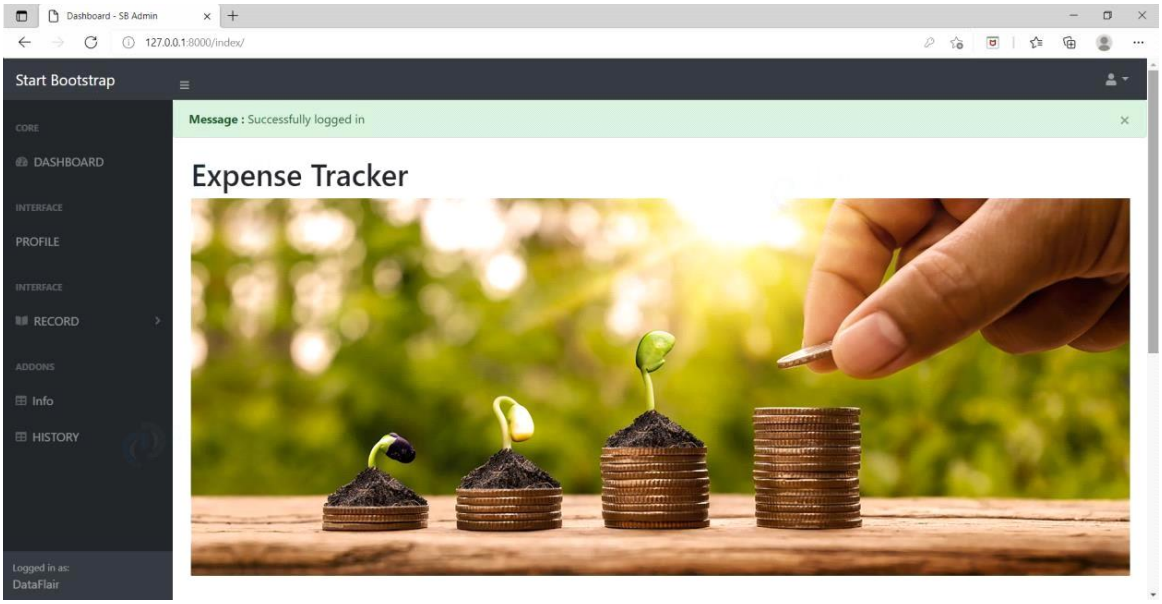
expense_month() function gets the data of the expenses of the current month. get_category() function gets the category (expense/income) from the database. get_expense_category_amount() fetches the amount from the database of the category(expense). stats() function calculates the overall expenses and savings made by the user in a month. expense_week() and info_year() performs the same function as expense_month() but on a weekly basis. weekly() gets the amount saved in a month and also the overall expenses of a user.

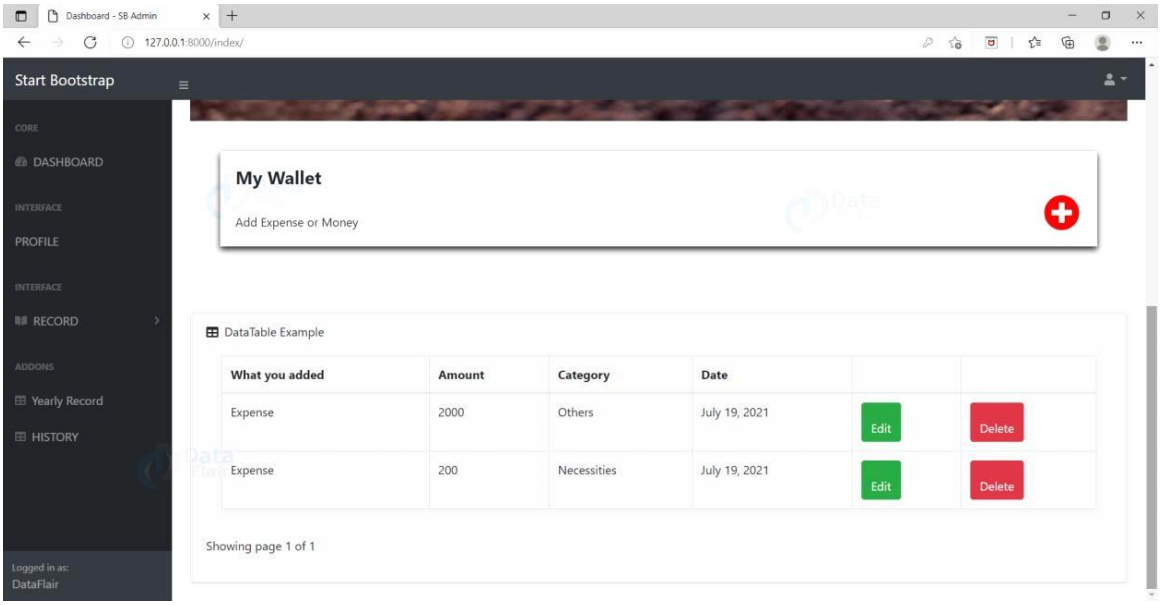
Python Expense Tracker Output:

Login Form:

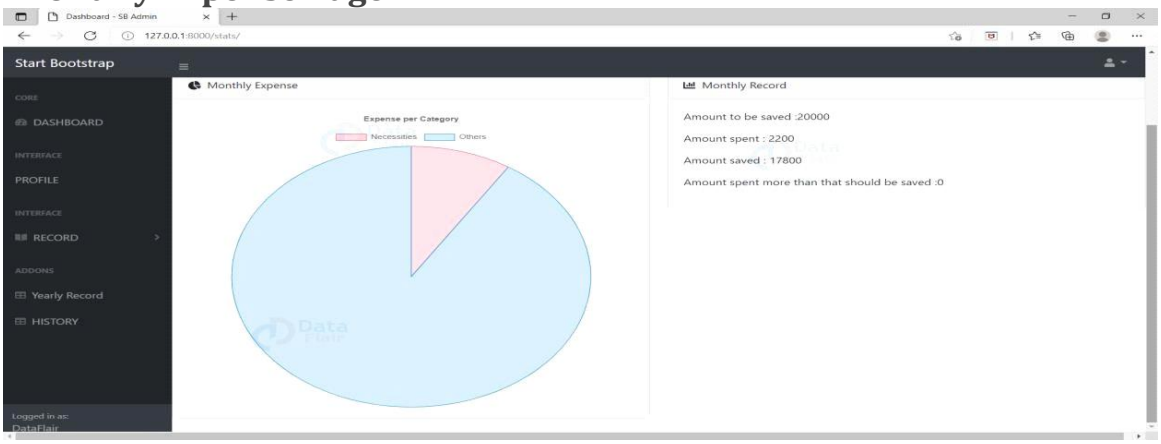


Dashboard:

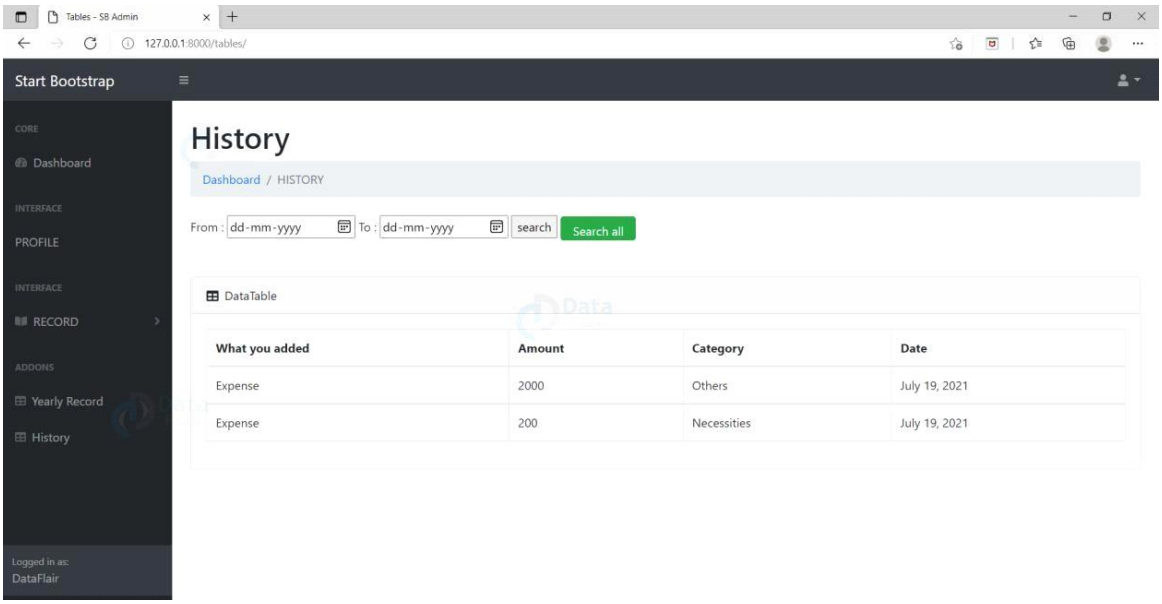




Monthly Expense Page:



History Page:



Summary

We have successfully created the expense tracker project in python. We learned a variety of concepts while making this project.