



**UNIVERSITATEA
TEHNICĂ
DIN CLUJ-NAPOCA**

Personal expense tracker

Inginerie Software

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FACULTATEA DE AUTOMATICA
SI CALCULATOARE

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1 State diagram

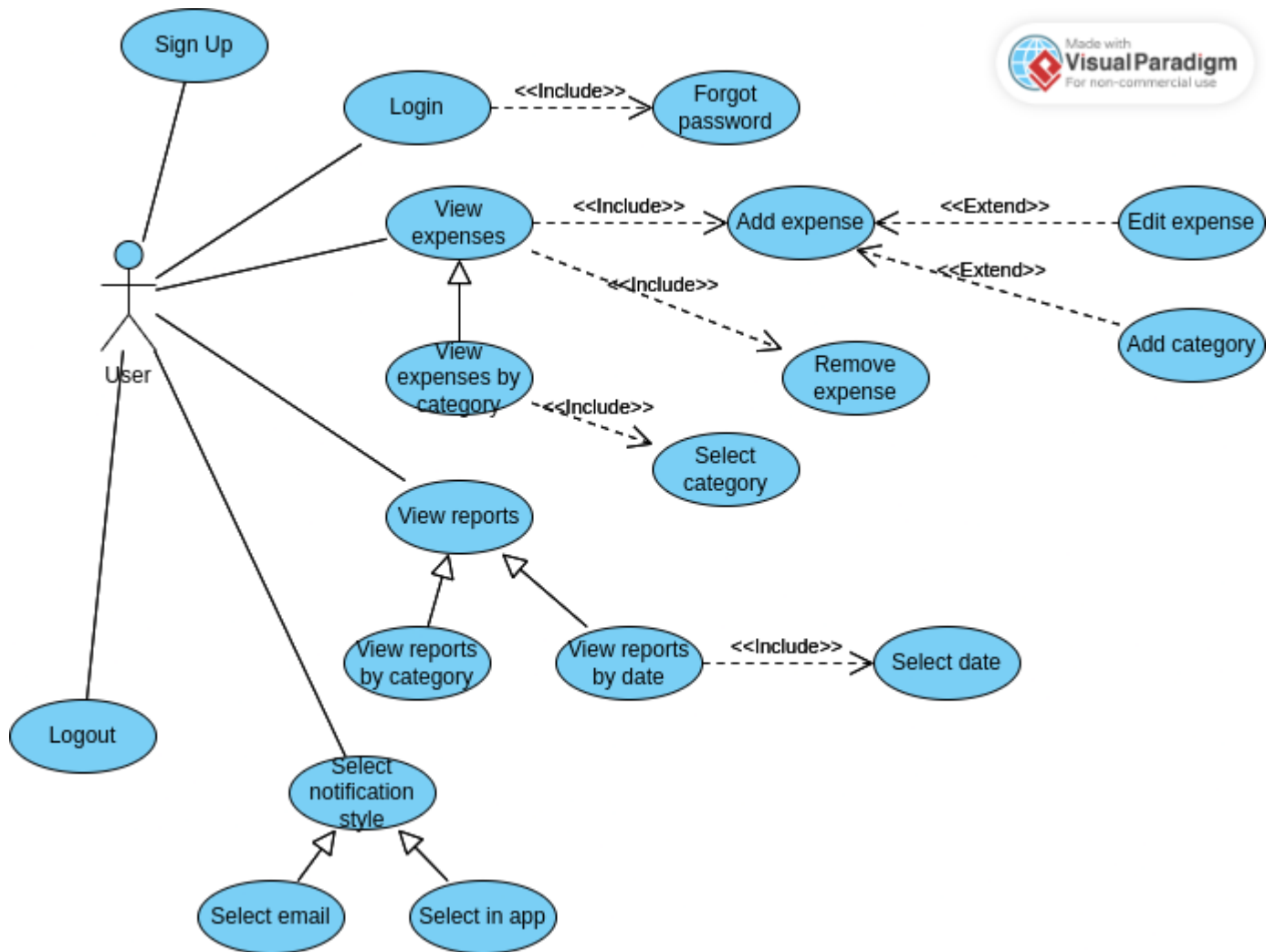


Figura 1: Diagrama de stari a proiectului

2 State Diagram pentru Frontend

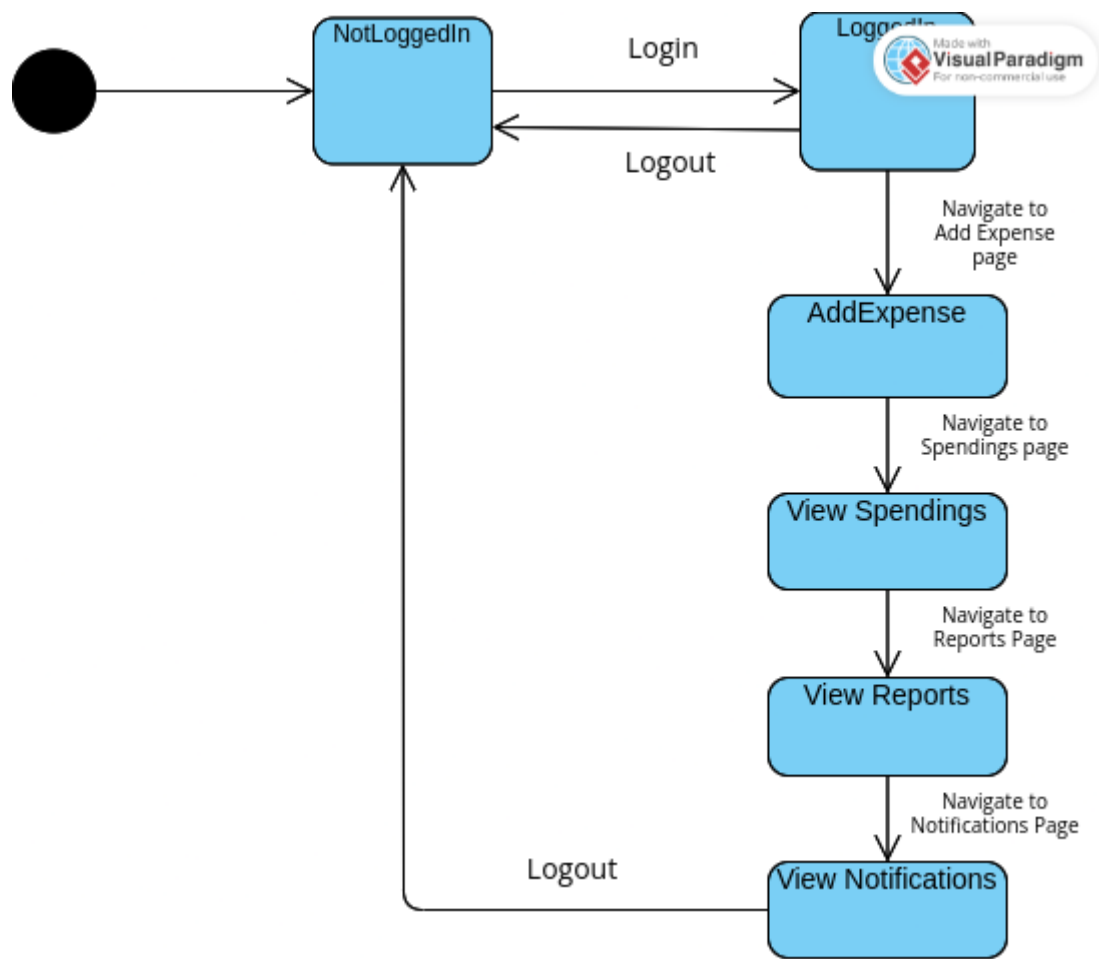


Figura 2: Diagrama de stari pentru FrontEnd

3 Diagrama pentru Design Pattern Factory Method pentru Custom Expenses

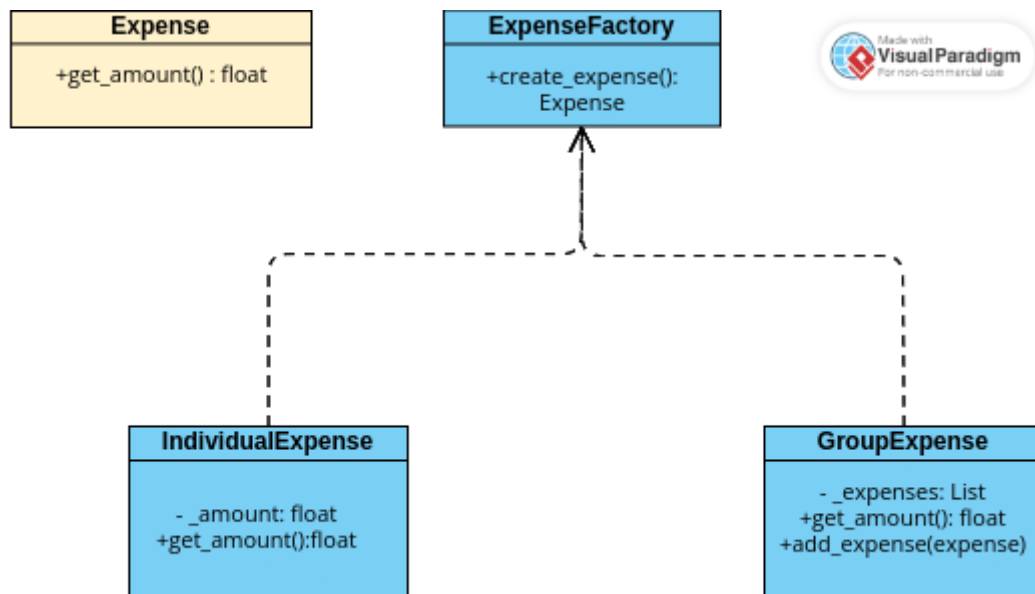


Figura 3: Diagrama Factory Method

4 Sequence Diagram pentru Login

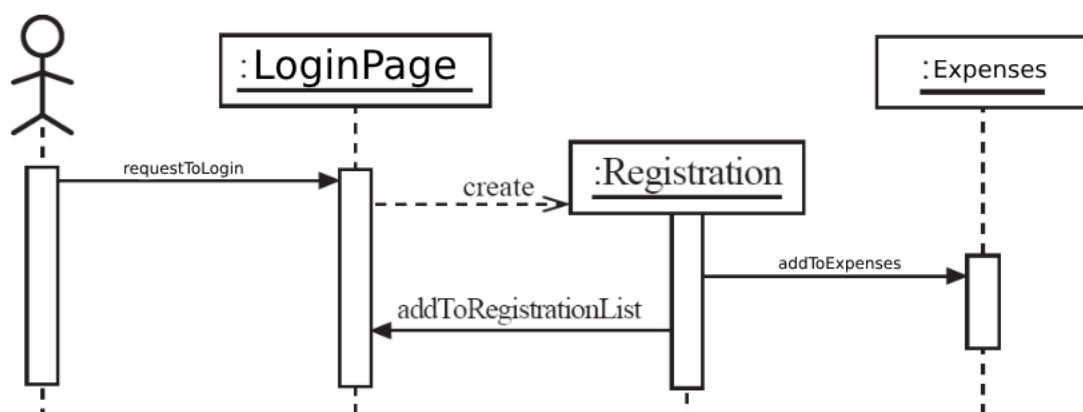


Figura 4: Diagrama Sequence

5 Diagrama pentru Design Pattern Command pentru Add Expense

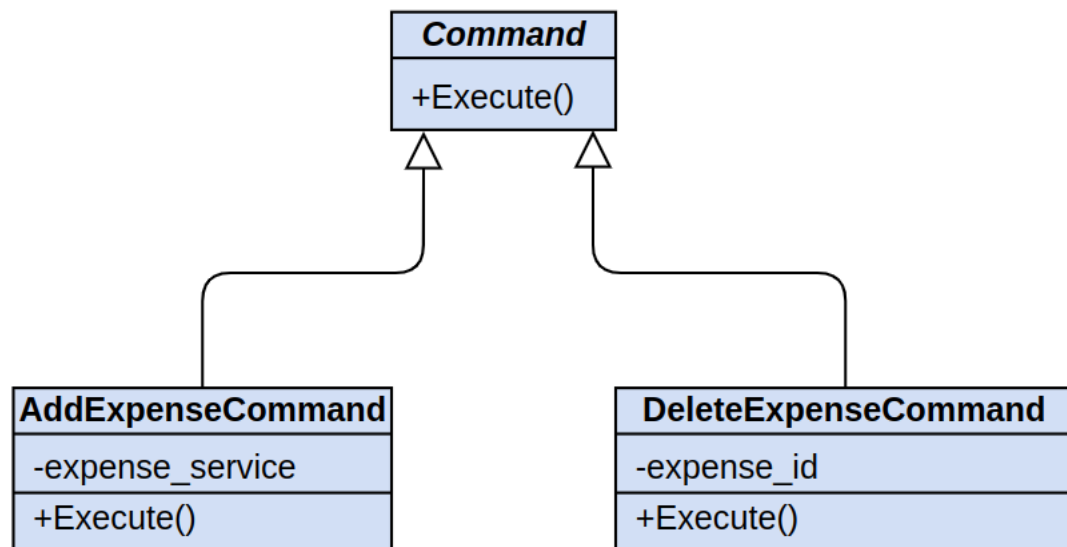


Figura 5: Diagrama Command

6 Communication Diagram pentru Sales page

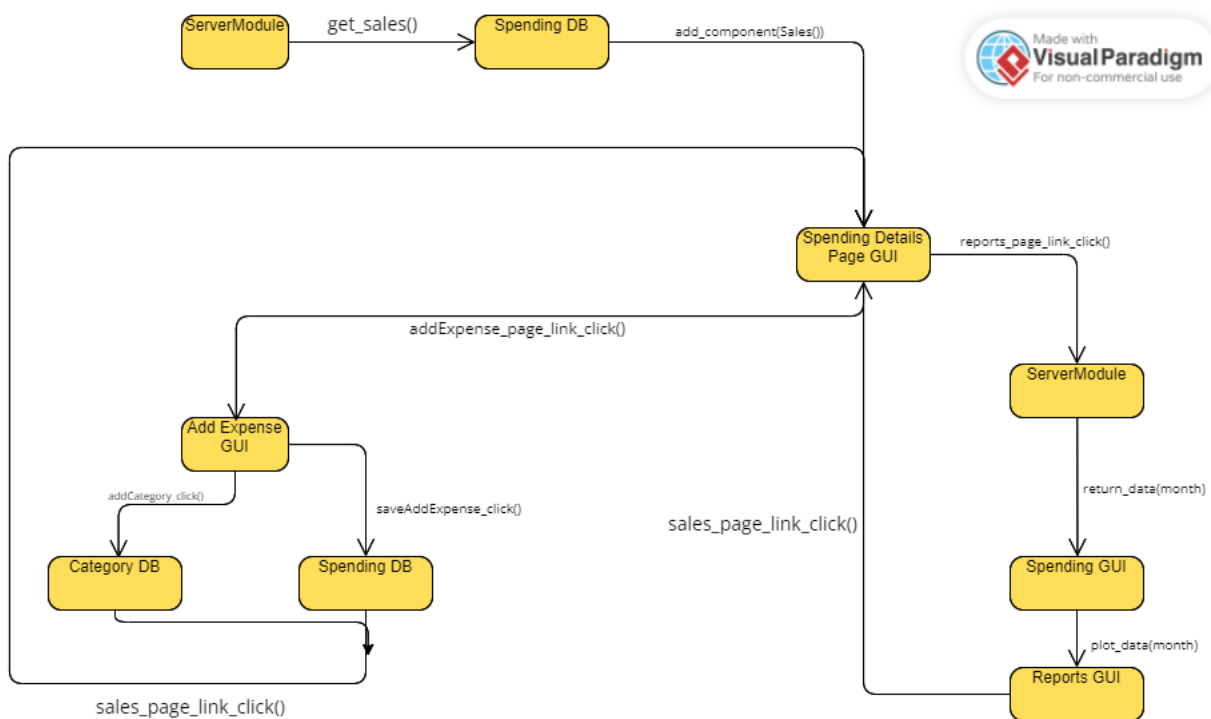


Figura 6: Diagrama Communication

7 Diagrama pentru Design Pattern Chain Of Responsibility pentru Reports

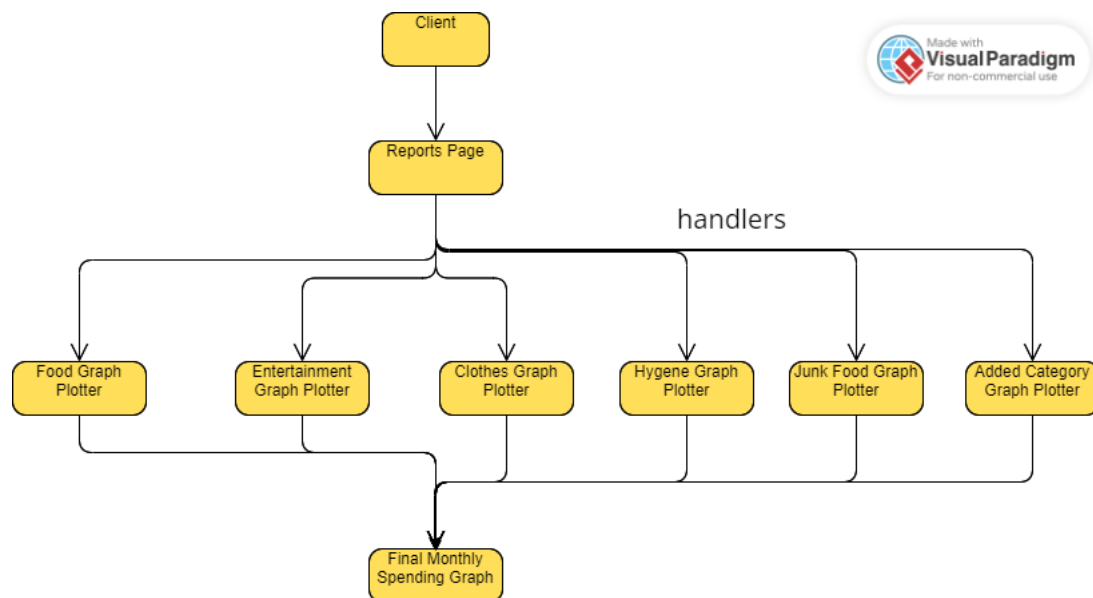


Figura 7: Diagrama Chain Of Responsibility

8 Limbaje si tehnologii utilizate

- Python
- Anvil Framework
- Anvil Databases
- Adobe Photoshop
- Adobe Illustrator

9 Rezumat

Aplicatia Personal Expense Tracker este o unealta in care utilizatorii isi pot stoca cheltuielile zilnice. Am implementat functionalitati precum:

- Adaugare cheltuiala
- Adaugare categorie custom pentru anumite tipuri de cheltuieli
- Estimare a cheltuielilor lunare
- Vizualizarea cheltuielilor dupa nume, suma cheltuita, categorie si data
- Vizualizarea evolutiei cheltuielilor lunar, sub forma de grafic impartit pe saptamani
- Vizualizarea unor grafice comparative pe categorii
- Posibilitatea de a primi notificari prin email

Pentru a folosi aplicatia utilizatorii se vor loga prin email si parola. Datele fiecarui utilizator se vor gestiona intr-o baza de date accesibila doar administratorilor.

10 Baze de date

- Categories Database

Name	Owner	
Food	None	
Entertainment	None	
Clothes	None	
Hygiene	None	
Junk Food	None	
Vices	None	
Travel	dumbog@yahoo.com	
Bills	kmvely2@gmail.com	

Figura 8: Categories Database

- Spending Database

Name	Price	Date	owner	category	
Piept de pul	25	30 Dec 2023	prowhite9@gmail.com	Food	
GTA Vice City Definitive Edition	150	25 Dec 2023	prowhite9@gmail.com	Entertainment	
Sushi	25	04 Jan 2024	kmvely2@gmail.com	Food	
Factura Vodafone	120	06 Dec 2023	kmvely2@gmail.com	Bills	
Colgate Charcoal	14	17 Nov 2023	kmvely2@gmail.com	Hygiene	
Nokia iPhone II - Kuroni	55	13 Oct 2023	kmvely2@gmail.com	Entertainment	

Figura 9: Spending Database

- Users Database

email	enabled	last_login	password_hash	n_password_failures	confirmed_email	signed_up	name
brooke@anvil.works	<input checked="" type="checkbox"/>	07 Jun 2023, 10:19:25.092 +00:00	\$2a\$10\$SwqQ6AFB2uMSE357rAK6GMSm...	0	None	30 May 2023, 14:27:59.138 +00:00	Brooke
patricia@anvil.works	<input checked="" type="checkbox"/>	30 May 2023, 14:31:35.162 +00:00	\$2a\$10\$mhY670iH0DduCEkx5pNzurfW9...	0	None	30 May 2023, 14:31:01.570 +00:00	Patricia
ryan@anvil.works	<input checked="" type="checkbox"/>	30 May 2023, 14:32:50.168 +00:00	\$2a\$10\$7HfQ7wmTQKtaoigda0R6M04WYc...	0	None	30 May 2023, 14:32:50.161 +00:00	Ryan
kmvely2@gmail.com	<input checked="" type="checkbox"/>	07 Jan 2024, 11:55:29.387 +00:00	\$2a\$10\$WdWNV0X8SbD639S/2s_oP8ZD/kgP...	0	<input checked="" type="checkbox"/>	13 Nov 2023, 06:40:15.307 +00:00	None
prowhite9@gmail.com	<input checked="" type="checkbox"/>	07 Jan 2024, 11:55:24.003 +00:00	\$2a\$10\$VpZu7TPOptR4Suh4Gepeu8Uzhux...	0	<input checked="" type="checkbox"/>	13 Nov 2023, 15:54:38.419 +00:00	None
dumbog@yahoo.com	<input checked="" type="checkbox"/>	05 Jan 2024, 22:42:20.536 +00:00	\$2a\$10\$250acvzThvblukofJMcOCqg0B90Gh...	0	<input checked="" type="checkbox"/>	15 Nov 2023, 18:12:23.251 +00:00	None
abcd@yahoo.com	<input checked="" type="checkbox"/>	20 Nov 2023, 07:40:44.324 +00:00	\$2a\$10\$9MhuWb5y2jC1wFvS_zqG0HLM9...	0	<input checked="" type="checkbox"/>	20 Nov 2023, 07:39:55.016 +00:00	None

Figura 10: Users Database

11 Design Patterns

11.1 Chain of Responsibility

Chain of Responsibility este un pattern comportamental care transmite cereri dealungul unui lant de handler. Cand se primeste o cerere, fiecare handler decide daca sa proceseze cererea sau sa o paseze la alt handler in lantul acestuia.

11.1.1 Code Snippet

```
1  def foodHandler(self, currMonth, currYear):
2      rez = [], [], []
3
4      string_to_int = {
5          "January": 1,
6          "February": 2,
7          "March": 3,
8          "April": 4,
9          "May": 5,
10         "June": 6,
11         "July": 7,
12         "August": 8,
13         "September": 9,
14         "October": 10,
15         "November": 11,
16         "December": 12,
17     }
18
19     rezMonth = []
20     rezYear = []
21
22     for i in range(0, 5): # Exclude the current month
23         # Calculate the month and year for each of the 3 months before the
24         # current month
25         past_month = (currMonth - i) % 12 or 12
26         rezMonth.append(past_month)
27         if currMonth > 5 :
28             past_year = currYear
29         else:
30             past_year = currYear - 1 if past_month in (8, 9, 10, 11, 12) else currYear
31         rezYear.append(past_year)
32
33     ## past_month = (current_month - i) % 12 or 12
34     for i in range(0, 5):
35         rez[0].append(rezMonth[i])
36
37     for i in range(0, 5):
38         rez[1].append(self.costCategoriePerLuna(rezMonth[i], rezYear[i], "Food"))
39
```

```
40     rez[0].reverse()
41     rez[1].reverse()
42     rez[2].append("Food")
43
44     return rez
```

12 User Manual

12.1 Login Page

Apasati pe butonul "Sign In" si va va apareea o fereastră in care sunteti rugati sa introduceti adresa de email si parola. In cazul in care nu aveti cont veti apasa pe "Sign up for a new account" unde va puteti crea un cont personal. In cazul in care v-ati uitat parola puteti apasa pe butonul "Forgot your password?" unde se va introduce adresa de email a unui cont valid pentru a primi pe email un link de resetare a parolei. Cand aveti toate credentialele in regula, le puteti introduce si apasa pe butonul de "Log in" care va va aduce pe pagina principala a aplicatiei.

Build web apps for free with Anvil Built with 



You have been signed out!

[SIGN IN](#)

Powered by  PyTeam

Figura 11: Login Page

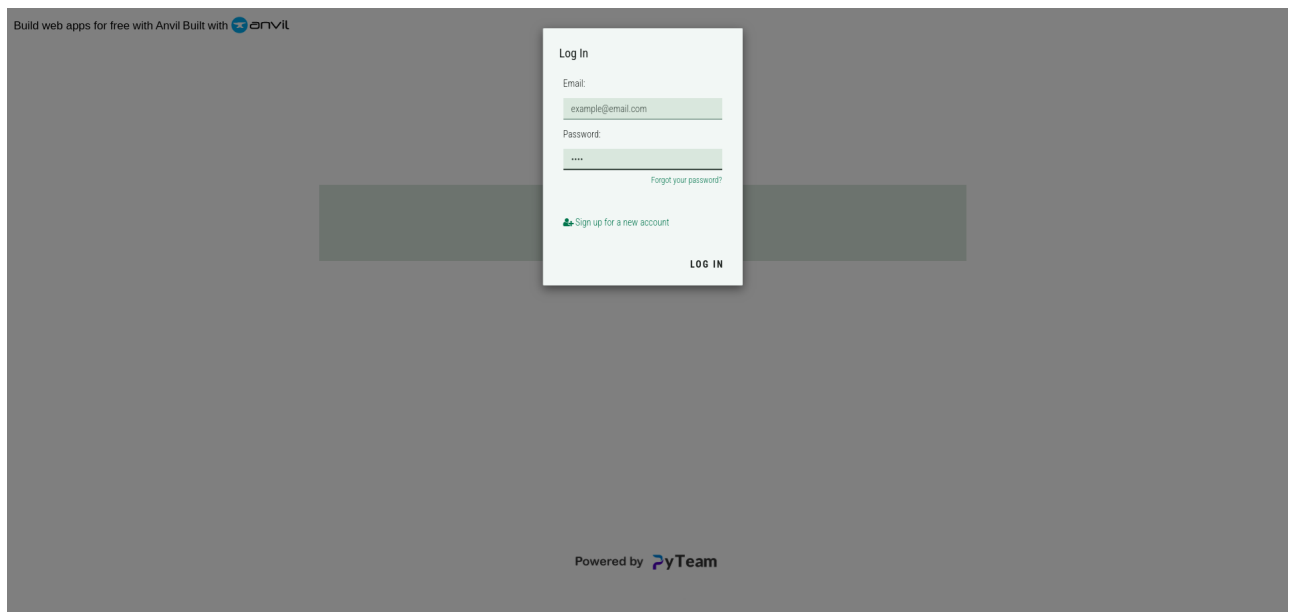


Figura 12: Login Pop-Up



Figura 13: Sign Up Pop-Up

12.2 Spending - Pagina principala

In aceasta pagina puteti vizualiza mai multe date cu privire la cheltuielile dumneavoastra. Puteti observa urmatoarele:

- "Current Spendings" - aici vi se va afisa suma cheltuita in luna curenta
- "Estimated Monthly Spending" - aici veti vedea o estimare pentru luna curenta bazata pe cheltuielile anterioare
- "Categories" - aici este un tabel cu toate cheltuielile dumneavoastra inregistrate in aplicatie (Nume produs/serviciu, Pret, Categorie, Data)

- "Spendings Overview" - aici este un grafic care va arata evolutia fiecarei caterogii din fiecare luna. Tot aici puteti selecta orice luna din anul curent

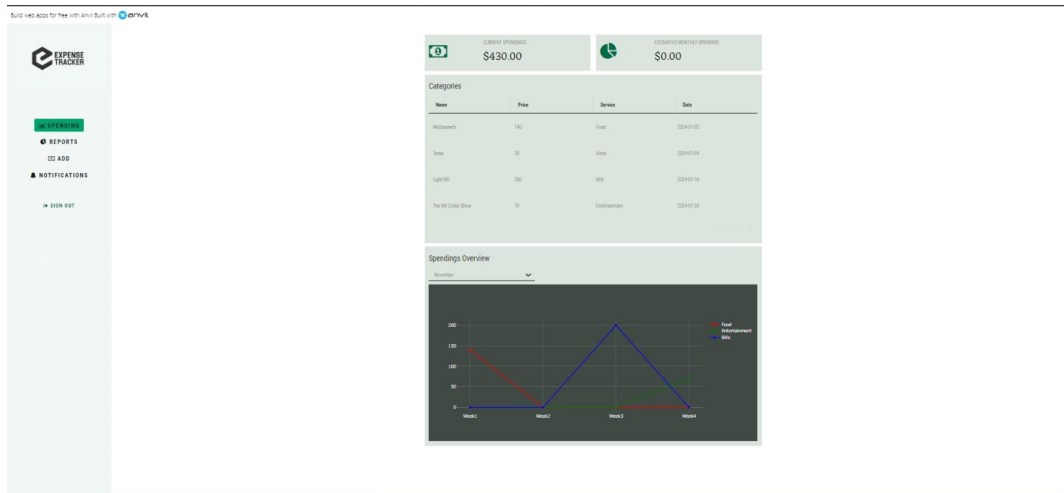


Figura 14: Spending Page

12.3 Reports

Pe pagina Reports, se pot observa urmatoarele:

- "Current Spendings" si "Estimated Spendings" - functionalitate identica cu cele din pagina Spending
- "Compare last months spendings!" - aici este un Bar Chart care compara cheltuielile de la 3 categorii default, Food, Entertainment si Bills; se pot accesa aceleasi cheltuieli din ultimele luni spre a fi comparate
- "Monthly Comparison by Category" - aici este un alt Bar Chart, care de data aceasta compara cheltuielile fiecarei categorii default cu cea de luna precedenta, oferind sprijin vizual asupra comparatiilor de la luna la luna
- "Most Expensive Category" - aici este un Pie Chart, care arata in care categorii s-a cheltuit cel mai mult, fiind mai usor de citit

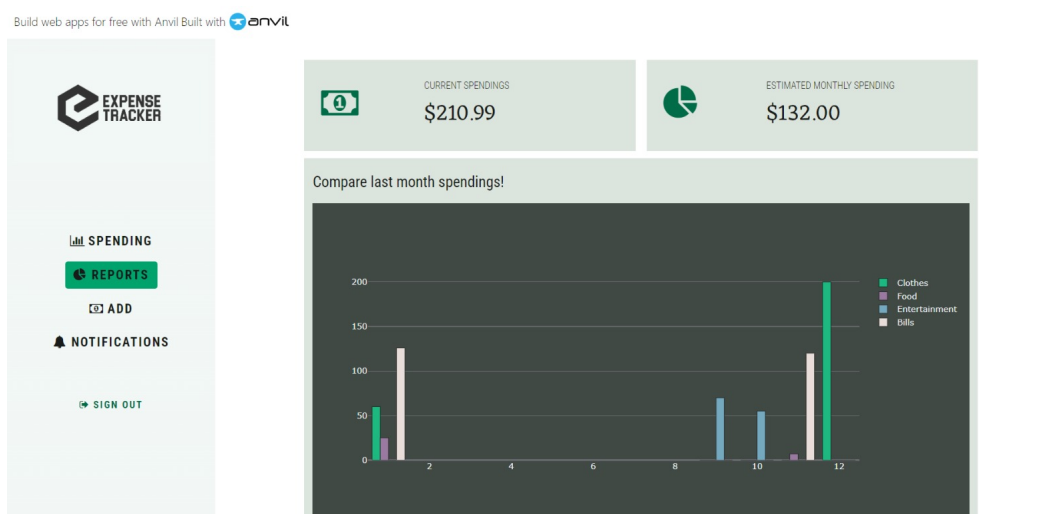


Figura 15: Reports Page - Compare last month spendings

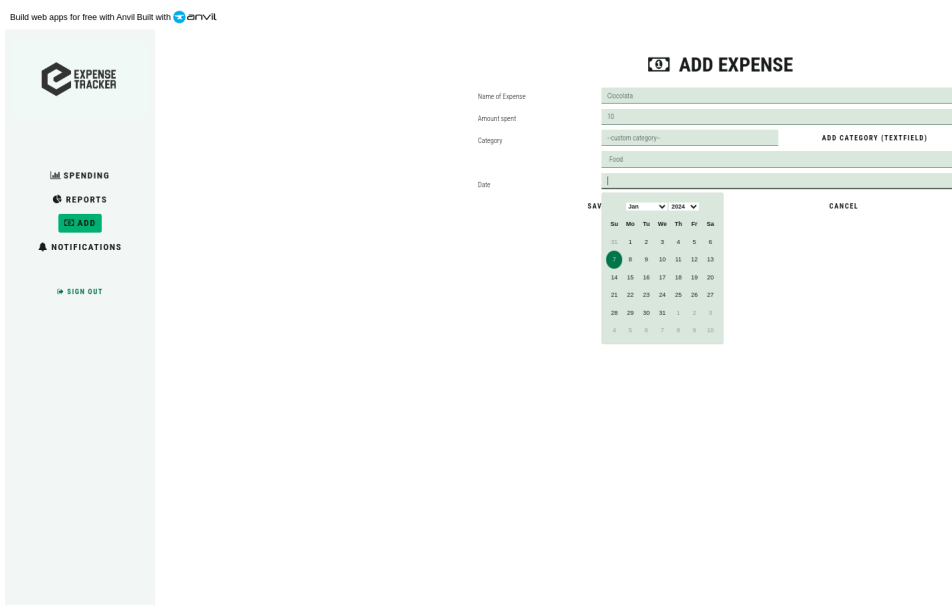


Figura 16: Reports Page

12.4 Add Page

In aceasta pagina care poate fi accesata din panoul din stanga dand click pe butonul "Add", puteti adauga orice cheltuiala astfel:

- "Name of Expense" - aici introduceti numele unui produs sau serviciu pe care l-ati achizitionat
- "Amount spent" - aici introduceti pretul platit
- "Category" - aici puteti selecta din categoriile prestabilite sau daca nu gasiti o categorie anume, puteti sa va creati una personalizata dand click pe "Add Category" dupa ce ati scris numele categoriei dorite
- "Date" - aici puteti selecta data cand a avut loc tranzactia
- "Save" - pentru a putea fi inregistrata de aplicatie trebuie apasat pe butonul "Save" iar apoi va puteti vedea tranzactia in pagina principala "Spending"



The image shows the 'ADD EXPENSE' form in the 'EXPENSE TRACKER' application. The sidebar on the left is identical to the previous figure. The main form has the following fields: 'Name of Expense' (text input with 'Coccolita'), 'Amount spent' (text input with '10'), 'Category' (dropdown menu with 'Food' selected and an 'ADD CATEGORY (TEXTFIELD)' button), and 'Date' (calendar picker showing January 2024 with the 7th selected). At the bottom are 'SAVE' and 'CANCEL' buttons.

Figura 17: Add Page

12.5 Notifications

In aceasta pagina puteti sa alegeti daca doriti notificari prin email sau nu. Dupa ce v-ati ales daca doriti sau nu notificari, apasati butonul "Save" pentru a se salva alegerea dorita. Notificarile pot fi oprite si pornite ori de cate ori doriti. Notificarile prin email sunt oprite "by default".

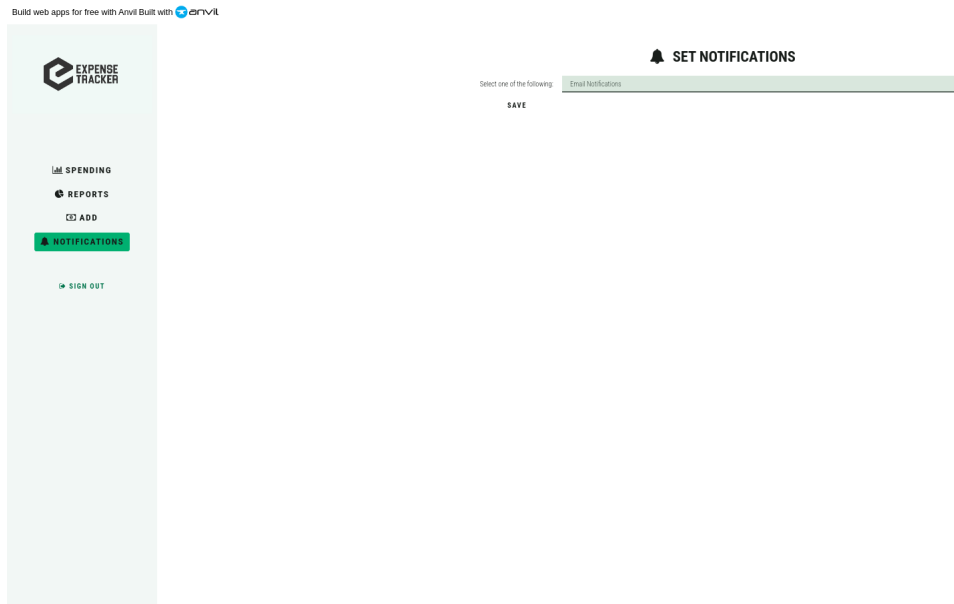


Figura 18: Notifications Page

12.6 Sign Out

Acesta este butonul regasit in panoul din stanga care odata apasat va va deloga din aplicatie, astfel revenind la "Login Page".

13 Link catre aplicatie

<https://personalexpensetracker.anvil.app/>

14 Link catre git repository

<https://github.com/pyteamutcn/expense-tracker-utcn>