

# BudgetHack

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**EXPENSES TRACK & SPLIT SYSTEM**

Ironhack, Data Analysis Bootcamp

Final Project - Pedro G. Afonso

30 March, 2024

## WHAT IT IS

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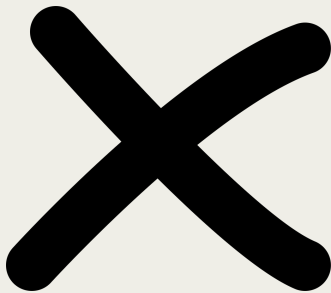
Personal expense tracker and  
smart-expense splitting system  
through integration of  
**OCR** and **AI** technologies.



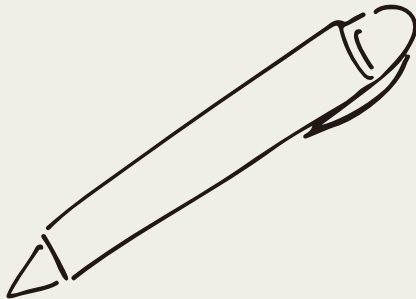
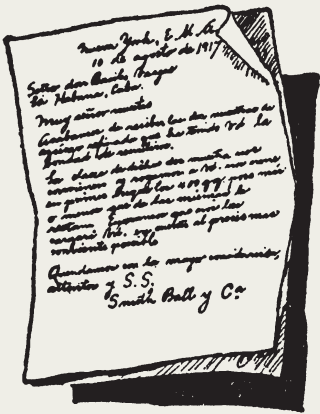
# ADVANTAGES

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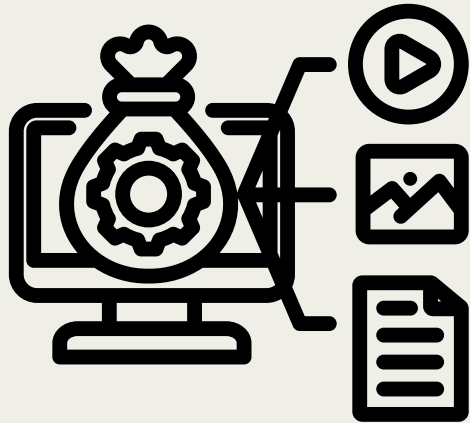
No manual  
input



Automatic data  
extraction from  
both printed or  
handwritten  
bill images



Automatic  
categorization

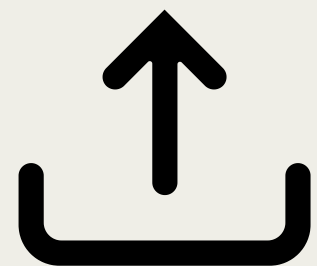


# HOW IT WORKS

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## *Upload* **01**

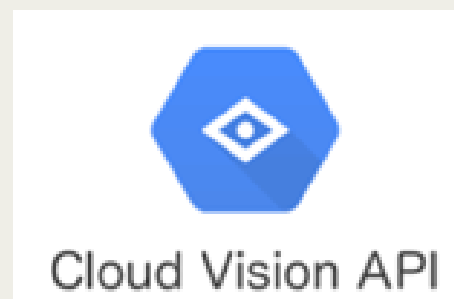
Users **upload** their printed or handwritten bills in common image formats like jpg, png, or pdf to the system



## *OCR* **02**

### **Optical Character Recognition:**

The system utilizes OCR technology (Cloud Vision) to extract text from the uploaded images



## *AI* **03**

**Data Processing by AI:** Once the text is extracted, the system utilizes OpenAI to filter and interpret the relevant data such as type, amount, date and location.



## *Output* **04**

The system provides **visualizations** of the expenses by type, allowing users to see a breakdown of their spending habits. Additionally, the system calculates the optimal way to **split expenses** among group members, minimizing the number of transactions.



EXAMPLE

Smack-Bar  
Sweet Drop

23/3/2024

1 Prato	5 €
1 Bebida	1 €
1 Sobremesa	1,20 €
<hr/>	
TOTAL	7,20 €



LAR DOCE LAR

06-Out-13  
17:00

\*.F-28\*

1º Balcão Central  
UAU 3 TEATRO, LDA. - 507402278

PREÇO 12,00 €  
IVA Incluído 13%

Lugar


Data

LAR DOCE LAR

06-Out-2013 17:00  
1º Balcão Central .F.28  
12,00 €  
06-Out-2013 15:19 59204918 5222 1  
06-Out-2013 15:19 ORIGINAL 1/1

  
1 110285 092429 2 1327530 012005

Rede expressos

  
NIF: 503508225 / Cap.Social: € 249.387,95 / Cont. 6057  
ESTRADA DAS LARANJEIRAS 1500-473 LISBOA

De : LISBOA (1)

Para: NAZARE (418)

2009-08-02

Bilh.N.: 1.11.00711

as: 12:00

Viatura: 5

Lugar: 27

SUSANA

Preço: 9,50 Eur

Compre o seu bilhete na INTERNET  
Embarque directamente no autocarro  
www.rede-expressos.pt

Nome:

NIE:

Processado por computador

IVA Incluído: 0%

VALIDO PARA DATA E HORA MENCIONADAS

MOTORISTA

NAZARE 2009-08-02

/12:00/5/27/ Bilh: 1.11.00711

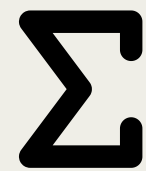
DOMINGO

Type	Amount	Place	Date of Expense
Transportation	9.50	Rede expressos	2009-08-02
Restaurant	7.20	Smack-Bar Sweet Drop	2024-03-23
Entertainment	12.00	Teatro Tivoli BBVA	2013-10-06

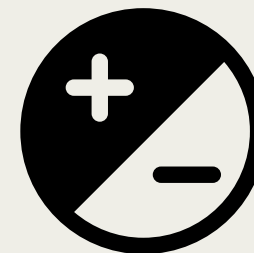
# SPLITTING ALGORITHM

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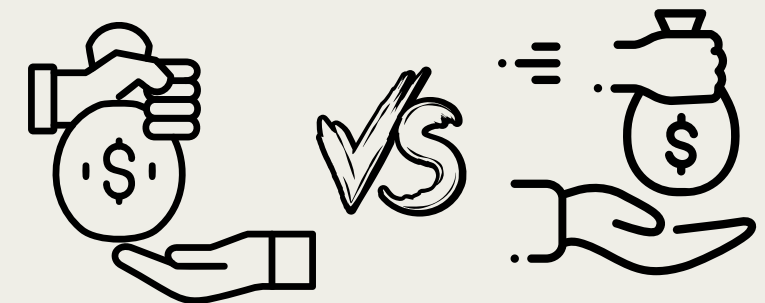
Total amount  
of expenses



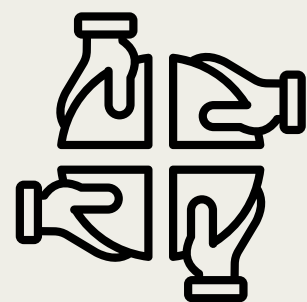
Individual balance



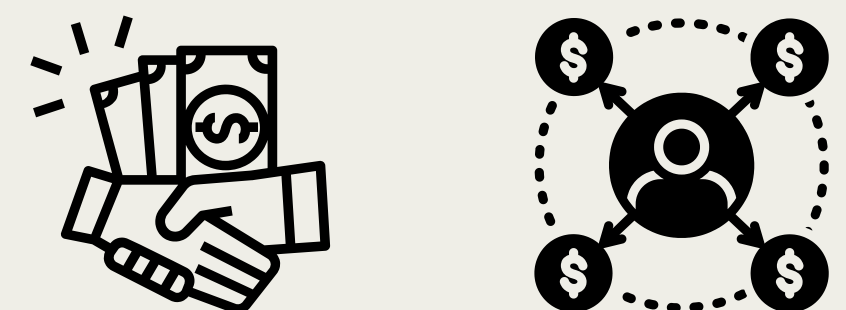
Lender / borrower  
identification



Individual share

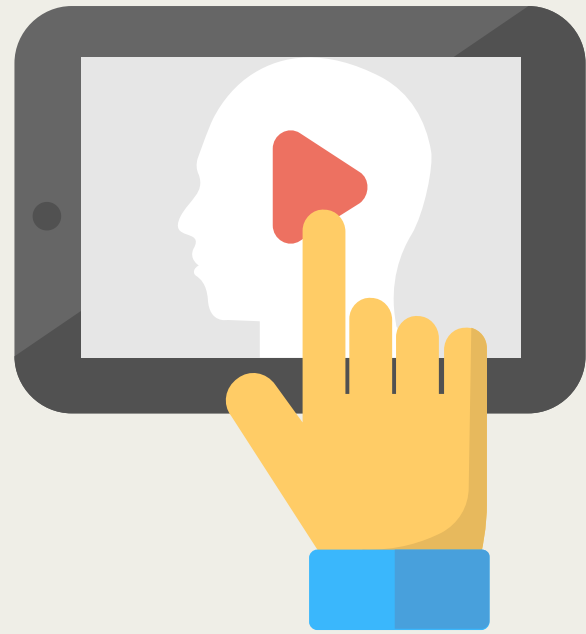


Minimizing number of  
transactions



# TRIAL

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Let's try it  
out!





## FEATURES TO BE RELEASED (V2.0)

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- **Itemization:** detecting not only the total amount but also individual bill items and allowing users the flexibility to assign them to group members based on their preference;
- **Currency conversion:** facilitating budgeting and expense tracking for international users or travelers, integrating real-time exchange rates, ensuring accuracy and reliability in currency conversion;
- **Flexible Expense Allocation:** enhance the algorithm to accommodate not only equally distributed bills but also other percentage-based allocations, providing users with greater flexibility in splitting expenses.



# Thank you!

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## QUESTIONS & ANSWERS

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