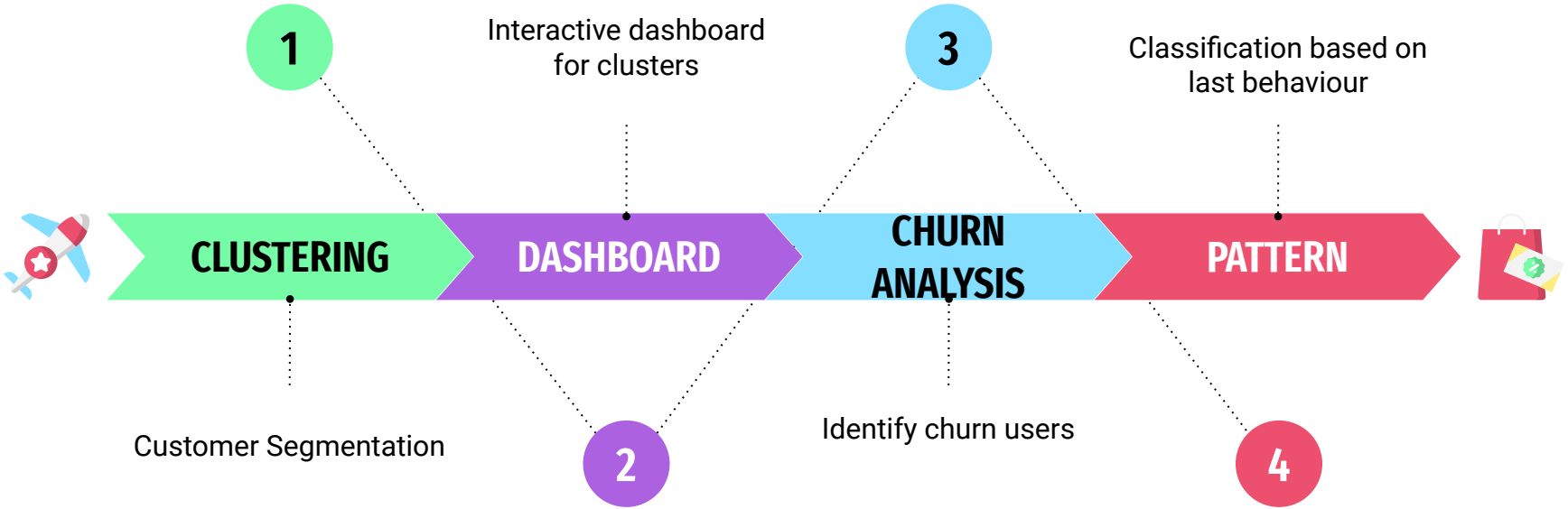
novibet

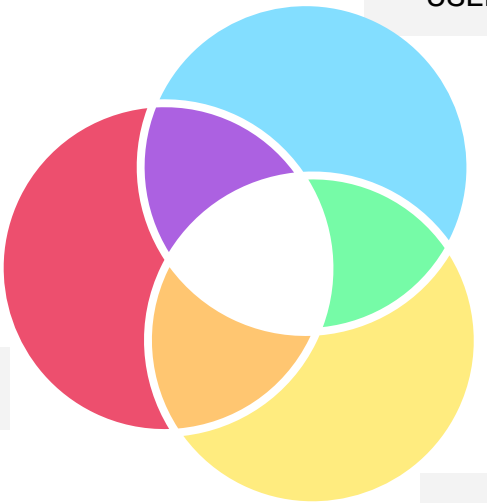
Customer Analysis

Christos Logaras

Customer Analysis



Data Sources



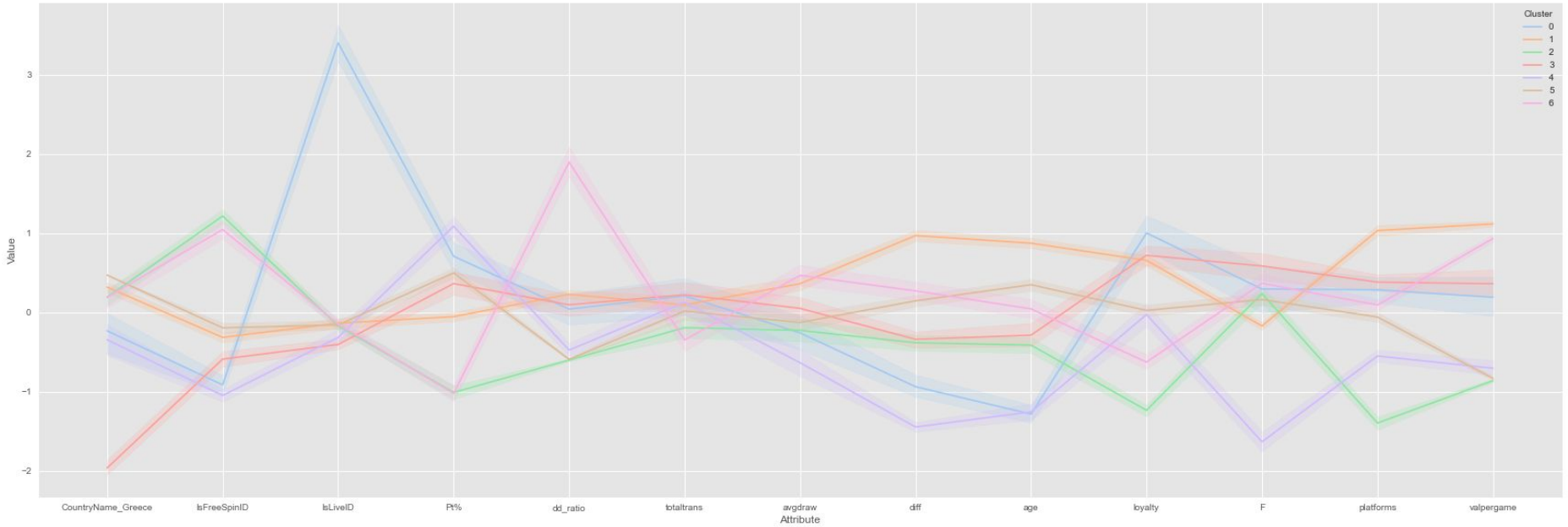
USER INFO

GAMES

WALLET

- Demographic Characteristics
- Gaming Behaviour
- Bank Transactions

Customer Segmentation



Segments

1:Loyal Customers

- Most frequent group
- Low profitability
- Many transactions
- High value per game

23%

3:Developing Market

- Foreigners
- Profitable
- High value per game

10%

5:Passionate Customers

- High frequency
- Very profitable
- Zero bank withdraw

23%

4:Must Win Back

- Very profitable
- Lowest frequency
- Lowest bonus usage

10%

Segments

2:Cheap

- Mainly FreeSpin
- Unprofitable
- Very small amounts
- Young (20-39 years)

16%

6:Professional

- Mainly FreeSpin
- Unprofitable
- Many transactions
- Frequent players

12%

0:Live Fanatics

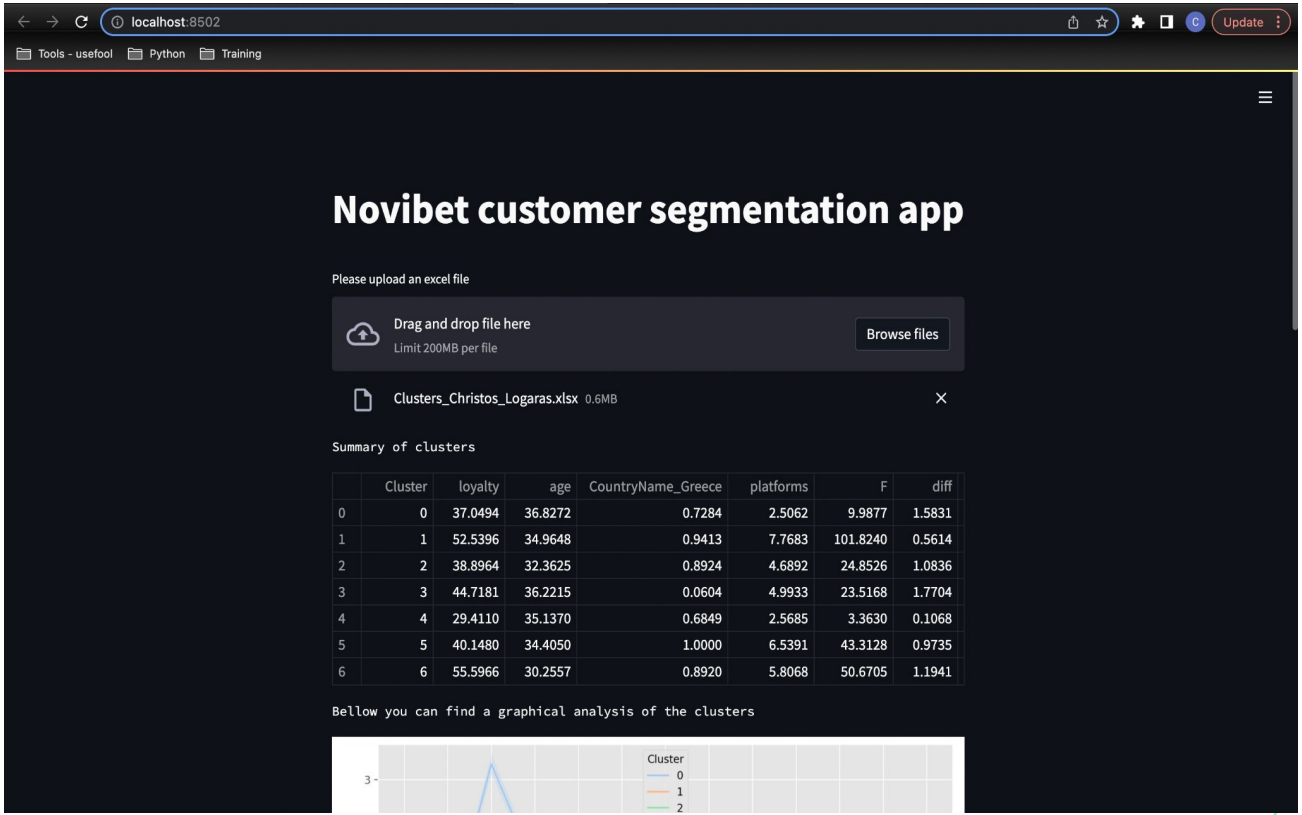
- Passionate about Live games
- Avoid FreeSpin
- Profitable

6%

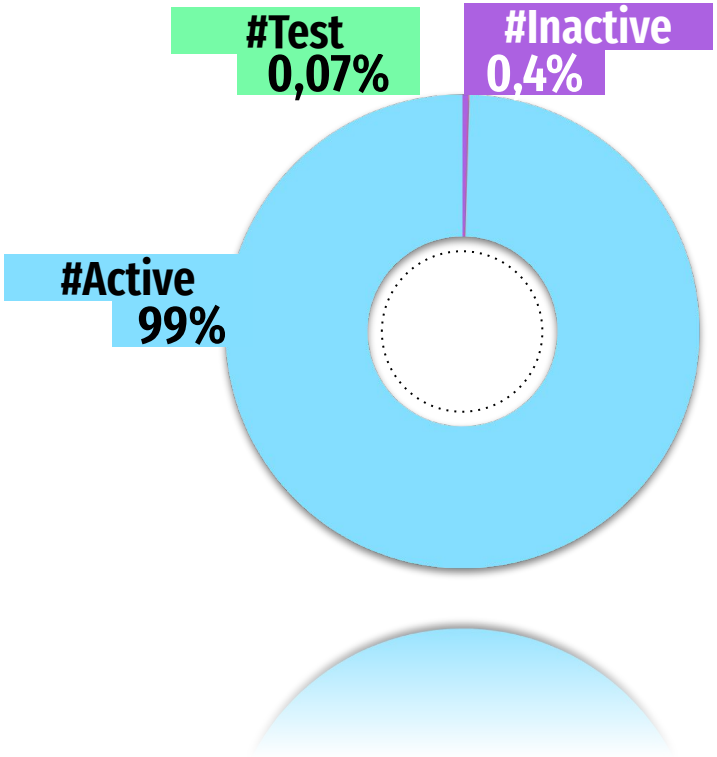
DASHBOARD

Dashboard

1. Run: script.py
2. Export “Clusters_Christos_Logaras.xlsx”
3. Run: “streamlit run dashboard.py”
4. Upload excel



Limitations



- Extremely imbalanced classes
- Player SystemStatus: 2022
  VS
  Gaming Activity:2021
- SystemStatus does not explain activity, i.e. dissatisfied player with active account

Churn Factor*

$$\text{frequency} = \frac{\text{Longevity} - \text{Recency}}{\text{Number of activities} - 1}$$

Longevity = Total number of days player has been a customer
Recency = Days since player's last activity

$$\text{churn factor} = \frac{\text{time since 1st activity}}{\text{frequency}}$$

*was not realised as activity since subscription was not available

PATTERN

WARNING SYSTEM*

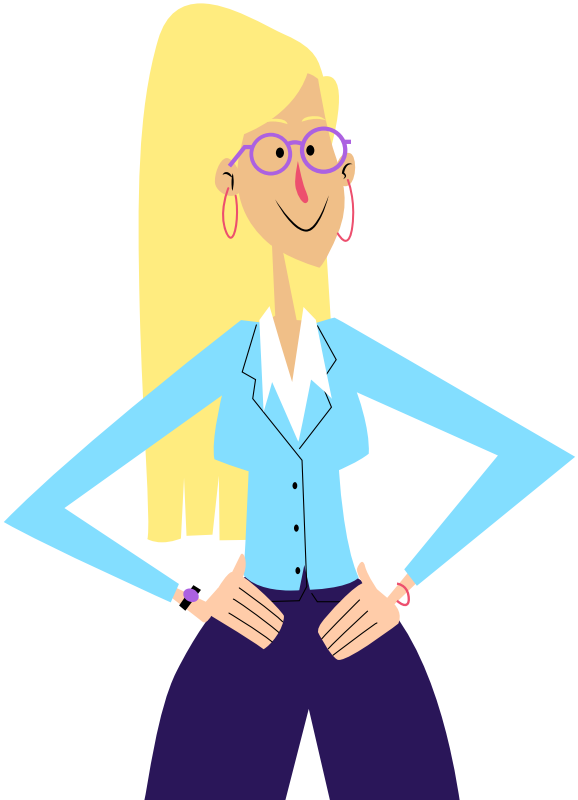
A HISTORIC DATA

Previous behaviour for N number of games e.g.:

- Time between games
- Win/Loss
- FreeSpins
- Withdraw

B BALANCE CLASSES

SMOTE



Classification D

Machine learning classification.

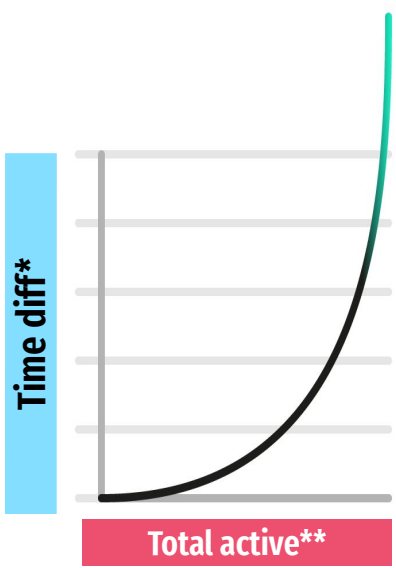
- Grid search for best params
- Select features

Validation C

Cross validation and metrics(focused on recall scores)

* was not realised

Churn Identification



*Days between games
**Cumulative activities

Assumption

- Unsatisfied players do not necessarily delete account.
- Time between games drastically increase for disengaged clients.
- Distribution must resemble exponential

Churn Identification

Below are examples of players who were identified as churned. Assumption about the distribution of time between games was not sufficient.

	Casino_Provider	UserProfileId	IsJackpotWinID	IsFreeSpinID	Date	IsLiveID	Hold	absvalue	diff
5473760	PlayTech	1574195	0	0	2021-10-31	1	-30.00	30.00	0.0
9335622	PragmaticPlay	1574195	0	0	2021-10-31	0	59.88	59.88	0.0
6997729	PlayTech	1574195	0	0	2021-11-01	1	270.00	270.00	1.0

	Casino_Provider	UserProfileId	IsJackpotWinID	IsFreeSpinID	Date	IsLiveID	Hold	absvalue	diff
1372860	PlayTech	1308550	0	1	2021-10-13	0	-34.02	34.02	0.0
9466733	PlayNGo	1308550	0	1	2021-10-14	0	-4.20	4.20	1.0
5564964	NetEnt	1308550	0	1	2021-10-30	0	-1.05	1.05	16.0

SCRIPT.PY


....This is a script, used in clustering players.
--> Please follow the instructsions
author:Christos Logaras
please use command streamlit run dashboard.py
Press 1 for Mac , 2 for windows 1
Enter path of games csv file /Users/chrestoslogaras/Desktop/novibet/Casino games (1).csv
Enter path of wallet csv file /Users/chrestoslogaras/Desktop/novibet/Customer Wallet.csv
Enter path of users csv file /Users/chrestoslogaras/Desktop/novibet/Casino Users.csv

THANK YOU!

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