

K-modes Clustering

-Team 24

Basic Methodology

- By building a k-modes clustering model, our team aims to identify the clusters of players with a higher tendency to spend money in the game.
- From the insight we get from the model, we want to identify what kinds of activities do these players like the most, and what kinds of items these players are most interested in.
- Ideally, the company would be able to develop more activities and items that can attract players to recharge in-game based on the model we built.

Categorical Variables used

- The most played activity of a account in terms of the total hours spent on that activity
- The favorite item-type in terms of the highest proportion of money spent
- Weapon
- Vehicle: Car, Bike, Cycle
- Propoerty_Flying: Property, Jet, Helicopter
- Other

Using elbow method to determine the number of clusters

- Through the elbow method we determined with clusters of 2 or 3
- As per our hypothesis, there should be a general split between players that prefer “showing-off” and those that prefer activity related commodities
- We chose 3 because a distinction between weapon-related and vehicle related spending pattern should also be considered

Outcome of the model

	Cluster	activity_type	type	PVC
account_id				
0	0	Freeroam - Business Battles	vehicle	163047.677191
1	0	Race	vehicle	0.000000
2	2	Heist	property_flying	0.000000
3	1	Executive	property_flying	984721.370675
4	0	Freeroam - Business Battles	weapon	0.000000
...
9521	2	Heist	property_flying	0.000000
9522	0	Freeroam - Business Battles	vehicle	0.000000
9523	0	Executive	vehicle	0.000000
9524	0	Heist	vehicle	0.000000
9525	0	Freeroam - Business Battles	vehicle	0.000000

Sample output of the clustering

	PVC
Cluster	
0	391235.808581
1	775041.396017
2	401472.950087

Insights!

- We grouped accounts that are clustered as the “showing off” batch and merged their PVC spending habits with such accounts
- The result is ideal, as there is a perceptible pattern with the “showing off” cluster having higher PVC spendings
- Therefore, it reasonable for Rockstar to push ads and discounts for this specific segmentation of players, as they have spent and will recharge to buy flexing items in the game