KNOWING YOUR CUSTOMERS

Behnoush Shakeri

BUSINESS INTUITION

Knowing your customers >> Profitability

The goal for FTP games is to balance the acquisition:

$$ROI = LTV^* - C^{**}$$

* LTV represents the total worth to a business of a player over the whole period of their relationship

** Cost associated with players (acquisition costs, offline ads, promotion and offers, etc.)

PLAYER SEGMENTATION
BY RFM CLUSTERING

- **Recency:** Duration between a player's first purchase and their latest purchases. (only 1 purchase, recency is 0)

- **Frequency:** the number of repeat purchases the player has made

- **Monetary value:** represents the average value of a given player's purchases.

LOOK AT DATA

- Total Revenue: $8.2 M

- Average Revenue per Transaction: $348.5

- Average Revenue per Customer: $2072

- Average Transaction per Customer: 6
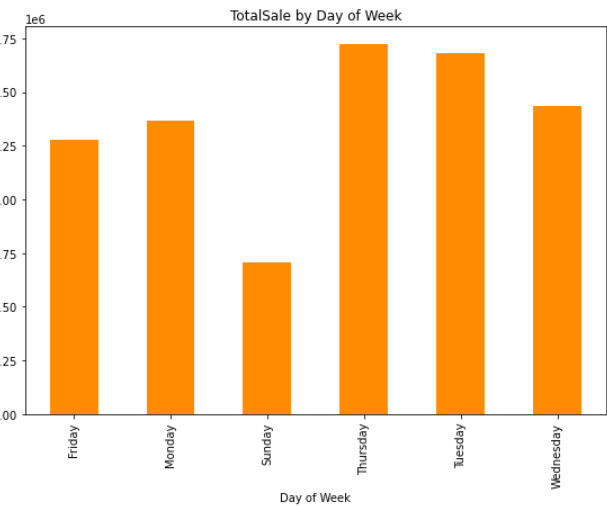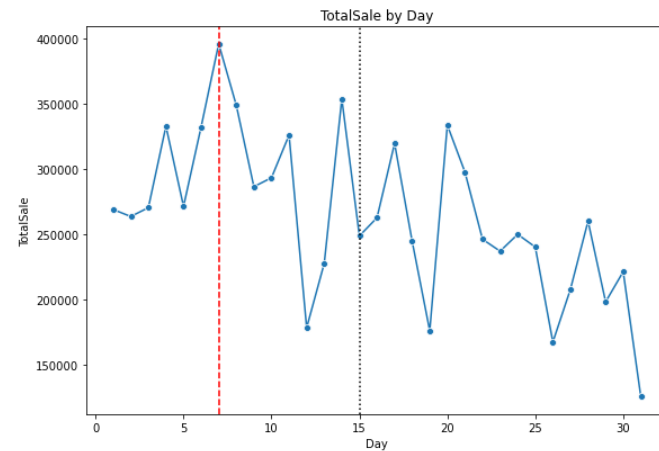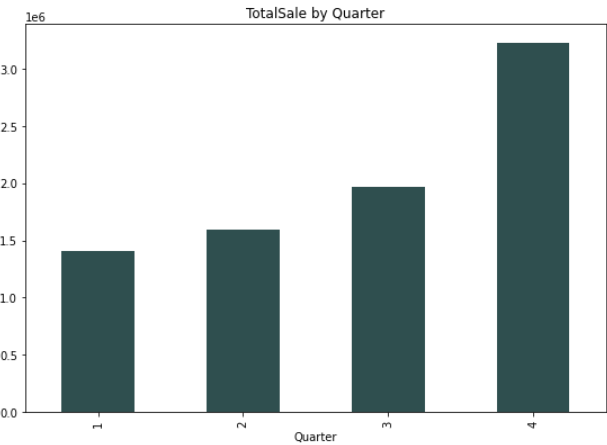
CALCULATING RFM SCORE

- For each customer RFM metrics has been calculated.

- K-mean clustering >> Groups that share similarities and are dissimilar to the objects belong to another group.
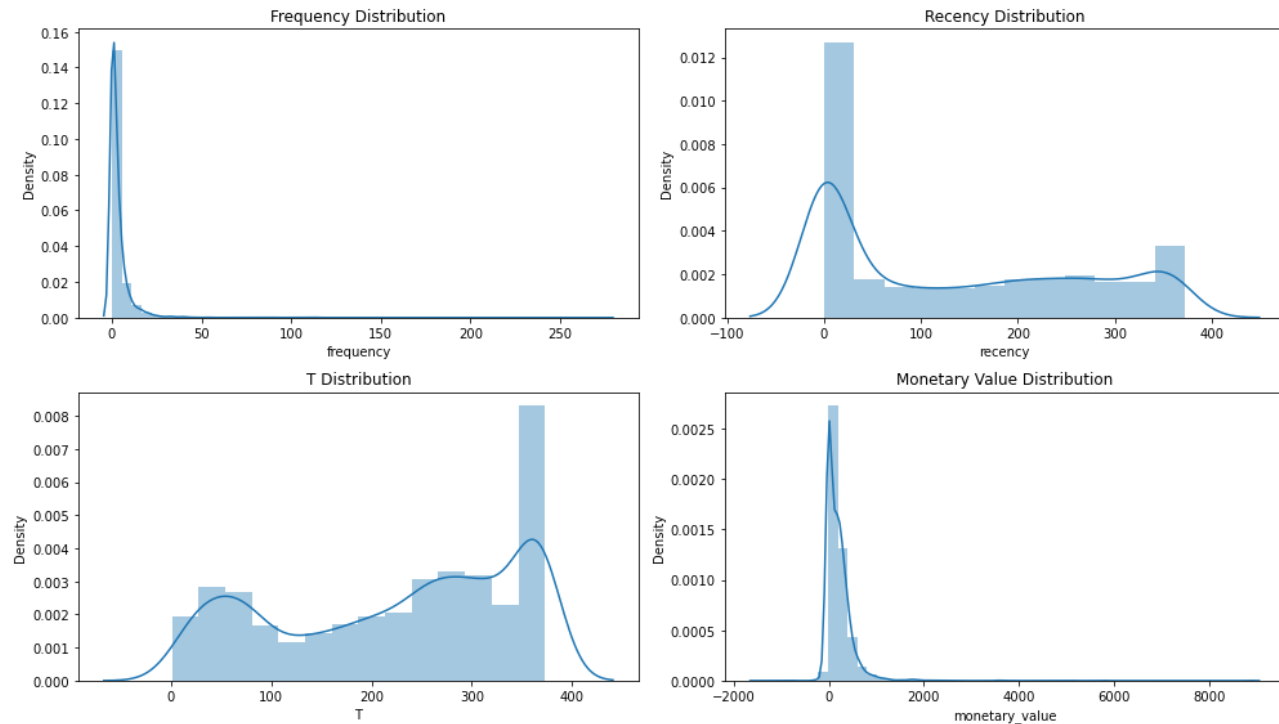
CLUSTER EACH METRICS

RecencyCluster

	count	mean	std	min	25%	50%	75%	max
0	478.0	304.393305	41.183489	245.0	266.25	300.0	336.00	373.0
1	568.0	184.625000	31.753602	132.0	156.75	184.0	211.25	244.0
2	954.0	77.679245	22.850898	48.0	59.00	72.5	93.00	131.0
3	1950.0	17.488205	13.237058	0.0	6.00	16.0	28.00	47.0

FrequencyCluster

	count	mean	std	min	25%	50%	75%	max
0	3496.0	49.525744	44.954212	1.0	15.0	33.0	73.0	190.0
1	429.0	331.221445	133.856510	191.0	228.0	287.0	399.0	803.0
2	22.0	1313.136364	505.934524	872.0	988.5	1140.0	1452.0	2782.0
3	3.0	5917.666667	1805.062418	4642.0	4885.0	5128.0	6555.5	7983.0

RevenueCluster

	count	mean	std	min	25%	50%	75%	max
0	3688.0	908.182672	923.507907	-4287.63	263.3325	572.685	1258.675	4330.67
1	233.0	7775.420687	3638.011093	4345.50	5178.9600	6568.720	9167.820	21535.90
2	27.0	43070.445185	15939.249588	25748.35	28865.4900	36351.420	53489.790	88125.38
3	2.0	221960.330000	48759.481478	187482.17	204721.2500	221960.330	239199.410	256438.49

OVERALL RFM SCORE

The scoring clearly shows that customers with score 8 are our best customers whereas 0 is the worst.
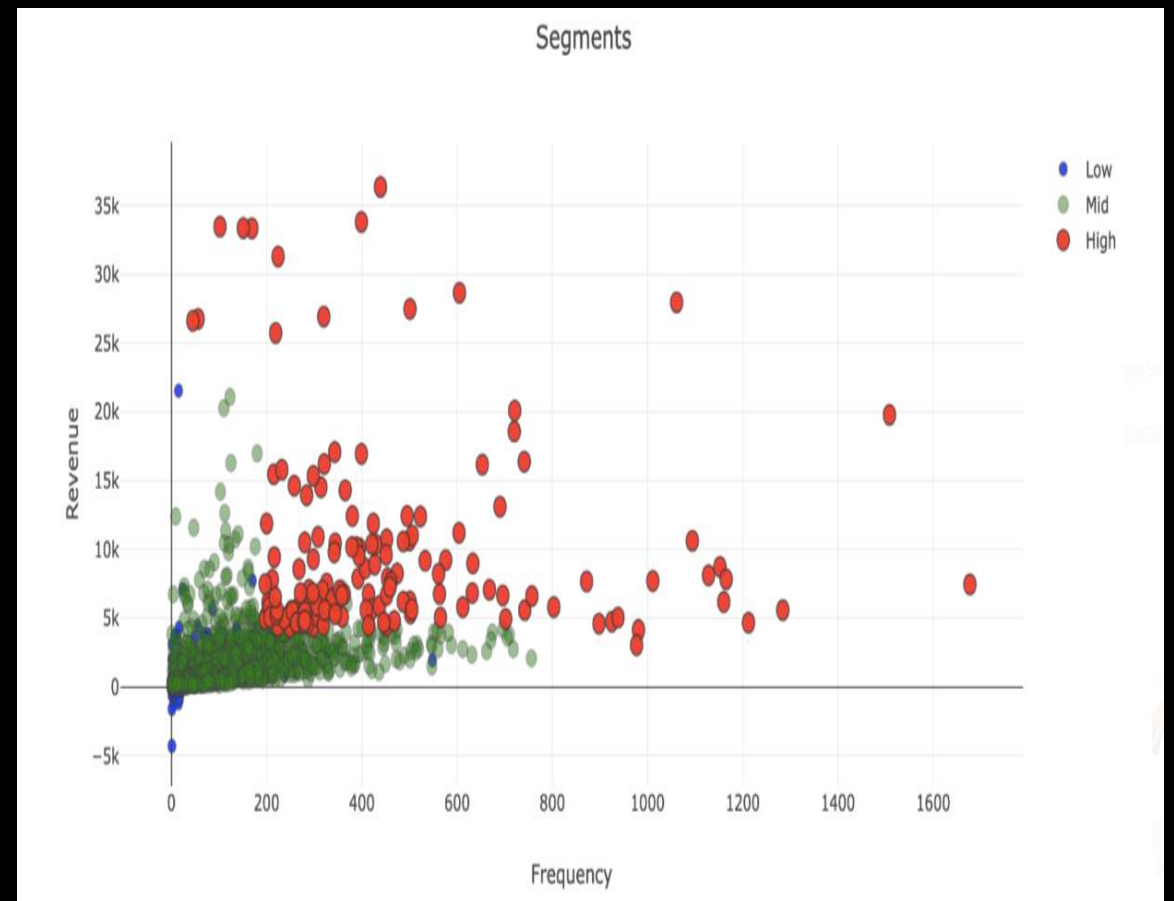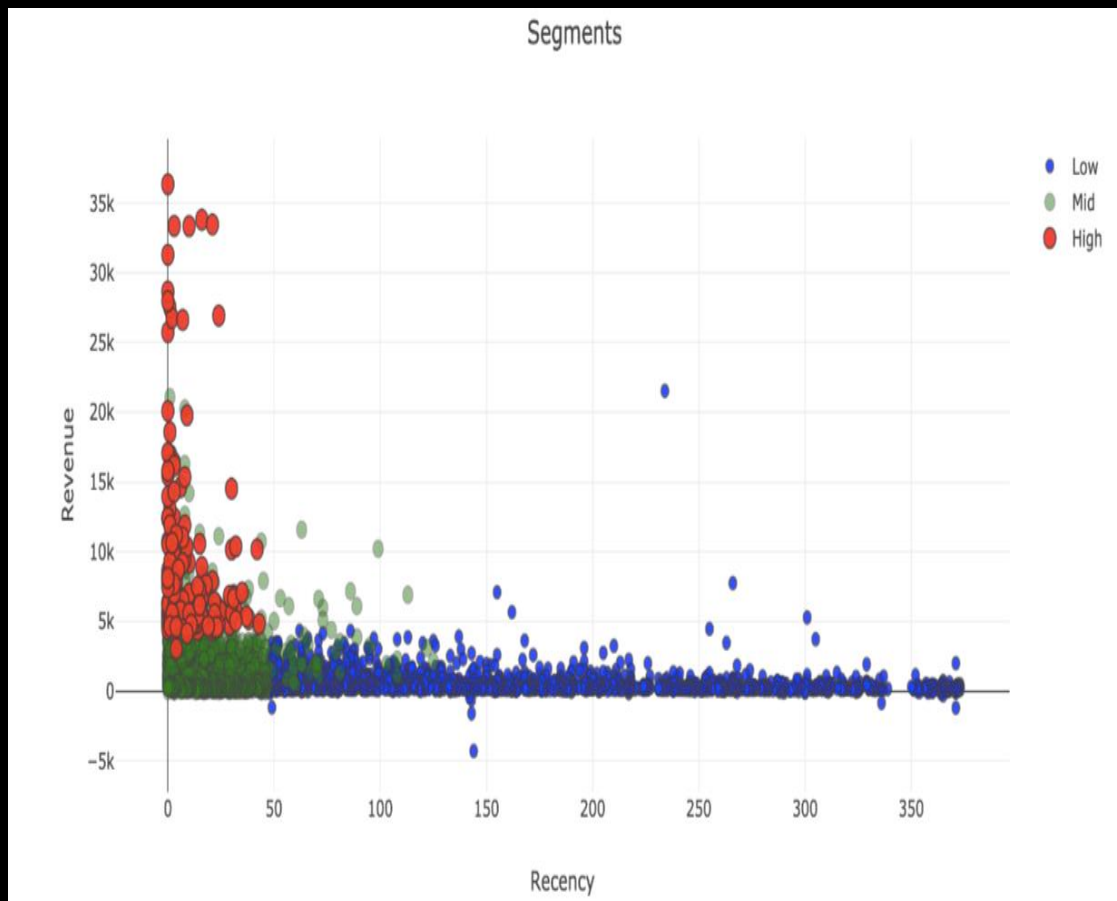
0-2 : Low Value

3-4: Mid Value

5+: High Value

OverallScore	Recency	Frequency	Revenue
0	304.584388	21.995781	303.339705
1	185.362989	32.596085	498.087546
2	78.972856	47.060803	871.842586
3	20.662252	68.374172	1089.271213
4	14.892617	271.755034	3607.097114
5	9.662162	373.290541	9136.946014
6	7.740741	876.037037	22777.914815
7	1.857143	1272.714286	103954.025714
8	1.333333	5917.666667	42177.930000

HOW SEGMENTS DISTRIBUTED ON A SCATTER PLOT

PLAYER SEGMENTATION
BY RFM CLUSTERING

- **Low Value:** Players who are less active, rarely purchase and generate low revenue

>> Improve Retention

- **Mid Value:** Players who behave moderately in all the three metrics

>> Improve Retention + Increase Frequency

- **High value:** Players we do not want to lose. Players who are active, frequently purchase and generate high revenue

>> Increase Frequency

FUTURE STEPS

- Predict "Customer Lifetime Value"

- More someone plays, the more they are enjoying, the higher the likelihood they will see value in making a purchase.

\>> time spent in the game/features
\>> player interactions or attack on other players

- Marketing engagement or demographic features.

CAVEAT OF THE RFM MODEL

- Each customer makes the decision based on their own situation, meaning each customer has a churning rate of their own.

>> This assumption is violated for Apex legend (Online multiplayer game)

>> Player's behavior can affect each other, they talk, one decision can affect the other's