



ReDI School of  
Digital Integration

# RFM Model

---

---

Fall 2023

# Customer segmentation

This is the process of **dividing customers into groups based on shared characteristics**. Enabling businesses to create more targeted marketing campaigns, optimize customer experience, and increase customer retention.

# What are customer characteristics?

## Behavioral

- Purchase history
- search history

## Demographics

- Age
- Gender
- Place of Birth

## *Characteristics*

```
graph TD; C[Characteristics] --> B[Behavioral]; C --> D[Demographics]; C --> T[Technographic]; C --> G[Geographics];
```

## Technographic

- Mobile
- Cell Phone Model
- App version

## Geographics

- Location
- City
- Language

# What is the RFM Model ?

- The RFM model is a commonly used segmentation model that segments customers based on Recency, Frequency, and Monetary Value.
- By analyzing these factors, businesses can identify their most valuable customers and develop more effective marketing strategies to retain them.

# RFM definition

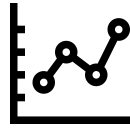


## Recency

How recently a customer has made a purchase.

For example:

- Time since last purchase



## Frequency

How often a customer makes purchases

For example:

- Total Number of purchases



## Monetary

How much a customer spends on purchases

For example:

- Total value spent

# Possible definitions

## TOTALS

**R:** Time since last transactions

**F:** Total number of transactions

**M:** Total transactions Value

# Step 1: Building a RFM table

RFM is calculated for each customer in the database

Customer	Recency (days)	Frequency (transactions)	Monetary (€)
1	10	2	1000
2	1	10	100
3	100	50	5000

## Step 2 : Distribution of RFM Metrics



**Recency**

0	1	2	3	4	5	6
---	---	---	---	---	---	---

Days since last purchase  
(days)



**Frequency**

1	10	20	30	40	50	60
---	----	----	----	----	----	----

Total Purchases



**Monetary**

10	50	100	200	400	800	1200
----	----	-----	-----	-----	-----	------

Total Value Spent (EUR)



# Step 3 : Segmentation



**Recency**

Group 1		Group 2		Group 3		Group 4
0	1	2	3	4	5	6

Days since last purchase  
(days)



**Frequency**

Group 1		Group 2		Group 3	Group 4	
1	10	20	30	40	50	60

Total Purchases



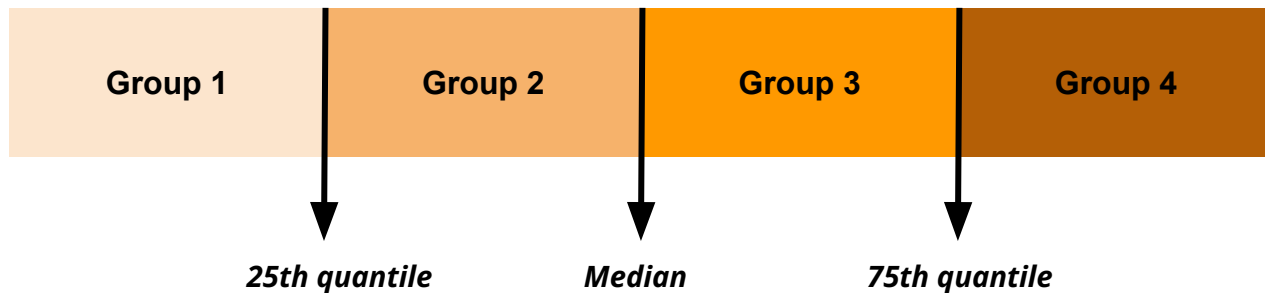
**Monetary**

Group 1	Group 2	Group 3		Group 4		
10	50	100	200	400	800	1200

Total Value Spent (EUR)

# Statistical Distribution of RFM Variables

The easiest ways to distribute customer behavior is using quantiles



## Step 4: Building a RFM table

RFM is calculated for each customer in the database

Customer	Recency (days)	Frequency (transactions)	Monetary (€)	R	F	M	RFM segment
1	10	2	1000	2	4	3	243
2	1	10	100	1	2	4	124
3	100	50	5000	4	1	1	411

# Step 5: Interpreting the results



## Recency

- Time since last purchase

<i>Active</i>	<i>Passive</i>	<i>At Risk</i>	<i>Churned</i>
Group 1	Group 2	Group 3	Group 4

# Step 5: Interpreting the results



## Frequency

- Total Number of purchases



## Monetary

- Total value spent

*Neutral*

*Silver*

*Gold*

*Premium*

**Group 1**

**Group 2**

**Group 3**

**Group 4**

Group 1

# Step 5: Interpreting the results



Recency

Group 1		Group 2		Group 3		Group 4	
0	1	2	3	4	5	6	

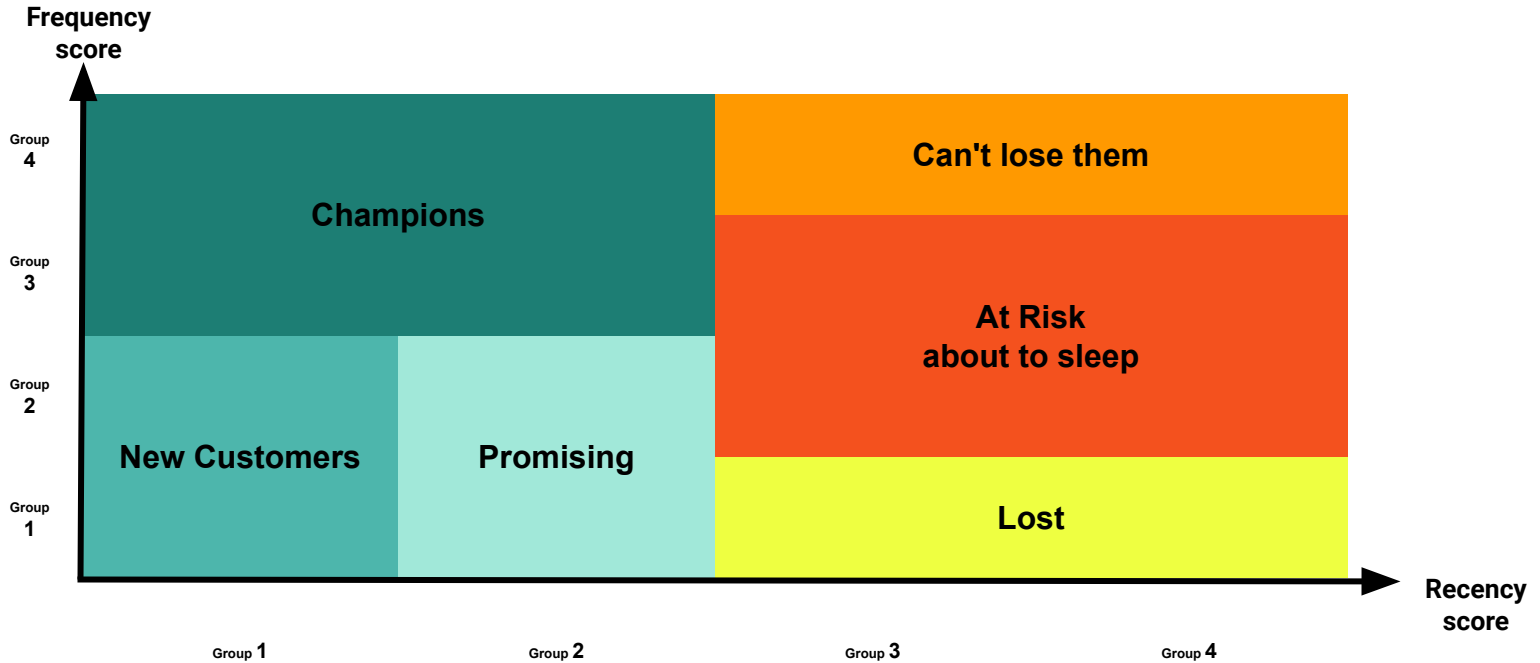
Days since last purchase (days)



Frequency

Group 1		Group 2		Group 3		Group 4	
1	10	20	30	40	50	60	

Total Purchases



Group 1

# Step 5: OR for Our supermarket



Recency

Group 1		Group 2		Group 3		Group 4	
0	1	2	3	4	5	6	

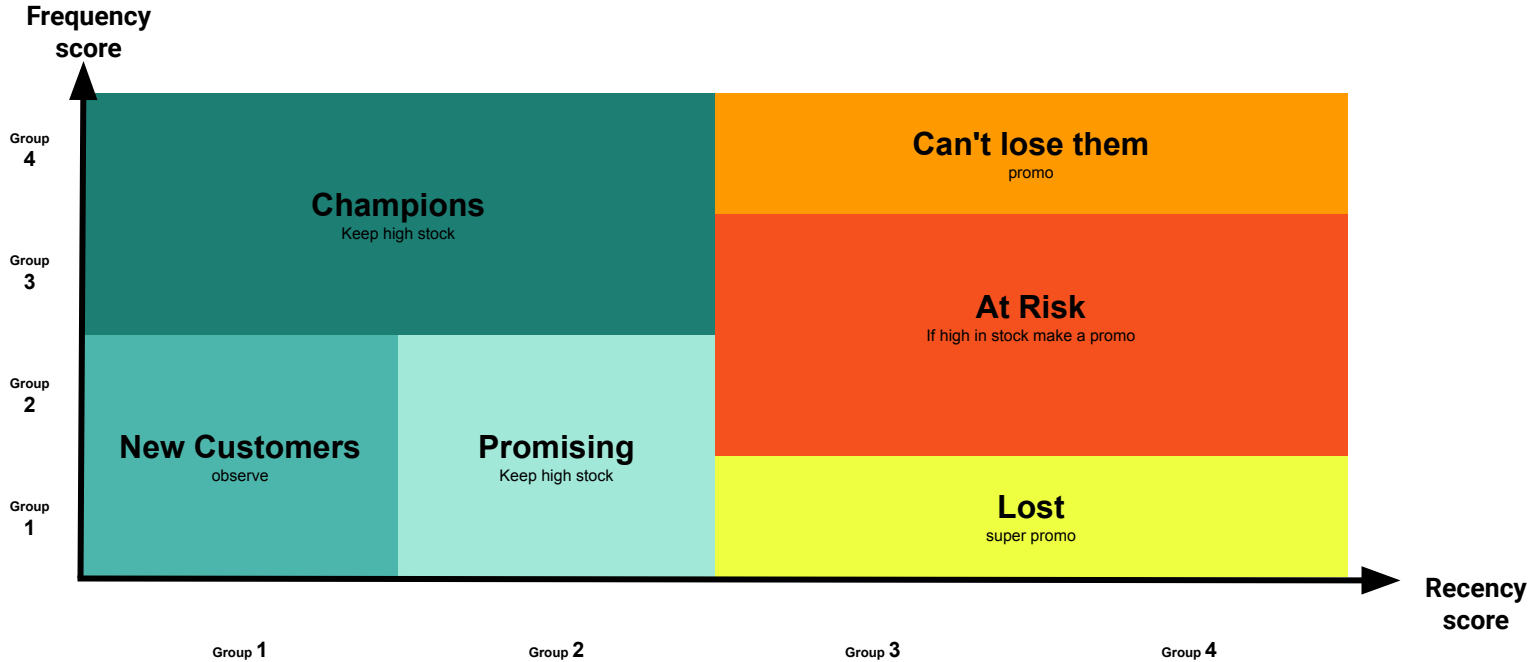
Days since last purchase  
(days)



Frequency

Group 1		Group 2		Group 3		Group 4	
1	10	20	30	40	50	60	

Total Purchases





# Exercise





# Exercise

Create a RFM table, dividing the items into categories using only recency, frequency, and quantiles, with one row per item\_name.

1. What is the percentile of 25 for recency?
2. What is the percentile 50 for frequency?
3. What is the percentile of 75 for monetary?
4. What percentage of Item\_Name is in each recency\_group?
5. What percentage of Item\_Name is in each frequency\_group?
- 6.
7. What does it mean when Item\_Name is in recency\_group = Group 1 and frequency\_group = 4?
8. What does it mean when Item\_Name is in recency\_group = Group 3 and frequency\_group = 3?