



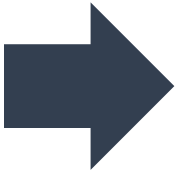
## ***Challenge#2: RFM Analysis – Hecuba Case***

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**Prompt#1: Using the data provided, assign each customer with an RFM code using the a scoring system of 1-4. The lowest code will be a 111 and the highest will be 444.**

*Sample RFM Code Assignment*

cust_id	Recency Percentile	Recency Score	Frequency Percentile	Frequency Score	Monetary Percentile	Monetary Score	RFM Score
2BUITAME	61.40%	2	1.00%	1	1.00%	1	211
5VGEGIL4	26.90%	3	61.60%	3	73.00%	3	333
OLL4YGB1	61.40%	2	24.20%	1	12.70%	1	211
n5A016BF	19.80%	4	7.20%	1	26.80%	2	412
Z0E855I4	50.00%	2	97.80%	4	97.70%	4	244
5nM603mN	61.40%	2	97.80%	4	92.50%	4	244
234QnBMB	10.30%	4	0.00%	1	0.10%	1	411
00WV3H5F	51.80%	2	35.50%	2	43.80%	2	222
8IYXYT75	9.00%	4	48.40%	2	41.00%	2	422
HHL3W8HV	25.50%	3	72.80%	3	57.30%	3	333
W9WRZVCE	46.10%	3	81.50%	4	90.50%	4	344



*RFM Group Distribution*

RFM Group	Customer Share	RFM Group	Customer Share	RFM Group	Customer Share	RFM Group	Customer Share
111	5.09%	211	5.35%	311	5.58%	411	5.57%
112	2.68%	212	2.70%	312	2.60%	412	2.87%
113	0.77%	213	0.77%	313	0.63%	413	0.77%
114	0.03%	214	0.05%	314	0.10%	414	0.02%
121	0.87%	221	0.85%	321	0.68%	421	0.68%
122	2.49%	222	2.25%	322	2.58%	422	2.73%
123	2.12%	223	3.33%	323	2.17%	423	2.68%
124	0.61%	224	0.55%	324	0.77%	424	0.70%
131	0.07%	231	0.07%	331	0.12%	431	0.07%
132	0.91%	232	0.73%	332	0.96%	432	0.85%
133	2.08%	233	2.03%	333	2.17%	433	2.39%
134	1.81%	234	1.95%	334	1.64%	434	2.03%
142	0.15%	242	0.20%	342	0.17%	442	0.10%
143	0.67%	243	0.85%	343	0.79%	443	0.87%
144	3.60%	244	4.27%	344	3.57%	444	3.21%

**Prompt#2: Which groups of customer RFM codes had a higher coupon return rate than the 17% rate for the sample overall?**

RFM Group	Coupon Return Rate	RFM Group	Coupon Return Rate	RFM Group	Coupon Return Rate	RFM Group	Coupon Return Rate
111	16.67%	211	17.39%	311	16.98%	411	17.07%
112	25.00%	212	7.14%	312	6.67%	412	31.57%
113	0.00%	213	0.00%	313	0.00%	413	33.33%
114	0.00%	214	0.00%	314	0.00%	414	0.00%
121	10.00%	221	17.39%	321	21.43%	421	41.67%
122	27.59%	222	25.00%	322	14.28%	422	23.07%
123	12.50%	223	20.00%	323	10.52%	423	23.81%
124	33.33%	224	0.00%	324	0.00%	424	20.00%
131	50.00%	231	50.00%	331	0.00%	431	0.00%
132	7.41%	232	6.67%	332	5.88%	432	35.29%
133	20.00%	233	4.87%	333	18.75%	433	19.51%
134	6.67%	234	25.00%	334	16.67%	434	16.67%
142	14.29%	242	0.00%	342	18.18%	442	0.00%
143	20.83%	243	20.00%	343	10.00%	443	31.57%
144	23.88%	244	17.91%	344	8.46%	444	16.67%

**As the RFM Group x Coupon Return Rate Table shows:**

- There are **46.7%** RFM groups (**n=28**) had a Coupon Return Rate higher than the 17% rate reported by the Hecuba management Team with Random Selected Sample
- The Groups include **112, 122, 124, 131, 133, 143, 144, 211, 221, 222, 223, 231, 234, 243, 244, 321, 333, 342, 411, 412, 413, 421, 422, 423, 424, 432, 433, 443**
- The total number of Coupon Redeemed from these RFM groups is 146, taking account for **71.57% of all Coupon Redeemed (n=204)**

**694 Customers** get the Coupon via Email Offer **with a Coupon Return Rate of 22.49%**

**Prompt#3: If the company were to launch another coupon for rewards customers, which segments would you target? Management does not wish for the coupons redeemed to exceed n=204. Other than that, they are open to your recommendation.**



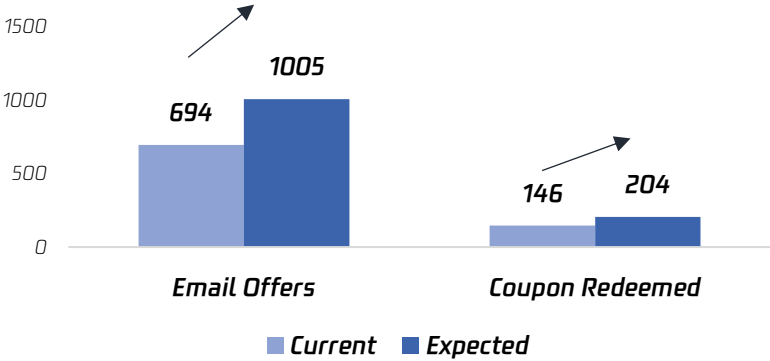
**70x** Remaining  
Redeemed Coupon Needed  
**22.49%**  
Current Coupon Return Rate

- Maximize the effectiveness of email coupon offers while capping total coupon redemptions at 204.
- **309** Additional Email Offers Potential **[70/22.49% = 311]**

**28x** Targeting RFM  
Groups  
**48%** Increase  
Email Offerings

- Target High Coupon Return RFM Groups **[>17%, n=28]**
- Increase Email Offer Outreach by **47.91%** **[311/649 = 47.92%]**

*Redeemed Coupon Estimation with Increased Email Offerings for New Coupon*



- By increasing the number of email offers by **47.92%**, Hecuba can expect to generate approximately **70** additional coupon redemptions, **bringing the total redemptions to the desired 204.**

*Recommendation with Projected Outcome Returns: By targeting high-return RFM groups, we confidently expect positive revenue growth, even in a conservative outcome. With a well-balanced strategy, meeting expectations will yield over \$7,000 in additional revenue, while an outperforming campaign could unlock over \$10,500.*

**\$101.77** *Current*

*Average Targeting RFM Group  
Average Customer Revenue*

**\$335,342**

*Current Sum of Targeting RFM  
Group Customer Revenue*

*Projected Return Outcomes* →

*Safe Return*

*35 redemptions (50% of the Expectation).*

***Revenue Increase =  $35 \times \$101.77 = \$3,562.06$   
Net Return of New Coupon = \$338,904.26***

*Match Return*

*70 redemptions (Original Expectation)*

***Revenue Increase =  $70 \times 101.77 = 7,124.11$   
Net Return of New Coupon = \$342,466.31***

*Reach Return*

*105 redemptions (150% of the Expectation)*

***Revenue Increase =  $105 \times 101.77 = 10,686.17$   
Net Return of New Coupon = \$346,028.37***

*Note: in this case, total coupon redeemed will exceed the expected cap (n>204)*