

**Program: PGPRM-1<sup>st</sup> year Tri-III (Batch 2018-20), End Term Exam, Subject: Retail Finance and Analytics**

**K. J. SOMAIYA INSTITUTE OF MANAGEMENT STUDIES & RESEARCH**  
**Vidyavihar, Mumbai- 400077**

**Program: PGPRM –1st year Tri- III (Batch 2018-2020)**  
**Subject: Retail Finance and Analytics**  
**(End Term Examination)**

**Maximum Marks: 50**  
**Duration: 3 Hours**

**Date: 27/03/2019**

**Instructions**

1. **All questions are compulsory**
2. Please write answers in points
3. State relevant examples wherever applicable

**QUESTION 1 Case : PREDICTION MODELLING**  
**(20 Marks)**

You were given two datasets to work on as a prediction case scenario. You were assigned the task of running several models using RapidMiner.

**Questions**

- i) You were asked to construct hypothesis based on the above data. Which are the independent variables and which is the dependent variable?
- ii) Which technique did you use to test your assumption? Linear regression or Logistic Regression? Why?
- iii) Which are the important variables in predicting the dependent variable? Explain
- iv) Why did you undertake modelling in RapidMiner? How did you validate the Model?
- v) How does this Modelling Exercise Help you with the unlabelled dataset?
- vi) Write down your key inferences post the modelling exercise

**QUESTION 2**  
**Marks)**

**(10**

Two partners who specialise in offering birthday menus are quite popular. They make everything fresh and at home and offer a limited menu with emphasis on healthy snacks. The products are freshly made and without any artificial flavours or colours.

The partners have a sense of which products sell well by looking at the sales data however in order to improve sales they are looking at offering some combinations at discounted price.

**OUTPUT FOR REFERENCE**

The screenshot displays the RapidMiner Studio interface. The main window shows the 'FrequentItemSets (FP-Growth)' process results. The 'Result History' tab is active, showing a table of frequent itemsets. The table has columns for 'Size', 'Support', and 'Item 1' through 'Item 4'. The 'Data' panel on the left shows 'No. of Sets: 29' and 'Total Max. Size: 4'. The 'Repository' panel on the right shows a list of saved models.

Size	Support	Item 1	Item 2	Item 3	Item 4
1	0.419	Donuts			
1	0.390	Noodles			
1	0.324	Milkshake			
1	0.300	Cookies			
1	0.188	Chilli cheese toast			
1	0.159	Mini Samosas			
1	0.094	Baked smileys			
2	0.225	Donuts	Noodles		
2	0.124	Donuts	Milkshake		
2	0.239	Donuts	Cookies		
2	0.147	Donuts	Chilli cheese toast		
2	0.069	Donuts	Mini Samosas		
2	0.130	Noodles	Milkshake		
2	0.187	Noodles	Cookies		
2	0.129	Noodles	Chilli cheese toast		

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Result History: AssociationRules (Create Association Rules) | ExampleSet (Numerical to Binominal)

No.	Premises	Conclusion	Support	Confidence	Lift ↓	LaPlace	G
16	Cookies, Chilli cheese toast	Donuts, Noodles	0.081	0.653	2.911	0.962	-0.4
14	Noodles, Chilli cheese toast	Donuts, Cookies	0.081	0.626	2.620	0.957	-0.4
26	Donuts, Noodles, Chilli chee...	Cookies	0.081	0.785	2.616	0.980	-0.4
24	Donuts, Chilli cheese toast	Cookies	0.110	0.745	2.482	0.967	-0.4
10	Chilli cheese toast	Donuts, Cookies	0.110	0.583	2.441	0.934	-0.4
21	Noodles, Chilli cheese toast	Cookies	0.091	0.708	2.361	0.967	-0.4
19	Donuts, Noodles	Cookies	0.155	0.689	2.297	0.943	-0.4
17	Chilli cheese toast	Cookies	0.123	0.656	2.188	0.946	-0.4
32	Cookies, Chilli cheese toast	Donuts	0.110	0.888	2.122	0.988	-0.4
31	Noodles, Cookies, Chilli che...	Donuts	0.081	0.884	2.111	0.990	-0.4
12	Donuts, Milkshake	Cookies	0.076	0.609	2.029	0.957	-0.4
30	Noodles, Cookies	Donuts	0.155	0.828	1.978	0.973	-0.4
29	Noodles, Chilli cheese toast	Donuts	0.103	0.797	1.905	0.977	-0.4
8	Donuts	Cookies	0.239	0.571	1.902	0.873	-0.4
28	Cookies	Donuts	0.239	0.796	1.902	0.953	-0.4

Min. Criterion: confidence  
Min. Criterion Value: [Slider]

Result History: AssociationRules (Create Association Rules) | ExampleSet (Numerical to Binominal)

No.	Premises	Conclusion	Support ↓	Confidence	Lift	LaPlace	G
8	Donuts	Cookies	0.239	0.571	1.902	0.873	-0.4
28	Cookies	Donuts	0.239	0.796	1.902	0.953	-0.4
9	Noodles	Donuts	0.225	0.576	1.376	0.881	-0.4
13	Cookies	Noodles	0.187	0.623	1.598	0.913	-0.4
15	Donuts, Cookies	Noodles	0.155	0.648	1.662	0.932	-0.4
19	Donuts, Noodles	Cookies	0.155	0.689	2.297	0.943	-0.4
30	Noodles, Cookies	Donuts	0.155	0.828	1.978	0.973	-0.4
25	Chilli cheese toast	Donuts	0.147	0.783	1.871	0.966	-0.4
18	Chilli cheese toast	Noodles	0.129	0.685	1.758	0.950	-0.4
17	Chilli cheese toast	Cookies	0.123	0.656	2.188	0.946	-0.4
10	Chilli cheese toast	Donuts, Cookies	0.110	0.583	2.441	0.934	-0.4
24	Donuts, Chilli cheese toast	Cookies	0.110	0.745	2.482	0.967	-0.4
32	Cookies, Chilli cheese toast	Donuts	0.110	0.888	2.122	0.988	-0.4
20	Donuts, Chilli cheese toast	Noodles	0.103	0.698	1.790	0.961	-0.4
29	Noodles, Chilli cheese toast	Donuts	0.103	0.797	1.905	0.977	-0.4

Min. Criterion: confidence  
Min. Criterion Value: [Slider]

**Questions:**

- i) Which products sell well alone? Justify
- ii) Which products need to be bundled. Explain the rationale for the combinations you are recommending. Would you look at Support or Lift? Why?

**QUESTION 3**  
**Marks)**

**(10**

Explain ANY TWO with suitable examples

- A) How did the Decision Tree add value in the Retail Cosmetics Case discussed in class. Elaborate?
- B) What is the difference between Analytics and Market research?
- C) Discuss the application of Market Basket Analysis

**QUESTION 4**  
**Marks)**

**(10**

- A) You were asked to run a Text Mining algorithm for the movie **Badla**. You were asked to do the following – Run a separate model for Critics review (Both Times of India and NDTV) and the First 10 entries from IMDB.
- B) Discuss the key words that were generated for the critics and the user reviews. Is there any difference?
- C) What was the sentiment score for Critics review and User review? Is there a difference and if so why?
- D) Discuss the applications of Text Mining for the marketer. What are the drawbacks?

**\*\*\*\*\* End of Paper\*\*\*\*\***