The "Data Mining" Specialization   [Learn More]   ✕

Feedback — Week 1 Quiz

Thank you. Your submission for this quiz was received.

You submitted this quiz on **Thu 12 Feb 2015 8:16 AM PST**. You got a score of **10.00** out of **10.00**.

Question 1

Which of the following statements is true? Select all that apply.

Your Answer		Score	Explanation
☑ Clustering and classification are examples of data mining tasks.	✔	0.20	
☑ The output of the pattern evaluation phase can be used in the data mining to improve the quality of patterns discovered.	✔	0.20	
☐ Data entry is part of the data mining phase.	✔	0.20	This is false since none of these tasks involve data analysis.
☐ In the knowledge discovery process, pattern evaluation takes place before the data preprocessing phase.	✔	0.20	This is false since pattern mining takes place after data preprocessing.
☐ Data collection and data cleaning are examples of data mining tasks.	✔	0.20	This is false since none of these tasks involve data analysis.
Total		1.00 / 1.00	

Question 2

Tid	Items bought
10	Beer, Nuts, Diaper

20	Beer, Coffee, Diaper, Nuts
30	Beer, Diaper, Eggs
40	Beer, Nuts, Eggs, Milk
50	Nuts, Coffee, Diaper, Eggs, Milk

Table 1: Transactions from a database.

Given the transaction in Table 1 and *minsup s* = 50%, how many frequent 3-itemsets are there?

Your Answer		Score	Explanation
⦿ 0	✔	1.00	There are no frequent 3-itemsets by the minsup criterion alone.
◯ 4			
◯ 2			
◯ 3			
◯ 1			
Total		1.00 / 1.00	

Question 3

Tid	Items bought
10	Beer, Nuts, Diaper
20	Beer, Coffee, Diaper, Nuts
30	Beer, Diaper, Eggs
40	Beer, Nuts, Eggs, Milk
50	Nuts, Coffee, Diaper, Eggs, Milk

Table 1: Transactions from a database.

A *strong* association rule satisfies both the *minsup* and *minconf* thresholds. Given the transactions in Table 1, *minsup s* = 50%, and *minconf c* = 50%, how many *strong* association rules are there? Note that the association rule $A \Rightarrow B$ and $B \Rightarrow A$ are distinct.

Your Answer		Score	Explanation
⦿ 6	✔	1.00	
○ 0			
○ 2			
○ 5			
○ 4			
Total		1.00 / 1.00	

Question 4

Consider the database containing the transaction $T_1 : \{a_1, a_2, a_3\}$, $T_2 : \{a_2, a_3, a_4\}$. Let *minsup* = 1. What fraction of all frequent patterns is closed?

Your Answer		Score	Explanation
⦿ $3/11$	✔	1.00	
○ $1/11$			
○ $2/11$			
○ $1/3$			
○ There are no closed frequent patterns for the given *minsup*.			
Total		1.00 / 1.00	

Question 5

Consider the database containing the transactions $T_1 : \{a_1, ..., a_3\}$, $T_2 : \{a_2, ..., a_4\}$. Let *minsup* = 1. Which of the following is both a max frequent and a closed frequent pattern? Select all that apply.

Your Answer		Score	Explanation
☐ $\{a_2, a_5\}$	✔	0.20	
☐ $\{a_2, a_3, a_4, a_5\}$	✔	0.20	
☑ $\{a_1, a_2, a_3, a_4, a_5\}$	✔	0.20	
☐ $\{a_1, a_2, a_3, a_4, a_5, a_6\}$	✔	0.20	
☑ $\{a_2, a_3, a_4, a_5, a_6\}$	✔	0.20	
Total		1.00 / 1.00	

Question 6

Rank the following sets by their cardinality for a given database: {all frequent patterns}, {closed frequent patterns}, {max frequent patterns}

Your Answer	Score	Explanation
◯ {all frequent patterns} ≥ {max frequent patterns} ≥ {closed frequent patterns}, i.e. the set of max frequent patterns and the set of closed frequent are identical.		
◯ {all frequent patterns} ≥ {max frequent patterns}, {all frequent patterns} ≥ {closed frequent patterns}, but the order of {max frequent patterns} and {closed frequent patterns} cannot be determined without furthur information.		
⦿ {all frequent patterns} ≥ {closed frequent patterns} ≥ {max frequent patterns}	✔ 1.00	
◯ {all frequent patterns} ≥ {closed frequent patterns} ≥ {closed frequent patterns}		
◯ Ranking in impossible without further information.		
Total	1.00 /	

1.00

Question 7

If we know the support of itemset {*a*, *b*} is 10, which of the following numbers are the possible supports of itemset {*a*, *b*, *c*}?

Your Answer		Score	Explanation
☑ 10	✔	0.33	
☑ 9	✔	0.33	
☐ 11	✔	0.33	
Total		1.00 / 1.00	

Question 8

If we know the support of itemset {*a*} is 50, and the support of itemset {*a*, *b*, *c*} is 30, which of the following numbers are the possible supports of itemset {*a*, *b*}?

Your Answer		Score	Explanation
☐ 100	✔	0.20	
☑ 50	✔	0.20	
☑ 30	✔	0.20	
☐ 5	✔	0.20	
☐ 10	✔	0.20	
Total		1.00 / 1.00	

Question 9

Considering Apriori Algorithm, assume we have obtained **all** size-2 (i.e. containing 2 items, e.g.

{A, B}) frequent itemsets. They are {A, B}, {A, C}, {A, D}, {B, C}, {B, E}, {C, E}. In the following size-3 itemsets, which of them should be considered, i.e. are potential to be size-3 frequent itemsets?

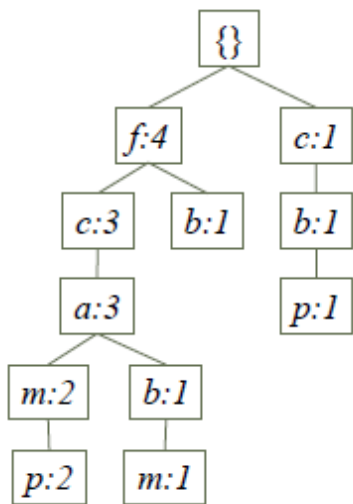| Your Answer		Score	Explanation
☑ {A, B, C}	✔	0.25	
☑ {B, C, E}	✔	0.25	
☐ {A, B, E}	✔	0.25	
☐ {A, B, D}	✔	0.25	
Total		1.00 / 1.00	

Question 10

Figure 1: FP Tree

Given the FP-tree as shown in Figure 1, what is the support of {c, p}?

Your Answer		Score	Explanation
○ 2			
○ 4			
● 3	✔	1.00	
○ 5			
○ 1			

Total   1.00 / 1.00