

# Business Intelligence and Data Mining

Important Question Bank

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## Business Intelligence and Data Mining

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1. Define Data Warehouse. Discuss the architecture of Data Warehouse.
2. Discuss various OLAP operations
3. Discuss the following:
  - a. Data Mart
  - b. Meta Data
  - c. Business Intelligence
4. What is the need of Online Analytical Processing (OLAP)? List categories of OLAP tools and explain any one.
5. Difference Between OLAP vs OLTP
6. Briefly compare snowflake schema, fact constellation and star query model.
7. What is Business Intelligence and how it is related to Data Mining.
8. Explain BI and DW Architecture
9. Explain KDD process with neat diagram.
10. Describe major issues in data mining.
11. Explain Data Mining Issues Related to Performance & Diversity of Data types.
12. Classification of Data Mining System.
13. Explain five data mining Task Primitives
14. How we integrate Data mining system With database or Data ware House
15. Explain Generalization using attribute oriented induction
16. Explain Data Visualization Technique
17. Explain Normalization Techniques with Example
18. Explain Apriori algorithm with example.
19. What are the limitations of Apriori algorithm and how can we increase the efficiency of Apriori Algorithm?
20. Compare FP-Growth approach with Apriori.
21. Discuss the following terms:
  - a. Support
  - b. Confidence
  - c. Association Rules
22. Explain Algorithm to find frequent item set without generating candidate set.
23. Explain frequent item set without candidate generation.
24. Find all frequent item sets & generate strong association rules in the following database using Apriori Algorithm. Take minimum support count = 2 and min\_conf = 70%

TID	Items
T100	I1, I2, I3, I4, I5
T200	I2, I3
T300	I1, I2, I6
T400	I2, I1, I7
T500	I1, I6, I8

25. Find All Frequent Item set using Apriori Algorithm.(Take minimum support count 2)

## Business Intelligence and Data Mining

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TID	ITEMS
T001	I1, I3, I4
T002	I2, I3, I5
T003	I1, I2, I3, I5
T004	I2, I5

26. Find all frequent itemsets in the following database using Apriori Algorithm. Take minimum support count = 2 and min\_conf = 70%

TID	List of item_ids
T1	I1,I2,I3
T2	I1,I2
T3	I2,I5
T4	I1,I2,I5

27. For given following transaction database (Ref. Table 1), find out frequent itemsets using Apriori algorithm. Assume Minimum Support count=2 and Minimum Confidence=70%. Generate strong association rules from frequent itemsets.

**Table 1: Transaction Database of items**

TID	List of item IDs
T100	I1, I2, I5
T200	I2, I4
T300	I2, I3
T400	I1, I2, I4
T500	I1, I3
T600	I2, I3
T700	I1, I3
T800	I1, I2, I3, I5
T900	I1, I2, I3

28. What is Association Rule Mining? What are the types of Association Rules?

29. Prepare FP-tree for transaction database given in Table 1.

**Table 1: Transaction Database of items**

TID	List of item IDs
T100	I1, I2, I5
T200	I2, I4
T300	I2, I3
T400	I1, I2, I4
T500	I1, I3
T600	I2, I3
T700	I1, I3
T800	I1, I2, I3, I5
T900	I1, I2, I3

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30. A database has set of seven transactions. Each transaction  $t_i$  is a set of items purchased in a basket in a store by a customer. The set  $I$  is the set of all items sold in the store. Let minimum support ( $\text{min\_sup}$ ) = 30% and minimum confidence ( $\text{min\_conf}$ ) = 80%. Find all frequent item sets using Apriori Algorithm.

TID	List of Items
T1	Beef, Chicken, Milk
T2	Beef, Cheese
T3	Cheese, Boots
T4	Beef, Chicken, Cheese
T5	Beef, Chicken, Clothes, Cheese, Milk
T6	Chicken, Clothes, Milk
T7	Chicken, Milk, Clothes

31. Write Short note on ARCS .
32. Define Bayesian Classifier and Bayes Theorem
33. Describe the following classification methods:
- CART
  - Rough Set approach
  - Genetic Algorithm
  - Fuzzy Logic
  - Decision Tree induction approach
34. What is classification and prediction? Explain issues regarding and prediction.
35. Short note: Information gain, logistic regression
36. What is classification and prediction? Explain issues regarding classification and prediction
37. Discuss various parameters to compare classification method.
38. Explain linear regression and nonlinear regression using example.
39. Describe Following Classification methods
1. I.K-Nearest Neighbors-Regression
  2. Case-based Reasoning
40. Write Application of Data Mining
41. Essay on Data mining for business intelligence application