



SOMAIYA
VIDYAVIHAR UNIVERSITY

Semester: January 2024 – May 2024
Examination: In-Semester Examination

Maximum Marks: 30

Duration : 1 hour & 15 mins

Programme code: 1

Class: TY

Semester: VI (SVU 2020)

Programme: B.Tech Computer Engineering

Name of the Constituent College:

Name of the department:

K. J. Somaiya College of Engineering

COMP - Honours (DSA)

Course Code: 116h54C601

Name of the Course: Advanced Data Mining

Question No.		Max. Marks														
Q1	<p>Trace the results of using the Apriori algorithm on the grocery store example with support threshold $s = 33.34\%$ and confidence threshold $c = 60\%$. Show the candidate and frequent itemsets for each database scan. Enumerate all the final frequent itemsets. Also indicate the association rules that are generated and highlight the strong ones, sort them by confidence.</p> <table border="1"><thead><tr><th>Transaction ID</th><th>Items</th></tr></thead><tbody><tr><td>T1</td><td>HotDogs, Buns, Ketchup</td></tr><tr><td>T2</td><td>HotDogs, Buns</td></tr><tr><td>T3</td><td>HotDogs, Coke, Chips</td></tr><tr><td>T4</td><td>Chips, Coke</td></tr><tr><td>T5</td><td>Chips, Ketchup</td></tr><tr><td>T6</td><td>HotDogs, Coke, Chips</td></tr></tbody></table> <p style="text-align: center;">OR</p> <p>Consider the stream window as show below.</p> <p>a) Compute DGIM estimated number of 1's the last k positions, $k=5$. Show all calculations with explanation.</p> <p>b) Compute DGIM estimated number of 1's the last k positions, $k=15$. Show all calculations with explanation.</p> <div style="text-align: center;"><p>... 1 0 1 1 0 1 1 0 0 0 1 0 1 1 1 0 1 1 0 0 1 0 1 1 0</p><div style="display: flex; justify-content: center; align-items: flex-end; gap: 20px;"><div style="text-align: center;"><div style="border: 1px solid black; padding: 2px 10px; display: inline-block;">... 1 0 1</div><div style="margin-top: 10px;">↑ At least one of size 8</div></div><div style="text-align: center;"><div style="border: 1px solid black; padding: 2px 10px; display: inline-block;">1 0 1 1 0 0 0 1</div><div style="margin-top: 10px;">↑ Two of size 4</div></div><div style="text-align: center;"><div style="border: 1px solid black; padding: 2px 10px; display: inline-block;">1 1 1 0 1</div><div style="margin-top: 10px;">↑ One of size 2</div></div><div style="text-align: center;"><div style="border: 1px solid black; padding: 2px 10px; display: inline-block;">1 0 0 1</div><div style="margin-top: 10px;">↑ Two of size 1</div></div><div style="text-align: center;"><div style="border: 1px solid black; padding: 2px 10px; display: inline-block;">1 1 0</div><div style="margin-top: 10px;">↑ Two of size 1</div></div></div></div>	Transaction ID	Items	T1	HotDogs, Buns, Ketchup	T2	HotDogs, Buns	T3	HotDogs, Coke, Chips	T4	Chips, Coke	T5	Chips, Ketchup	T6	HotDogs, Coke, Chips	10
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