Database Administration & Management

Assignment 2

BSIT-7

Submission date:- Monday , 18th January 2024

Note:- Solve your assignment with your own handwriting and submit it to your class CR before the above mentioned date. Answer to the assignment will be provided after 18th January 2024 and there will be no submission after answer is given.

Problem 3.6 (**). Let $Q = \{q_1, \ldots, q_5\}$ be a set of queries, $A = \{A_1, \ldots, A_5\}$ be a set of attributes, and $S = \{S_1, S_2, S_3\}$ be a set of sites. The matrix of Figure 3.21a describes the attribute usage values and the matrix of Figure 3.21b gives the application access frequencies. Assume that $ref_i(q_k) = 1$ for all q_k and S_i and that A_1 is the key attribute. Use the bond energy and vertical partitioning algorithms to obtain a vertical fragmentation of the set of attributes in A.

	A1	A2	A3	A4	A5
Q1	1	0	1	0	1
Q2	0	1	0	1	1
Q3	1	0	1	0	1
Q4	0	0	1	0	1
Q5	0	1	1	1	0

Attribute Usage Matrix

	S1	S2	S3
Q1	5	15	0
Q2	15	0	10
Q3	10	10	3
Q4	2	20	0
Q5	5	5	5

Application Access Frequencies