

AHSANULLAH UNIVERSITY OF SCIENCE AND TECHNOLOGY
DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

Course No: CSE4125

Course Title: Distributed Database Systems

Spring 2019 | Quiz – 4 | Marks 20 | Time: 40 Minutes | Set – B | ID =

	Consider the following relations -																																																																							
	<div><div><table><tr><th>a</th><th>b</th><th>c</th><th>d</th></tr><tr><td>1</td><td>A</td><td>F</td><td>K</td></tr><tr><td>2</td><td>B</td><td>G</td><td>L</td></tr><tr><td>3</td><td>A</td><td>F</td><td>M</td></tr><tr><td>3</td><td>D</td><td>I</td><td>K</td></tr></table></div><div><table><tr><th>p</th><th>q</th><th>r</th><th>s</th></tr><tr><td>11</td><td>2</td><td>AA</td><td>X</td></tr><tr><td>11</td><td>2</td><td>BB</td><td>Y</td></tr><tr><td>12</td><td>3</td><td>CA</td><td>Z</td></tr><tr><td>11</td><td>4</td><td>BB</td><td>T</td></tr><tr><td>12</td><td>1</td><td>AC</td><td>T</td></tr></table></div></div>								a	b	c	d	1	A	F	K	2	B	G	L	3	A	F	M	3	D	I	K	p	q	r	s	11	2	AA	X	11	2	BB	Y	12	3	CA	Z	11	4	BB	T	12	1	AC	T	<div><table><tr><th>x</th><th>y</th><th>z</th></tr><tr><td>1</td><td>11</td><td>A</td></tr><tr><td>2</td><td>22</td><td>B</td></tr><tr><td>3</td><td>11</td><td>C</td></tr><tr><td>4</td><td>22</td><td>R</td></tr></table></div>				x	y	z	1	11	A	2	22	B	3	11	C	4	22	R	
a	b	c	d																																																																					
1	A	F	K																																																																					
2	B	G	L																																																																					
3	A	F	M																																																																					
3	D	I	K																																																																					
p	q	r	s																																																																					
11	2	AA	X																																																																					
11	2	BB	Y																																																																					
12	3	CA	Z																																																																					
11	4	BB	T																																																																					
12	1	AC	T																																																																					
x	y	z																																																																						
1	11	A																																																																						
2	22	B																																																																						
3	11	C																																																																						
4	22	R																																																																						
1.	Complete the following Database Profiles :-												4																																																											
	<div>Grade(R) = Card (R) = Site (R) = 1 Size (R) =</div> <table><tr><td></td><td>a</td><td>b</td><td>c</td><td>d</td></tr><tr><td>Size</td><td>2</td><td>1</td><td>3</td><td>4</td></tr><tr><td>Val</td><td></td><td></td><td></td><td></td></tr></table>					a	b	c	d	Size	2	1	3	4	Val					<div>Grade(S) = Card (S) = Site (S) = 2 Size (S) =</div> <table><tr><td></td><td>p</td><td>q</td><td>r</td><td>s</td></tr><tr><td>Size</td><td>2</td><td>1</td><td>3</td><td>4</td></tr><tr><td>Val</td><td></td><td></td><td></td><td></td></tr></table>					p	q	r	s	Size	2	1	3	4	Val					<div>Grade(T) = Card (T) = Site (T) = 3 Size (T) =</div> <table><tr><td></td><td>x</td><td>y</td><td>z</td></tr><tr><td>Size</td><td>2</td><td>2</td><td>2</td></tr><tr><td>Val</td><td></td><td></td><td></td></tr></table>					x	y	z	Size	2	2	2	Val																					
	a	b	c	d																																																																				
Size	2	1	3	4																																																																				
Val																																																																								
	p	q	r	s																																																																				
Size	2	1	3	4																																																																				
Val																																																																								
	x	y	z																																																																					
Size	2	2	2																																																																					
Val																																																																								
2.	We want to perform the query Q : (R JN _{a=q} S) CP (T JN _{x=q} S). Draw the optimization graph for the query.												2																																																											
3.	Estimate the cardinality and size of the query of question 2.												6																																																											
4.	Find the total transmission cost of performing (T JN _{x=q} S) at Site 3 by: (a) using the semi-join program and (b) without using the semi-join program. Which one is the better solution? Semi-join has selectivity ρ=0.9												8																																																											