INST123 — Databases for All
Assignment 3 – See ELMS for the deadline
Questions

This assignment has two questions, each of which is worth 25 points. Be sure to complete both questions.

 BEFORE YOU START: Create the *library* tables (*pls_fy2009_pupld09a* and *pls_fy2014_pupld14a*) if you haven't done so yet, using the table creation script and importing the data from the two related csv files linked on the Assignment 3 page. Please contact the INST123 instruction team if you encounter issues with the setup process.

Q.1) (25 points) The table *pls_fy2009_pupld09a* contains 9299 rows and *pls_fy2014_pupld14a* contains 9305 rows. Using appropriate JOINs and selecting the records with NULL values, identify which library systems existed in FY2014 that did not exist in FY2009. Replicate the following result set. Notice the sort order of the result and use the correct query structure to replicate the order shown.

	libname character varying (100)	stabr character varying (2)	libname character varying (100)
1	HOPE COMMUNITY LIBRARY	AK	[null]
2	IPNATCHIAQ LIBRARY	AK	[null]
3	KOYUK PUBLIC LIBRARY	AK	[null]
4	CLAY PUBLIC LIBRARY	AL	[null]
5	ECLECTIC PUBLIC LIBRARY	AL	[null]
6	GLENCOE PUBLIC LIBRARY	AL	[null]
7	HOBSON CITY PUBLIC LIBRARY	AL	[null]
8	JEFFERSON COUNTY LIBRARY COOPERATIVE	AL	[null]
9	MAGNOLIA SPRINGS PUBLIC LIBRARY	AL	[null]
10	MARENGO LIBRARY SYSTEM	AL	[null]
11	MUNFORD PUBLIC LIBRARY	AL	[null]
12	OSCAR JOHNSON MEMORIAL LIBRARY	AL	[null]
13	PICKENS COUNTY COOPERATIVE LIBRARY	AL	[null]
14	PINSON PUBLIC LIBRARY	AL	[null]
15	R.L. HADDEN MEMORIAL LIBRARY	AL	[null]
16	SOUTHSIDE PUBLIC LIBRARY	AL	[null]
17	STEELE PUBLIC LIBRARY	AL	[null]
18	TOWN CREEK PUBLIC LIBRARY	AL	[null]
19	GENTRY PUBLIC LIBRARY	AR	[null]
20	HEMPSTEAD COUNTY LIBRARY	AR	[null]

 121 rows returned (This is just a partial display of the 121 rows)

Side Note: The number of rows in the result set may not be equal to the difference between the numbers of rows in the two base tables, because just as there may be some library systems that existed in FY2009 but closed before FY2014, some of the systems that existed in FY2014 may have been created after FY2009.

Q.2) (25 points) In looking at the two library tables (*pls_fy2009_pupld09a* and *pls_fy2014_pupld14a*) we saw that visits for some library systems increased or decreased from 2009 to 2014. Both the 2009 and 2014 library survey tables contain the column **libraria**, which gives the total number of FTE librarian employees. Using the code in Listing 8-13 in Chapter 8 as an example, calculate the percent change in the number of FTE librarians in each state/territory from FY2009 to FY2014. Your result set should replicate the following. Notice the sort order of the result and use the correct query structure to replicate the order shown.

	stabr character varying (2)	librarians_2009 numeric	librarians_2014 numeric	pct_change_librarians numeric
1	PR	19.00	45.00	136.84
2	DC	117.40	147.00	25.21
3	ND	113.59	132.59	16.74
4	MO	696.33	796.60	14.40
5	CO	814.00	909.35	11.72
6	LA	938.66	1048.21	11.67
7	SD	161.69	179.55	11.08
8	KY	1080.43	1193.75	10.49
9	SC	548.63	602.36	9.80
10	MS	573.00	625.66	9.20
11	VT	192.95	208.49	8.06
12	OK	629.96	678.71	7.74
13	TX	2261.59	2428.00	7.36
14	UT	337.38	356.67	5.73
15	MA	1721.58	1798.45	4.47
16	ID	200.23	208.36	4.08
17	WI	1094.66	1134.15	3.61
18	AL	690.09	714.72	3.57
19	IA	947.56	978.63	3.28
20	WV	350.99	361.58	3.02
21	NC	716.98	732.89	2.22

52 rows returned (This is just a partial display of 52 rows)

HINT: Watch out for negative values in the base tables, and be careful that you do not attempt to divide by zero. You should work only with positive (non-negative and non-zero) **libraria** values, otherwise you may end up with more than 51 result rows.