IS 441 Homework 4: SQL-1

Do not do hard-coding: your codes must be universal; the data used is only a small portion of a much larger database.

Do not “translate logics” – codes must deliver the intended logic as stated; “translations” often reslt in errors

# SQL – Problem Set 1

## Write the SQL statements needed to complete each of tasks listed below. The data are in a file called SQL1-2017.mdb. // Two points each unless indicated otherwise.

|  |  |
| --- | --- |
| Create and run SQL commands in Access, print the results of the queries. Take the screenshot of each query, select the data portion, and paste it by the SQL code.  Suggestion:  Make a 2-column table, paste the SQL code in  the left column, and screenshot in the right column.  Example of a screenshot:  Please do NOT sort the results unless required |  |

Problems #1~3: 2 points each; #4, 5, 6, and 7: 3, 3, 5, and 4 points, respectively.

1. List the employees (Num, LName, FName) who are not assigned to a project yet (consider NULL).
2. List the first and last names, project number, and hire date for employees who have been assigned to projects; sort the results by project number, and within each project, further sort by hired date (earliest first). – The example and practice on “sorting on two fields.”

1. List EMP\_NUM, EMP\_LNAME, and EMP\_HIREDATE for employees who were hired before the year 2000, or hired since the year 2010 with a bonus percentage 7.5 or higher. (Reminder: In SELECT-clause, dates need to be enclosed with #).
2. (New for Summer ‘19) List the average bonus percentage (EMP\_PCT), earliest hire date, and number of employees for each project, sort the result by the average, highest first.
3. List the rows of employees who do not have jobs 501, 503, or 507; show two different SQL codes (a “brute force way”, and a more “compact” way – consider IN) [***Do not do “logic translation”*** – “translations” are often wrong and not applicable to future data]
4. (a) List the average bonus percentage by projects (of course display project numbers), for those **projects** whose average percentage is at least 7.5. – This involves GROUP BY

(b) List the average bonus percentage by projects (project number), from those **employees** whose percentage is at least 7.5. Compare (a) and (b), explain your result.

Compare (1) # of rows;

(2) value of AVGs

[Hint: Intention is to let you compare WHERE and HAVING]

1. (a) List the average bonus percentage by projects (project number) [Of course show project numbers].

(b) What would happen if you also include the employees’ last names in the SELECT clause?

– in (b), **Do NOT change the main structure of the code** from (a) (! ! ! ! ! ! ! – this “ridiculous” annotation is to force you not to miss the instruction which was missed by 40-50% of students in the past) – keep part (a), **just add the last name field, and observe**. Report the result, and provide your explanation. [Ref PP. 230-231]

All queries in this homework **involve only one table**. You do not need to join tables.