OPIM 5272 – Fall 2019

This exam consists of 20 questions, each worth 5 points, to be completed individually. You should fill out the blank answer sheet titled "exam1_submission.sql".

Unless otherwise specified you should assume that the queries should be based off of the Oracle HR Schema. As with homework, the queries that you design should not work only for the data that exists in the table - the design of the query should be independent of the data that is in the table.

ACKNOWLEDGEMENT AND AGREEMENT TO RULES

When completing the exam, you may use any references, websites, or class documents that you would like, except for interactions with other people and/or looking at someone else's exam. This includes emails, text, tweets, message boards, Facebook, or any other medium where you can correspond regarding the problems on the exam. You can read, for example, message boards, but absolutely cannot post anything. Any attempt to cheat will result in the highest degree of sanctions, as outlined in the University of Connecticut Student Code and/or other documents regarding academic dishonesty released by the University of Connecticut. By signing below, you agree that you have taken the exam individually and according to the rules/guidelines listed above and that you will NOT discuss any problems related to the exam with anyone until after the solutions are released. You cannot, under any circumstances, share digital versions of your answer with anyone at any point until after the exam time period has ended.

Your answer sheets MUST BE SUBMITTED BEFORE 9:00pm on October 10th, 2019. Failure to submit your answers by that time will result in a 0 on the exam. My suggestion is that you submit versions regularly, so that there aren’t any major issues.

Good luck!

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********** Problem 1 **********

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Create a query that reports the maximum and average salaries of employees in the employees table, broken down by job ID. Include the job ID in the output. Sort the results by average salary in descending order and remove any employees that have a specified commission percentage.

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********** Problem 2 **********

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Create a query to display all of the columns from the job history table for which the department ID is strictly between 20 and 100.

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********** Problem 3 **********

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Create a query that displays, for each employee in the employees table, the employee's first name, email and ending portion of the employee's phone number. If the phone number listed is domestic, then output the last two digits. If the employee's phone number is international, then output the last four digits.

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********** Problem 4 **********

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Create a query to display all of the columns from the job history table for which the job id contains “AC". Sort the results by start date in descending order.

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********** Problem 5 **********

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Create a query to display the first name, manager id, and total salary for every employee in the employees table. The total salary should be the employee's salary plus, if the employee's commission percentage is not NULL, the commission percentage times 120000. Sort the data by manager id in ascending order with nulls appearing last.

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********** Problem 6 **********

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Create a query to display, for each employee in the employee's table, the employee's last name, hire date, and salary review date, which is the first Wednesday after six months of being hired. Label the column "For Review". Format the dates to appear in "[Day of week], [Monday] [Day], YYYY" format; for example, the format "Monday, July 28, 2000."

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********** Problem 7 **********

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Create a query to display the number of employees in the employees table with salary greater than 5000 for each department ID. Also output the department IDs. The results shouldn't include employees with no department ID listed. Order the results by the number of employees with that department ID.

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********** Problem 8 **********

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Create a query to display, for each employee in the employee's table, the last name, hire date, and day of the week on which the employee was hired. Order the results first by commission percentage, with nulls appearing first, and then by last name.

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********** Problem 9 **********

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Create a query that displays the number of employees listed in the employees table that have an international phone number.

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********** Problem 10 **********

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Create a query to display the maximum salary of all employees in the employees table, rounded to the nearest thousand.

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********** Problem 11 **********

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Create a query that displays, for every department in the departments table, the department name and location ID, ordered by location ID.

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********** Problem 12 **********

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Create a query that outputs all of the unique department IDs among those employee's in the employees table. Include a NULL in the output if there are any employees with a NULL department id.

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********** Problem 13 **********

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Create a query that displays, among those employee's listed in the employees table, each job id that appears in the employees table and the maximum salary among all employees with that job id. Only consider those employees that have a salary less than 8000, and present an output only if the average salary of the employees with that job id that are considered is greater than 5000.

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********** Problem 14 **********

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Create a query that displays the unique first 3-digits of the phone numbers of the employee's in the employees table.

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********** Problem 15 **********

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Create a query that calculates the average salary of employees in each department and reports the minimum value among those values. For example, if there were three departments, and the average salaries of the employees in those departments is 1000, 3000, 4000, the query should output the single value 1000.

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********** Problem 16 **********

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Create a query which reports the percent of employees in the employees table that either have a commission percentage or have a salary greater than 8000.

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********** Problem 17 **********

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Create a matrix query that has a row for every department and a column for job IDs AC_MGR, ST_MAN, AD_VP, and MK_MAN, which reports NULL if no employee has that job ID in that department and otherwise reports the number of employees that have that job ID in that department.

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********** Problem 18 **********

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Create a query which reports the percent of employees that have a space in either their first name or their last name.

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********** Problem 19 **********

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Create a query that reports the variance, rounded to the nearest hundredth, of the salaries of the employees for each department, counting to the average only those employees that have a salary greater than 4500. Remove any department from the output if the department has an average salary below 7000. Report the associated department IDs as well.

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********** Problem 20 **********

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Create a query that reports the average salary of all employees with a given department ID, that is input by a substitution variable.