EXAM 1 – OPIM 5272 – FALL 2019 – Practice Exam

**** Please note that this practice exam is not necessarily a representation of the length and or content of the actual exam. It is simply used to provide additional practice exercises on topics related to the coverage of Exam 1.

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********** Problem 1 – 5 points **********
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Create a query to help the Payroll department calculate the first pay date for each of the employee in the employees table. Employees who are hired in the first 15 days of the month are paid on the last Friday of the same month. Those hired after the 15th are paid on the first Friday of the following month. The output should contain employee id, hire_date and first pay date.

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********** Problem 2 – 5 points **********
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Write a query to display the department_id and the salary of the highest paid employees in that department over all employees in the employees table.

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********** Problem 3 – 5 points **********
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Create a query that calculates the CLAIM ELIGIBILITY DATE, the date for which employees are eligible for retirement benefits. The date can be calculated as the first Monday after 20 years of service since their hire date. If the 20 years completion date falls on a Monday, that will be the eligible date for claiming benefits. If it falls on any other day of the week, the employees have to wait until next Monday for the same. The output should contain 3 columns - employee id, hire date, and date for claiming retirement benefits.

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********** Problem 4 – 5 points **********
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Create a query that categorized employees into two groups - EVEN and ODD, based on the employee id being even or odd. The output should contain two columns. The first is the employee's last name, and the second is an indicator of whether or not the employee's ID is even or odd. Exclude any employees with an international phone number.

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********** Problem 5 – 5 points **********
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Write a query to display the characters in the first half of the employee's last name in capital letters and the rest in small letters. For last names that have odd number of characters, display the (first half + 1) characters in CAPITAL letters and the rest in lower case letters.
Example: JOE to be displayed as JOe; ROSS to be displayed as ROss.

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********** Problem 6 – 5 points **********
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Create a query that reports the average of the minimum salary of all employees in each department.

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********** Problem 7 **********
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Create a query that outputs the number of employees managed by each manager, omitting any employees that have an "a" anywhere in their name, whether it be lower case or upper case.

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********** Problem 8 – 5 points **********
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Write a query that displays the remaining number of days in the current year since sysdate. The query should work irrespective of whether it is a regular year or leap year.

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********** Problem 9 – 5 points **********
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Create a query that displays the unique first three-digits (area code) of the domestic phone numbers of the employee's in the employees table. The query should also display two additional columns reporting the number of employees and minimum salary of those employees that have the corresponding area code. Order the results in decreasing order of the minimum salary.

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********** Problem 10 – 5 points **********
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Create a query that uses data from the job history table. The query should calculate the total number of full years each unique employee has worked for the organization irrespective of the position served.

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********** Problem 11 – 5 points **********
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Create a query that displays a single column with computed binary values. The value should be 1 if the last 4 digits of employee's phone number has the digit 5 and 6, and should be 0 otherwise.

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********** Problem 12 – 5 points **********
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Create a query that displays as a single value the number of employees that have a 5 or 6 in the last 4 digits of the employee’s phone number.

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********** Problem 13 – 5 points **********
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Create a query to replace “S or s” to “K”, “K” or “k” to “A”, “A or a” to “E”, and ”E or e” to “S” for each last name in the employees table. Display the last name and the new last name, sorted by new last name in descending order. As an example, if “SKQAE” is the last name, the new last name should be “KAQES”.

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********** Problem 14 – 5 points **********
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Create a query to calculate the total number of days that each manger (specified by manager id) has managed his employees until the current date. Order the results by number of days in descending order. Assume every employee has been hired by their current manager and report total full days.

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********** Problem 15 – 5 points **********
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Create a query to display the total number of employees, median salary, average salary and type of skew for each job ID. If the median equals the mean then it is symmetric, if the median is less than the mean then it is right skewed, and if the median is greater than the mean then it is left skewed. Order the results by total salary in ascending order. Round all values to nearest whole number.

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********** Problem 16 – 5 points **********
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Create a query that reports whether a phone number is domestic or international for all employees in the employees table. A phone number is to be reported as ``Int'' when the sum of positions of periods (“.”) is greater than 15, and ``Dom'' otherwise. You must use this rule, and only this rule, to determine if a phone number is international or domestic. Please report two columns; one with the phone number, and one with the international versus domestic tag. Please note that any given phone number won’t have more than three “.”.

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********** Problem 17 – 5 points **********
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Write a query to create a username for every employee in the employee’s table. The username should be the first letter of the employees first name, the last letter of the employees last name, the month (in MON format) of the employee’s hire date, followed by the total number of vowels in the employee’s first and last name.

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********** Problem 18 – 5 points **********
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Write an SQL query that will display data from the employees table. The output should have two columns which display the last name and salary of the employees. Output only those instances for which the first initial in their last name is not a `K', and whose salary is less than a value to be input by the user using a substitution variable.