## **ST1501 Data Engineering**

## **Class Activity (Practical C5/C6 Submission)**

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| **Class** | DIT/FT/2A/14 |

**Practical C5/C6 Submission Question (Submission Required)**

After completing Practical C5 and Practical C6, submit the SQL and screen shots of the following exercises.

1. Write the SQL statement to list the staff name, the salary and bonus of staff that are given pay. Salary is computed as pay plus allowance. Label the calculated salary as salary. Bonus is calculated as 2.25 month of salary. Sort the result by using the formula for bonus.

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| Type the SQL  SELECT  Staff\_Name,  ISNULL(Pay, 0) + ISNULL(Allowance,0) Salary,  2.25\*(ISNULL(Pay, 0) + ISNULL(Allowance,0)) Bonus  FROM  Staff\_Relation  WHERE  Pay IS NOT NULL  ORDER BY  2.25\*(ISNULL(Pay, 0) + ISNULL(Allowance,0)); |
| Paste the screen shot of query result |

1. Write the SQL statement to list the staff name and number of years in service. Sort the result in descending order of the number of years in service.

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| Type the SQL  SELECT  Staff\_Name,  YEAR(GETDATE())-Join\_Yr 'Years in Service'  FROM  Staff\_Relation  ORDER BY  [Years in Service] DESC; |
| Paste the screen shot of query result |

1. Write the SQL statement to list the average lab fee, treating null as it is, and average lab fee, treating null as zero. Relabelling the first column as ‘Mean Lab Fee’ and the second column as ‘Mean Lab Fee – Null treated as zero’. Explain the difference in the answers.

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| Type the SQL  SELECT  AVG(Lab\_Fee) 'Mean Lab Fee',  AVG(ISNULL(Lab\_Fee, 0)) 'Mean Lab Fee – Null treated as zero'  FROM  Course\_Relation; |
| Paste the screen shot of query result |
| Your Explanation  The first column treated null value as if the column does not exist. Hence, to compute the average lab fee, the sum is divided by the number of cells that are not null.  The second column treated null value as 0. Hence, to calculate the average lab fee, the sum is divided by the total number of cells/rows. |

1. Write the SQL statement to find out how many staff is there in Royal Poly.

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| Type the SQL  SELECT  COUNT(Staff\_No) 'Total Number of Staff'  FROM  Staff\_Relation; |
| Paste the screen shot of query result |

1. Write the SQL statement to list the highest and the lowest pay in Royal Poly.

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| Type the SQL  SELECT  MAX(Pay) 'Highest Pay',  MIN(Pay) 'Lowest Pay'  FROM  Staff\_Relation; |
| Paste the screen shot of query result |