**TEMPLATE FOR ASSIGNMENT #4 REPORT**

**Student Name and CCID:**

1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (Name) \_\_\_\_\_\_\_\_\_\_\_ (CCID)
2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (Name) \_\_\_\_\_\_\_\_\_\_\_ (CCID)
3. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (Name) \_\_\_\_\_\_\_\_\_\_\_ (CCID)

**By submitting this assignment the students named above confirm that they have worked on it themselves without any help by other people. If any external resources were used please state which ones and how they were used:**

**PART 1**

**Task A (1) (no index):**

|  |  |
| --- | --- |
| **Cardinality of Table Parts** | **Average Processing time for index free Q1 (ms)** |
| 100 |  |
| 1000 |  |
| 10,000 |  |
| 100,000 |  |
| 1,000,000 |  |

|  |  |
| --- | --- |
| **Cardinality of Table Parts** | **Average Processing time for index free Q2 (ms)** |
| 100 |  |
| 1000 |  |
| 10,000 |  |
| 100,000 |  |
| 1,000,000 |  |

**Task B (2):**

|  |  |
| --- | --- |
| **Compare, contrast and explain the trends observable in both tables above (Task A)** | |
|  | |

**Task C (3) (using index):**

|  |  |
| --- | --- |
| **Cardinality of Table Parts** | **Average Processing time for indexed Q1 (ms)** |
| 100 |  |
| 1000 |  |
| 10,000 |  |
| 100,000 |  |
| 1,000,000 |  |

|  |  |
| --- | --- |
| **Cardinality of Table Parts** | **Average Processing time for indexed Q2 (ms)** |
| 100 |  |
| 1000 |  |
| 10,000 |  |
| 100,000 |  |
| 1,000,000 |  |

**Task D (4):**

|  |  |
| --- | --- |
| **Compare, contrast and explain the trends observable in both tables above (Task C)** | |
|  | |

**Task E (5):**

|  |
| --- |
| **Compare, contrast and explain the trends observed in Task D to the trends observed in Task B. Discuss the cost-benefit of the index space cost and query performance.** |
|  |

**PART 2**

**Task F (6) (no index):**

|  |  |
| --- | --- |
| **Cardinality of Table Parts** | **Average Processing time for index-free Q3 (ms)** |
| 100 |  |
| 1000 |  |
| 10,000 |  |
| 100,000 |  |
| 1,000,000 |  |

**Task G (7) (using index):**

|  |  |
| --- | --- |
| **Cardinality of Table Parts** | **Average Processing time for indexed Q3 (ms)** |
| 100 |  |
| 1000 |  |
| 10,000 |  |
| 100,000 |  |
| 1,000,000 |  |

**Task H (8):**

|  |
| --- |
| **Compare, contrast and explain the trends observed in Task F to the trends observed in Task G. Discuss the cost-benefit of the index space cost and query performance.** |
|  |

**PART 3**

**Task I (9) (no index):**

|  |  |
| --- | --- |
| **Cardinality of Table Parts** | **Average Processing time for no-index Q4 (ms)** |
| 100 |  |
| 1000 |  |
| 10,000 |  |
| 100,000 |  |
| 1,000,000 |  |

**Task J (10):**

|  |
| --- |
| **Define an index that you believe will optimize Q4 and explain why you think so.** |
|  |

**Task K (11) (using index):**

|  |  |
| --- | --- |
| **Cardinality of Table Parts** | **Average Processing time for indexed Q4 (ms)** |
| 100 |  |
| 1000 |  |
| 10,000 |  |
| 100,000 |  |
| 1,000,000 |  |

**Task L (12):**

|  |
| --- |
| **Compare, contrast and explain the trends observed in Task K to the trends observed in Task I. Discuss the cost-benefit of the index space cost and query performance.** |
|  |

**PART 4**

**Task M (13) (no index):**

|  |  |
| --- | --- |
| **Cardinality of Table Parts** | **Average Processing time for index-free Q5 (ms)** |
| 100 |  |
| 1000 |  |
| 10,000 |  |
| 100,000 |  |
| 1,000,000 |  |

**Task N (14) (no index):**

|  |  |
| --- | --- |
| **Cardinality of Table Parts** | **Average Processing time for index-free Q6 (ms)** |
| 100 |  |
| 1000 |  |
| 10,000 |  |
| 100,000 |  |
| 1,000,000 |  |

**Task O (15):**

|  |
| --- |
| **Compare, contrast and explain the trends observed in Task M to the trends observed in Task N** |
|  |

**Task P (16):**

|  |
| --- |
| **Define an index that you believe will optimize Q6 and explain why you think so** |
|  |

**Task Q (17) (with index):**

|  |  |
| --- | --- |
| **Cardinality of Table Parts** | **Average Processing time for indexed Q6 (ms)** |
| 100 |  |
| 1000 |  |
| 10,000 |  |
| 100,000 |  |
| 1,000,000 |  |

**Task R (18):**

|  |
| --- |
| **Compare, contrast and explain the trends observed in Task N to the trends observed in Task Q. Discuss the cost-benefit of the index space cost and query performance.** |
|  |