# horizontal lineDatabase R&D Exercise

Assignment 10

I confirm that this is my own work and that use of material from other sources, including the Internet, has been properly and fully acknowledged and referenced.

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**Total in points** (100 points total): \_\_\_\_\_

**Professor’s Comments:**

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**Question 1:** **Work out an example of** **distributed query processing.**

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We use the example in the textbook. Assuming that every employee is related to a department, the result of this query will include 10,000 records. Suppose that each record in the query result is 40 bytes long. The query is submitted at a distinct site 3. Transfer the DEPARTMENT relation to site 1, execute the join at site 1, and send the result to site 3. In this case, 400,000 + 3,500 = 403,500 bytes must be transferred.

**Question 2:** **Discuss and contrast the following locking approaches:** **primary site 2PL,** **primary copy 2PL, and** **distributed 2PL.**

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| primary site 2PL | A single site handles all locks |
| primary copy 2PL | Lock managers distributed to several sites. |
| distributed 2PL | Lock managers distributed to every site. |

**Question 3: What is meant by** **eventual consistency and** **BASE transactions?**

Replication Models are one of the characteristics in NOSQL Systems. Master-slave replication is one of the major replication models. Eventual consistency is used in replication models that make the slave copies eventually be the same as the master copy. **Question 4: What is meant by** **multi-version concurrency control?**

Multi-version concurrency control refers to those protocols for concurrency control keep copies of the old values of a data item when the item is updated.