**Week 9: Discussion Question**

Describe the three data fragmentation strategies. Give an example of at least one of the strategy?

**Horizontal Fragmentation** splits tables by rows. When distributing a database using this form of fragmentation, there can be no overlapping of key content. For instance, if a database table is fragmented in such a way that employee records are entered at the building where they work, then these employee records cannot be updated from a building where they do not work and there must not be an M:N relationship between buildings and employees.

**Vertical Fragmentation** splits tables by columns, creating multiple tables. For instance, if we had a table for students, with multiple columns, such as student_id, name, address, phone_number, and such. To vertically fragment the table into a distributed database solution, we might break phone_number out of the table columns, creating a new table with just student_id and phone_number. With the primary key copied, we can still select all of a student’s data by joining the two tables. Vertical fragmentation causes complications when we delete a record from one table, as there must be referential integrity in place to delete the corresponding record from the other tables.

**Mixed Fragmentation** combines horizontal and vertical fragmentation strategies, splitting tables by rows and then further splitting them by columns.

**References:**
