Prep7 - Part 2 of 2

Functional Dependencies

Consider this instance of a relation R(L, M, N, O):

L	M	N	O
8	5	6	0
8	5	7	0
6	1	8	9
7	1	9	8

Which of the following functional dependencies are satisfied by this instance?

- [x] **LO → M**
- [x] **N → M**
- [ ] **M → O**
- [x] **O → M**
- [ ] **MO → LN**

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✔ Your solution is complete.

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FD conclusion

Suppose a functional dependency is satisfied by an instance of relation R. Does that mean that the FD holds in R?

- [ ] **No, we need to see more instances of R before we can make this conclusion.**

- [x] **No, we need to know that it must be satisfied by *every* possible instance of R before we can make this conclusion.**
- [ ] **Yes, this is sufficient to conclude that the FD holds in R.**

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How many, part 1 ✔

Suppose that we have a relation R(A, B, C, D), and that B → ACD. Suppose also that we have just a single tuple {5, 2, 1, 9}. How many more tuples can we add with the value 5 for A?

- [ ] **none**
- [ ] **at most one, and the values of the other attributes can be anything**
- [ ] **at most one, but there are constraints on the values of the other attributes**
- [ ] **an unlimited number, and the values of the other attributes can be anything**
- [x] **an unlimited number, but there are constraints on the values of the other attributes**

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How many, part 2 ✔

Again, suppose that we have a relation R(A, B, C, D), and that B → ACD, and that we have just a single tuple {5, 2, 1, 9}. How many more tuples can we add with the value 2 for B?

- [x] **none**

- [ ] **at most one, but there are constraints on the values of the other attributes**
- [ ] **an unlimited number, and the values of the other attributes can be anything**
- [ ] **an unlimited number, but there are constraints on the values of the other attributes**

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Equivalent sets of FDs ✔

Suppose we have a relation R(A, B, C, D) and that this set of FDs holds in R: S = {C → D, A → BC}. Which of these sets of FDs are equivalent to S?

- [ ] **{A → D, A → C, C → D}**
- [ ] **{A → B, B → C, C → D}**
- [x] **{A → B, A → C, C → D}**
- [x] **{A → BC, A → D, C → D}**
- [ ] **{A → D, A → B, C → D}**

History Submit

✔ Your solution is complete.

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