**(67506) Databases – Spring 2022 – Exercise (3)**

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***Question (4):***

1. The claim is **TRUE**.

Let be a functional dependency that holds over . We show that satisfies one of the BCNF conditions. There are 2 cases:

1. If then is a super-key (), indeed, it is a key.
2. If then , that is, is trivial, otherwise, there is a contradiction to non-redundancy of . Assume towards contradiction that and , then there are two subsets of attributes such that and , then , contradiction.
3. The claim is **FALSE**.

Counterexample: let and a minimal cover over are , for the dependency we create the subschema with , then the dependency violates the BCNF, as neither is a super-key () nor the dependency is trivial ().