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COP4710 Database Systems

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## **Checkpoint 3.1:**

1) No, this is not a table. This is not a table because the color attribute has multiple different strings for one record which is not possible unless mapped as a multivalued attribute which this does not match.

3) Yes, this is a table. This is a table because each record has the right amount of values in them.

## **Checkpoint 3.2:**

1) Yes, the names are implied by giving the Empno.

3) No, the second record seems to have multiple names attached to it so the name is not implied by the Empno.

## **Checkpoint 3.3:**

1) I suppose that this table would need more than one key to be accessible, so this could be color and make or make and year.

2)

|  |  |  |
| --- | --- | --- |
| **Name** | **HomePhone** | **CellPhone** |
| Jones | 111-1111 | 333-3333 |
| Jones | 222-2222 | 333-3333 |
| Smith | 444-4444 | 555-5555 |
| Smith | 444-4444 | 666-6666 |
| Adams | 777-7777 | 112-1212 |
| Adams | 888-8888 | 112-1212 |
| Adams | 777-7777 | 113-1313 |
| Adams | 888-8888 | 113-1313 |

## **Checkpoint 3.4:**

1) Yes, because these two primary keys are implying the values given by other attributes.

2) No, these are not 2NF because we do not have two primary keys.

## **Checkpoint 3.5:**

2) The table is in 2NF because the attributes A, B imply directly and indirectly the other attributes in the table.

## **Checkpoint 3.6:**

1) The MK of R is A because it is the one that implies all other attributes. It does not need to be decomposed further.

2) The MK of R is A, as well as B because from these attributes we can imply all other attributes in the table. The implication goes as follows: AB→CD

5) The MK of R is A, and B because from these two keys the table can be implied. The decomposition goes as follows: AB→CDE

7) The MK of R is A because from A we can imply all values of B and C. The decomposition is: A→BC

## **Chapter 3 Exercises:**

3.3) The decomposition would go as follows: Name, Car → Address, City, State, Car, Color, Year.