LET'S START WITH DBMS :)

Normalisation and its types

Second Normal Form (2NF)

A relation is in 2NF if it satisfies the following conditions:

1. It is in First Normal Form (1NF).
2. It has no partial dependency, which means no non-prime attribute is dependent on a part of any candidate key.

When partial dependency is there in a table?
(LHS is a proper subset of Candidate key AND RHS is a non-prime attribute)

non-prime : an attribute that is not part of any candidate key

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Normalisation and its types

Second Normal Form (2NF)

CustomerId	OrderId	OrderName
1	1	Muffin
2	1	Muffin
1	2	Sugar
4	2	Sugar

Candidate key : CustomerId+OrderId
Prime attribute :{CustomerId,OrderId}
Non-prime attribute : {OrderName}

In this relation OrderName is dependent on OrderId only, according to OrderId we provide the OrderName

OrderName is determined by only OrderId.

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Normalisation and its types

2NF

CustomerId	OrderId	OrderName
1	1	Muffin
2	1	Muffin
1	2	Sugar
4	2	Sugar

CustomerId	OrderId
1	1
2	1
1	2
4	2

OrderId	OrderName
1	Muffin
1	Muffin
2	Sugar
2	Sugar

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Normalisation and its types

Second Normal Form (2NF)

Consider there is a relation R(A,B,C,D) with FD : AB->C, AB->D, B->C. Find if this is in 2NF?

1.Identify the Candidate Key
A+={A}
B+={B,C}
C+={C}
D+={D}
AB+={A,B,C,D}

So, AB is a candidate key here.

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Normalisation and its types

Second Normal Form (2NF)

2. Check for Partial Dependencies
    1. LHS is a proper subset of Candidate key AND
    2. RHS is a non-prime attribute

FD: AB->C, AB->D, B->C
CK : AB
prime attribute : {A,B} non-prime : {C,D}

a. AB->C (fully dependent, AB is not a proper subset of candidate key)
b.AB->D (fully dependent, AB is not a proper subset of candidate key
c.B->C (partial dependency as B is a proper subset of CK and C is non-prime)

Not in 2NF.