

Normalization



Second normal form (2 NF)

- A relation is second normal form, if it is in first normal form and contains no partial functional dependency.
- That means every non-key attribute is fully functionally dependent on the full set of primary key attribute.
- If a relation is in second normal form if any one of the following conditions applies
 - A relation contains only one primary key.
 - No non-key attribute in the relation.



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- For example, a relation student contains attribute like Sno, Sname, Course_Id and date completed.
- In this example, the primary key is a composite key of Sno, course_Id. Here the relation STUDENT is not in second normal form because there is a partial functional dependency.
- Here the non-key attributes Sname, Address is functionally dependent on the part of the primary key (Sno).
- So we decompose the above relation into new relations.

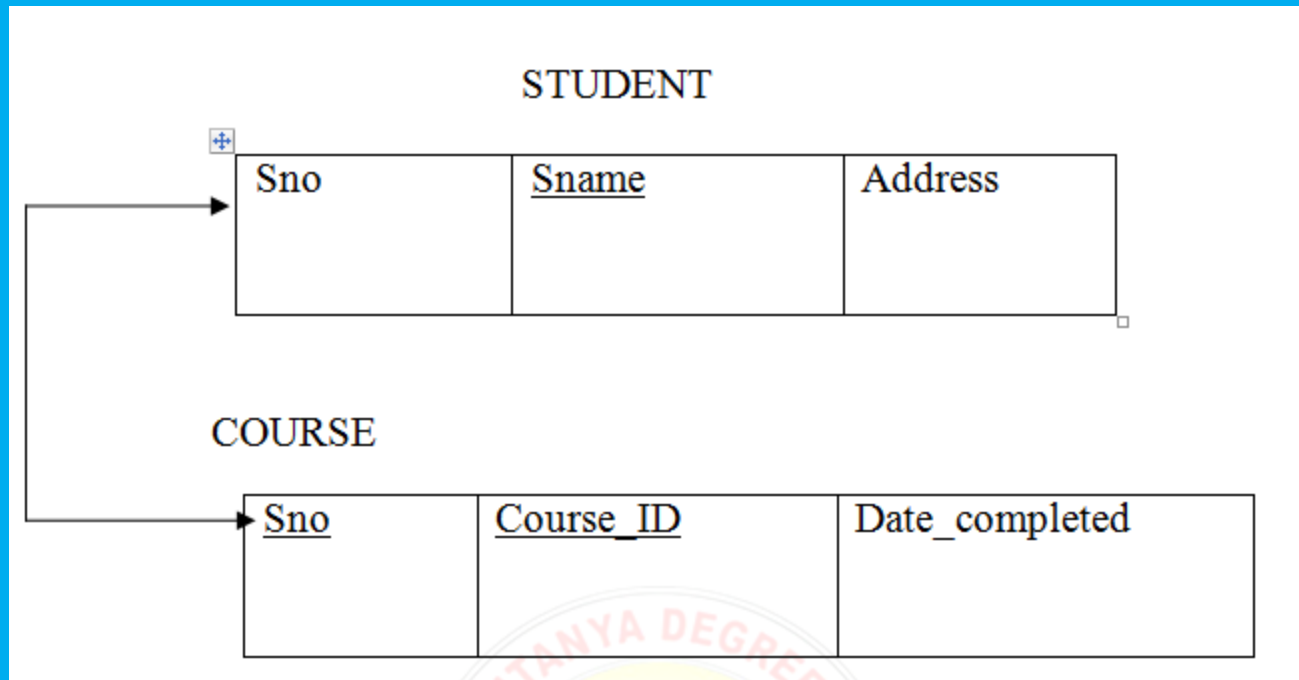
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STUDENT				
<u>Sno</u>	Sname	Address	Course_ID	Date_completed

- Sno -----> Sname (partial functional dependency)
- Sno -----> Address (Partial functional dependency)
- Sno, Course_Id -----> Date _completed (fully functional dependency)



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