

Normalization – is the process to remove the anomalies from the SQL table.

Student	Marks
Miran	65,75,85
Faiz	84,57,96
Sadik	88,78,79
Ahmed	64,53,91
Galib	44,78,46
Sadik	78,35,40

1 NF – First Normal Form

Every individual value must have to be in an individual cell of the table.

Student	C	C++	Java
Miran	65	75	85
Faiz	54	57	96
Sadik	88	78	79
Ahmed	64	53	91
Galib	44	78	46
Sadik	78	35	40

2 NF – Second Normal Form

2NF (Second Normal Form) in databases ensures a table is in 1NF (First Normal Form) and eliminates partial dependencies. Every table must have a prime attribute to identify the unique records

Rollno	Student	C	C++	Java
1	Miran	65	75	85
2	Faiz	54	57	96
3	Sadik	88	78	79
4	Ahmed	64	53	91
5	Galib	44	78	46
6	Sadik	78	35	40

3 NF – Third Normal Form

The table is said to be in 3 NF only when it is in 2NF and there is no transitive dependency in the table.
The all attributes of the table must have to be dependent on the Prime Attribute only.

Rollno	Student	C	C++	Java	Department ID	Department Name
1	Miran	65	75	85	1	CSE
2	Faiz	54	57	96	2	ENTC

3	Sadik	88	78	79	1	CSE
4	Ahmed	64	53	91	3	CIVIL
5	Galib	44	78	46	2	ENTC
6	Sadik	78	35	40	3	CIVIL

$A \rightarrow B \rightarrow C$ (transitive dependency) $\Leftrightarrow A \rightarrow C$

Student table

Rollno	Student	C	C++	Java	Department ID
1	Miran	65	75	85	1
2	Faiz	54	57	96	2
3	Sadik	88	78	79	1
4	Ahmed	64	53	91	3
5	Galib	44	78	46	2
6	Sadik	78	35	40	3

Department Table

Department ID	Department Name
1	CSE
2	ENTC
3	CIVIL