

CSC 261 Milestone 3 Task A

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To convert our database schema to BCNF, we can write out each of the database's functional dependencies such that for every FD $X \rightarrow Y$ must satisfy at least one of the following properties:

1. Y is a subset of X, i.e. $X \rightarrow Y$ is a trivial FD.
2. X is a key for relation R.

Here are all of our database schema's functional dependencies:

SONG:

Functional Dependencies:

$\text{Song_name} \rightarrow \text{Artist, Album, Date_modified, Date_created}$

Candidate Key: `Song_name`

ARTIST:

Functional Dependencies:

$\text{Artist_name} \rightarrow \text{Language, Sno, Ano}$

Candidate Key: `Artist_name`

ALBUM:

Functional Dependencies:

$\text{Album_name, Artist} \rightarrow \text{Language, Year, Ano}$

Candidate Key: `Album_name, Artist`

LANGUAGE:

Functional Dependencies:

$\text{Language_name} \rightarrow \text{Sno}$

Candidate Key: `Language_name`

FILE:

Functional Dependencies:

$\text{File_name} \rightarrow \text{File_type, Song, Artist, Album}$

Candidate Key: `File_name`