

Student(s_id, name, address, age, sex, gpa)

$\{s_id \rightarrow name, s_id \rightarrow address, s_id \rightarrow age, s_id \rightarrow sex, s_id \rightarrow gpa\}$

$\{name \rightarrow sex\}$

$\{name, s_id\} \Rightarrow$ is a superkey

$\{s_id\} \Rightarrow$ key

Grade(s_id, marks, bonus)

$\{s_id \rightarrow marks, bonus\}$

$\{s_id\} \Rightarrow$ key

Course(course_id, name)

$\{course_id \rightarrow name\}$

$\{name \rightarrow course_id\}$

This is non functional dependency

Professor(prof_id, name, experience, dept_id)

$\{prof_id \rightarrow name\}$

$\{name \rightarrow prof_id\}$

$\{prof_id, name\} \Rightarrow$ superkey

$\{prof_key\} \Rightarrow$ key

Books(books_id, name, genre)

$\{books_id \rightarrow name, book_id \rightarrow genre\}$

$\{name \rightarrow genre\}$

$\{book_id, name\} \Rightarrow$ superkey

$\{book_id\} \Rightarrow$ key

Library(name, no_books, library_id, books_id)

$\{book_id \rightarrow no_boos\}$

$\{library_id \rightarrow name, library_id \rightarrow no_books\}$

$\{book_id, lib_id\} \Rightarrow$ superkey

$\{book_id\} \Rightarrow$ key

-----Common FDs-----

$\{s_id \rightarrow marks, s_id \rightarrow book_id\}$

$\{book_id \rightarrow library_id, library_name\}$

$\{s_id \rightarrow course_id, course_name, course_id \rightarrow section_name\}$

$\{dept_id \rightarrow prof_id, dept_id \rightarrow assistant_id, section_id\}$

NOTE: A few tables don't have functional dependency!(example 3);

