# SOFTENG 351 Lab Exercise 1

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1. GET STUDENT whose Student\_number is 17

Update grade report for section\_identifier 112 and Student\_number 17 to be A

1. A course may have a pre-requisite course

A grade report is generated for a student

A grade report is got a specific section

A section is for a specific course

1. Lecturers would like to generate a distribution of marks for a given course
2. Student\_number must be unique

A course must have a department

Section\_identifier must be unique

Course\_number and Prerequisite\_number must not be equal

1. a. STUDENT -> Major, COURSE -> Department, COURSE -> Course\_number, SECTION -> Course\_number, PREREQUISITE -> Course\_number, PREREQUISITE -> Prerequisite\_number

b. ADD Prerequisite\_number column to COURSE

REMOVE Department column from COURSE

SECTION -> Course\_number, COURSE -> Course\_number, and

COURSE -> Prerequisite\_course will now be a multi-value of a

department and a number e.g. (CS,1310)

CREATE new table DEPARTMENT which has column Name, containing

the names of each department.

STUDENT -> Major now points to a DEPARTMENT

Now only the DEPARTMENT -> Name column needs to be updated. So the answer is yes.

1. Lecturers would need a web application to view/change/add/delete grades for a course, form based

Students would need to view their grades for a course on a web app

Database administrators would need an command line interface to check validity of data

1. Three-tier client/server architecture. This system allows concurrent users to perform operations on the database. It also allows multiple views of the data, so customers could access the data through a website, while consultants/help desk employees could use a more advanced custom client.

Centralized DBMS has low redundancy, so a loss of data may be permanent. It also has little security, so customer’s data could be at risk.

Client/Server architecture may not have enough security, as the client can directly access the database. Servers may be too specialized.

1. STUDENT -> Student\_number, COURSE -> Course\_number, SECTION -> Section\_identifier, PREREQUISITE -> Course\_number + Prerequisite\_number, GRADE\_REPORT -> Student\_number + Section\_identifier