# Lab Exercise 13

You have already created tables using the makeuniv script, the university have identified a business need to hold more data in their systems as the reports that are currently held are not detailed enough for the senior management. It has been determined that there is a need to hold more information on the departments within the university. The university already holds some data on the department but it is minimal (describe the department table to identify the data that is held). Staff are assigned a department, it has been determined now that the degree programs that are offered should be allocated to a particular department and in addition the data that is held on the department will be expanded to include the following key data elements:

* Department head
* Description of the research area for that department
* Primary location

The department head is an existing member of staff. The departments are listed below

* 1, Artificial Intelligence managed by 911
* 2, Computer Systems managed by 912
* 3, Information Engineering managed by 921
* 4, Software Engineering managed by 989
* 5, Business Information Systems managed by 891
* 6, Information Systems managed by 811

The degrees that are offered within the computing area are:

* Comp Eng
* Comp Sci
* Info Sys
* MInfSci
* ITMB
* Games

However the computing school has now merged with the Information Systems school and there are a number of new degrees that are now offered:

* Bus Management
* Bus Enterprise
* IS management and Technology

The IT manager is not sure if the titles of the new degree programs are able to be entered on the existing systems, if the existing system is not able to hold the data the system will need to be amended to allow for the longer titles

A new table is required to hold the information allocating the Programs to a Department, this table will hold the degree program and the department allocated, the creation of this table will remove the need to hold the full program/major in the student table, this would be replaced with a FK to the new programmes table.

The merger has also resulted in the constrain in the subject table being incorrect, the IS department have modules that start with INFO or ISYS which currently cannot be held in the subject table, this table will need to be altered to reflect the new amended constraints. After examining the existing system, a flaw in the students table has come to light, there is a column within this table that holds information NOT data, this column must be removed and replaced with a more appropriate column; the data for this column will be amended and inserted later.

**Tasks:**

You are required to implement the scenario changes above, to do this you will need to create a table to hold the degree programmes and alter existing tables. You will also need to check the existing tables to determine if there will be any violations with inserting in the new additional data and alter tables to accommodate the new data (both datatypes and constraints)

This MUST be completed prior to next lab on inserting data!

ALTER TABLE Department

ADD dhead NUMBER(6,0)

ADD ddesc VARCHAR(30)

ADD main\_location VARCHAR(20)

ADD CONSTRAINT fk\_dhead FOREIGN KEY (dhead) REFERENCES Staffmember (staffid)

MODIFY dname VARCHAR(30);

INSERT INTO Department

VALUES (5, 'Business Information Systems', 891, null, null);

INSERT INTO Department

VALUES (6, 'Information Systems', 811, null, null);

UPDATE Department

SET dhead = 911

WHERE dname = 'Artificial Intelligence';

UPDATE Department

SET dhead = 912

WHERE dname = 'Computer Systems';

UPDATE Department

SET dhead = 921

WHERE dname = 'Information Engineering';

UPDATE Department

SET dhead = 989

WHERE dname = 'Software Engineering';

CREATE TABLE ProgramDept (

program\_id NUMBER(6),

degree\_name VARCHAR(30),

dept NUMBER(5) REFERENCES Department (deptid),

CONSTRAINT pk\_CourseDept PRIMARY KEY (program\_id)

);

INSERT INTO ProgramDept VALUES (010001, 'Comp Eng', null);

INSERT INTO ProgramDept VALUES (010002, 'Comp Sci', null);

INSERT INTO ProgramDept VALUES (010003, 'Info Sys', null);

INSERT INTO ProgramDept VALUES (010004, 'MInfSci', null);

INSERT INTO ProgramDept VALUES (010005, 'ITMB', null);

INSERT INTO ProgramDept VALUES (010006, 'Games', null);

INSERT INTO ProgramDept VALUES (010007, 'Bus Enterprise', null);

INSERT INTO ProgramDept VALUES (010008, 'Bus Management', null);

INSERT INTO ProgramDept VALUES (010009, 'IS management and Technology', null);

ALTER TABLE Student

ADD program\_id NUMBER(6)

ADD DoB DATE

ADD CONSTRAINT fk\_programid FOREIGN KEY (program\_id) REFERENCES ProgramDept (program\_id);

UPDATE Student

SET program\_id = '010001'

WHERE major = 'Comp Eng';

UPDATE Student

SET program\_id = '010002'

WHERE major = 'Comp Sci';

UPDATE Student

SET program\_id = '010003'

WHERE major = 'Info Sys';

UPDATE Student

SET program\_id = '010004'

WHERE major = 'MInfSci';

UPDATE Student

SET program\_id = '010005'

WHERE major = 'ITMB';

UPDATE Student

SET program\_id = '010006'

WHERE major = 'Games';

UPDATE Student

SET program\_id = '010007'

WHERE major = 'Bus Enterprise';

UPDATE Student

SET program\_id = '010008'

WHERE major = 'Bus Management';

UPDATE Student

SET program\_id = '010009'

WHERE major = 'IS management and Technology';

ALTER TABLE Student

DROP COLUMN major;

ALTER TABLE Student

DROP COLUMN age;

ALTER TABLE Subject

DROP CONSTRAINT VALIDCLASSID;

ALTER TABLE Subject

ADD CONSTRAINT chk\_subjectId1 CHECK (subjectid LIKE ('COMP%') OR subjectid LIKE ('INFO%') OR subjectid LIKE ('ISYS%'));

INSERT INTO Subject

VALUES ('INFO1230', 'No');

INSERT INTO Subject

VALUES ('ISYS1230', '3');

INSERT INTO Subject

VALUES ('INFO1231', '4123');

INSERT INTO Subject

VALUES ('COMP12220', 'No12312');

INSERT INTO Subject

VALUES ('ISYS1233', '3asda');

INSERT INTO Subject

VALUES ('INFO1220', '412313');

INSERT INTO Subject

VALUES ('sNFO1230', 'No');