

2019

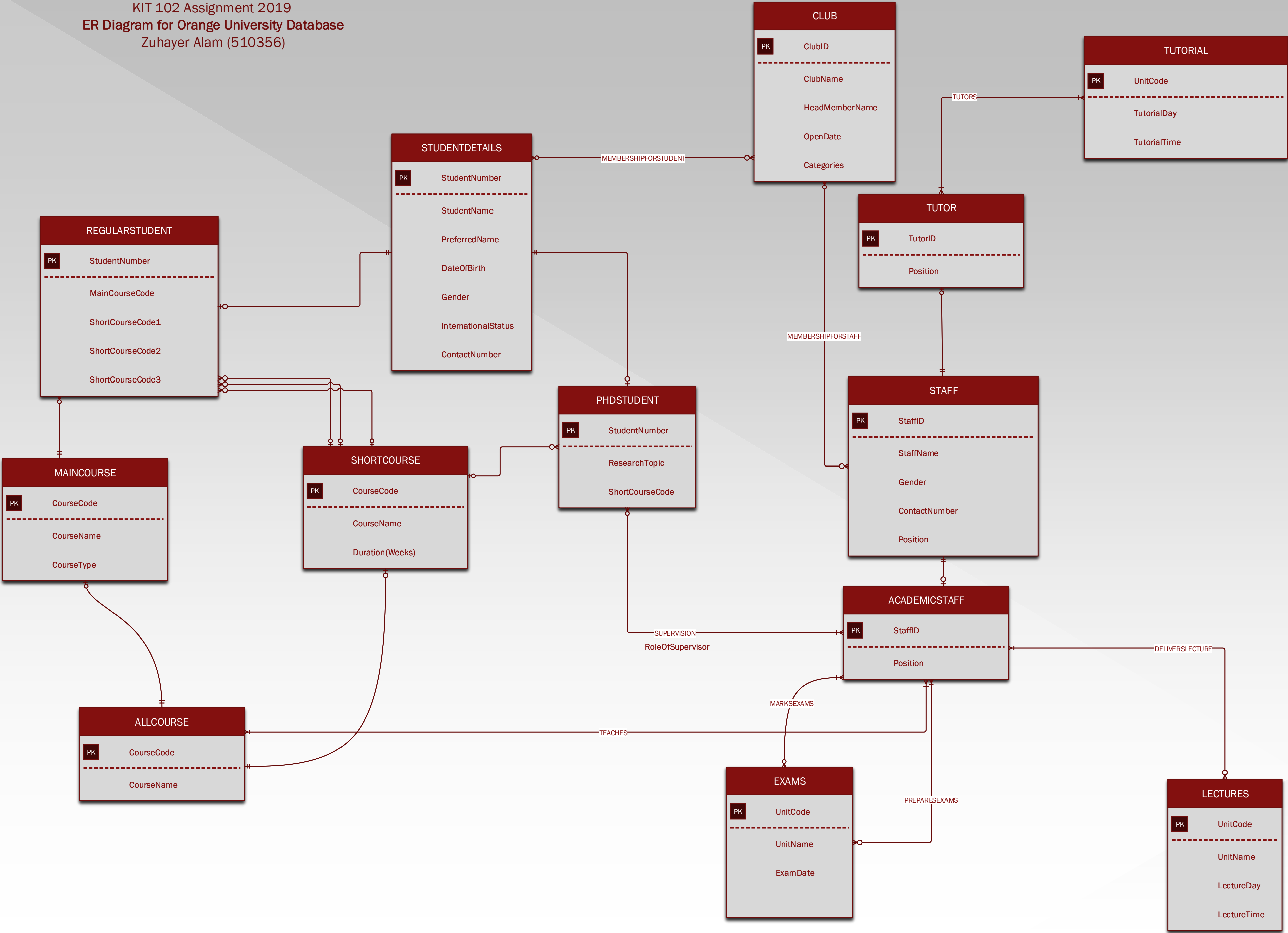
KIT 102 Introduction to Data Science

Data Modelling Assignment

Zuhayer Alam

510356

```
var char(100) NOT NULL,  
LectureDay enum('MON','TUE','WED','THU','FRI') NOT NULL,  
LectureTime time NOT NULL,  
PRIMARY KEY (UnitCode)) ENGINE=InnoDB;  
  
CREATE TABLE TUTORIAL (  
UnitCode varchar(6) NOT NULL,  
UnitName varchar(100) NOT NULL,  
TutorialDay enum('MON','TUE','WED','THU','FRI') NOT NULL,  
TutorialTime time NOT NULL,  
PRIMARY KEY (UnitCode)) ENGINE=InnoDB;
```



Relational Schema For Orange University Database

Step 1. Each Entity Becomes a Relation.

STUDENTDETAILS (StudentNumber,[pk] StudentName, PreferredName, DateOfBirth, Gender, InternationalStatus, ContactNumber)

STAFF (StaffID,[pk] StaffName, Gender, ContactNumber, Position)

ALLCOURSE (CourseCode,[pk] CourseName)

EXAMS (UnitCode,[pk] UnitName, ExamDate)

LECTURES (UnitCode,[pk] UnitName, LectureDay, LectureTime)

TUTORIAL (UnitCode,[pk] UnitName, TutorialDay, TutorialTime)

CLUB (ClubID,[pk] ClubName, HeadMemberName, OpenDate, Category)

MAINCOURSE (CourseCode,[pk] CourseName, CourseType)

SHORTCOURSE (CourseCode,[pk] CourseName, Duration(weeks))

TUTOR (TutorID,[pk] Position)

PHDSTUDENT (StudentNumber,[pk] ResearchTopic)

REGULARSTUDENT (StudentNumber,[pk])

ACADEMICSTAFF (StaffID,[pk] Position)

Step 2. Each Many-to-many Relationship Becomes a Relation.

SUPERVISION (PhDStudentNumber[fk1], SupervisorID[fk2],[pk]
RoleOfSupervisor)

DELIVERSLECTURE (LecturerID[fk1], UnitCode[fk2],[pk])

MARKSEXAMS (ExaminerID[fk1], UnitCode[fk2],[pk])

PREPARESEXAMS (ExaminerID[fk1], UnitCode[fk2],[pk])

TEACHES (AcademicStaffID[fk1], CourseCode[fk2],[pk])

TUTORS (TutorID[fk1], UnitCode[fk2],[pk])

MEMBERSHIPFORSTAFF (ClubID[fk1], StaffID[fk2],[pk])

MEMBERSHIPFORSTUDENT (ClubID[fk1], StudentNumber[fk2],[pk])

Intermediate Step for Each One-to-one Relationship.

MAINCOURSE (CourseCode[fk],[pk] CourseName, CourseType)

SHORTCOURSE (CourseCode[fk],[pk] CourseName, Duration(weeks))

TUTOR (TutorID[fk],[pk] Position)

PHDSTUDENT (StudentNumber[fk],[pk] ResearchTopic)

REGULARSTUDENT (StudentNumber[fk],[pk])

ACADEMICSTAFF (StaffID[fk],[pk] Position)

Step 3. Each One-to-many Relationship is Represented by a Foreign Key.

PHDSTUDENT (StudentNumber[fk1],[pk] ResearchTopic,
ShortCourseCode[fk2])

REGULARSTUDENT (StudentNumber[fk1],[pk] MainCourseCode[fk2],
ShortCourseCode1[fk3], ShortCourseCode2[fk4], ShortCourseCode3[fk5])

Step 4. The Final Relational Schema.

STUDENTDETAILS (StudentNumber,[pk] StudentName, PreferredName, DateOfBirth, Gender, InternationalStatus, ContactNumber)

STAFF (StaffID,[pk] StaffName, Gender, ContactNumber, Position)

ALLCOURSE (CourseCode,[pk] CourseName)

EXAMS (UnitCode,[pk] UnitName, ExamDate)

LECTURES (UnitCode,[pk] UnitName, LectureDay, LectureTime)

TUTORIAL (UnitCode,[pk] UnitName, TutorialDay, TutorialTime)

CLUB (ClubID,[pk] ClubName, HeadMemberName, OpenDate, Category)

SUPERVISION (PhDStudentNumber[fk1], SupervisorID[fk2],[pk] RoleOfSupervisor)

DELIVERSLECTURE (LecturerID[fk1], UnitCode[fk2],[pk])

MARKSEXAMS (ExaminerID[fk1], UnitCode[fk2],[pk])

PREPARESEXAMS (ExaminerID[fk1], UnitCode[fk2],[pk])

TEACHES (AcademicStaffID[fk1], CourseCode[fk2],[pk])

TUTORS (TutorID[fk1], UnitCode[fk2],[pk])

MEMBERSHIPFORSTAFF (ClubID[fk1], StaffID[fk2],[pk])

MEMBERSHIPFORSTUDENT (ClubID[fk1], StudentNumber[fk2],[pk])

MAINCOURSE (CourseCode[fk],[pk] CourseName, CourseType)

SHORTCOURSE (CourseCode[fk],[pk] CourseName, Duration(weeks))

TUTOR (TutorID[fk],[pk] Position)

ACADEMICSTAFF (StaffID[fk],[pk] Position)

PHDSTUDENT (StudentNumber[fk1],[pk] ResearchTopic, ShortCourseCode[fk2])

REGULARSTUDENT (StudentNumber[fk1],[pk] MainCourseCode[fk2], ShortCourseCode1[fk3], ShortCourseCode2[fk4], ShortCourseCode3[fk5])