

Relational Schema

Step 1: Each entity becomes a relation

STUDENT (StudentNumber, [pk] StudentName, PreferredName, DateOfBirth, Gender, InternationalStudent, ContactNumber, MainCourse, ShortCourseOneName, ShortCourseTwoName, ShortCourseThreeName)

PHDSTUDENT (PhdStudentNumber, [pk] StudentName, PreferredName, DateOfBirth, Gender, InternationalStudent, ContactNumber, MainCourse, ResearchTopic, SupervisorOneName, SupervisorTwoName, SupervisorThreeName)

STAFF (StaffId, [pk] StaffName, Position, Gender, Role, ContactNumber)

TUTORIAL (TutorialId, [pk])

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

COURSE (CourseCode, [pk] CourseName, CourseType, Period)

SHORTCOURSE (ShortCourseCode, [pk] CourseName, Period)

SUPERVISION (SupervisionId, [pk] Role, StartingDate, ExpectedEndDate)

Step 2: Each many-to-many relationship becomes a relation

TAKE (StudentNumber [fk1], ShortCourseCode [fk2], [pk])

ASSOCIATE (StudentNumber [fk1], TutorialId [fk2], [pk])

PARTICIPATE (StudentNumber [fk1], ClubName [fk2], [pk])

ENGAGE (PhdStudentNumber [fk1], TutorialId [fk2], [pk])

INVOLVE (PhdStudentNumber [fk1], ClubName [fk2], [pk])

COVERED (StaffId [fk1], TutorialId [fk2], [pk])

TEACH (StaffId [fk1], CourseCode [fk2], [pk])

PARTAKE (StaffId [fk1], ClubName [fk2], [pk])

Step 3: Each one-to-many relationship is represented by a foreign key

STUDENT (StudentNumber, [pk] StudentName, PreferredName, DateOfBirth, Gender, InternationalStudent, ContactNumber, MainCourse, ShortCourseOneName, ShortCourseTwoName, ShortCourseThreeName, CourseCode [fk1])

PHDSTUDENT (PhdStudentNumber, [pk] StudentName, PreferredName, DateOfBirth, Gender, InternationalStudent, ContactNumber, MainCourse, ResearchTopic, SupervisorOneName, SupervisorTwoName, SupervisorThreeName, ShortCourseCode [fk1])

SUPERVISION (SupervisionId, [pk] Role, StartingDate, ExpectedEndDate, StaffId [fk1], PhdStudentNumber [fk2])

Step 4: Write out the final relational schema (Logical Model)

SHORTCOURSE (ShortCourseCode, [pk] CourseName, Period)

COURSE (CourseCode, [pk] CourseName, CourseType, Period)

TUTORIAL (TutorialId, [pk])

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

STAFF (StaffId, [pk] StaffName, Position, Gender, Role, ContactNumber)

STUDENT (StudentNumber, [pk] StudentName, PreferredName, DateOfBirth, Gender, InternationalStudent, ContactNumber, MainCourse, ShortCourseOneName, ShortCourseTwoName, ShortCourseThreeName, CourseCode [fk1])

PHDSTUDENT (PhdStudentNumber, [pk] StudentName, PreferredName, DateOfBirth, Gender, InternationalStudent, ContactNumber, MainCourse, ResearchTopic, SupervisorOneName, SupervisorTwoName, SupervisorThreeName, ShortCourseCode [fk1])

SUPERVISION (SupervisionId, [pk] Role, StartingDate, ExpectedEndDate, StaffId [fk1], PhdStudentNumber [fk2])

TAKE (StudentNumber [fk1], ShortCourseCode [fk2], [pk])

ASSOCIATE (StudentNumber [fk1], TutorialId [fk2], [pk])

PARTICIPATE (StudentNumber [fk1], ClubName [fk2], [pk])

ENGAGE (PhdStudentNumber [fk1], TutorialId [fk2], [pk])

INVOLVE (PhdStudentNumber [fk1], ClubName [fk2], [pk])

COVERED (StaffId [fk1], TutorialId [fk2], [pk])

TEACH (StaffId [fk1], CourseCode [fk2], [pk])

PARTAKE (StaffId [fk1], ClubName [fk2], [pk])