UNIVERSITY OF THE WEST INDIES - Department of Computing

COMP3161 – Database Management Systems (Semester II, 2023)

R-relations

1. Accounts (typeID, username, password, type(Lecturer/Course Maintainer - 2, Student - 3, Admin - 1))
2. Admin (adminID, firstName, lastName, typeID)
3. Students (studentID, firstName, lastName, typeID, coursesEnrolled)
4. Lecturer/CourseMaintainer  (lecID, firstName, lastName, typeID, coursesTaught)
5. Courses (courseID, courseName, courseDescription, lecID, studentID, numberOfMembers)
6. DiscussionForums (forumID, courseID, forumName)
7. DiscussionThreads (threadID, forumID, threadTitle, threadContent, studentID, lecID)
8. Sections (sectionID, courseID, sectionTitle)
9. SectionItems (itemID, sectionID, lecID, itemType(link, lecture slide), itemTitle, itemContent)
10. CalendarEvents (eventID, courseID, eventTitle, eventDescription, eventDate)
11. Assignments (assignmentID, courseID, studentID, lecID, assignmentTitle, assignmentDescription, assignmentDueDate, assignmentSubmissionDate)
12. DiscussionThreadReplies (replyID, courseID, threadID, replyContent)
13. Grades (gradeID, grade, averageGrade, studentID, assignmentID, coursed)
14. Enrollments (enrollmentID, courseID, studentID, lecID, coursesTaught, CoursesEnrolled, NumberOfMembers)

Here are the relationships among the tables:

* Admin and Accounts have a one-to-one relationship, where each admin record is associated with one account type.
* Students and Accounts have a one-to-one relationship, where each student record is associated with one account type.
* Lecturer/Course Maintainer and Accounts have a one-to-one relationship, where each Lecturer/Course Maintainer record is associated with one account type.
* Courses and Lecturer/Course Maintainer have a one-to-many relationship, where one Lecturer/Course Maintainer can have multiple courses.
* Courses and Students have a many-to-many relationship, where many students can be associated with multiple courses and vice versa.
* DiscussionForums and Courses have a one-to-many relationship, where one course can have multiple DiscussionForums.
* DiscussionThreads and DiscussionForums have a one-to-many relationship, where one DiscussionForums can have multiple DiscussionThreads.
* DiscussionThreads and Students/Lecturer/Course Maintainer have a many-to-many relationship, where many Students/Lecturer/Course Maintainer can be associated with multiple DiscussionThreads and vice versa.
* Enrollments, Students and Course have many to many relationships, where many students can be enrolled in different courses.