

Group name: database group

Phase 1 _ Group Formation and Conceptual Data Model

Group's Members Info:

Student Name
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Group Leader: Reema alaboudi

Data Modeling Tool: <https://www.lucidchart.com/pages/>

Assumptions

- EducationalBackground: Weak entity tied to User, storing details of each user's education.
- Quiz: Part of a Module, tracked by deadline and max marks.
- StudyGroup: Groups formed by users, containing multiple posts.
- ConversationThread: Discussion threads related to courses.
- QuizAttempt: Records user attempts for quizzes

Entity	Attribute	Desc
User	UserID (Primary Key) Password EmailAddress ProfilePicture	Stores registered user information
Course	CourseID (Primary Key) Description TopicsCovered InstructorID (Foreign Key) StartDate EndDate	Represents courses information
Module	ModuleID (Primary Key) Module name	Components of courses
Lecture	LectureID (Primary Key) VideoContent TextSummary Duration	Part of a module, includes video and text content
Assignment	AssignmentID (Primary Key) ModuleID (Foreign Key) SubmissionDeadline MaxMarks	Module assignments
Quiz	QuizID (Primary Key) ModuleID (Foreign Key) SubmissionDeadline MaxMarks	Module quizzes
Submission	SubmissionID (Primary Key) UserID (Foreign Key) AssignmentID (Foreign Key) Timestamp	Tracks assignment submissions
QuizAttempt	QuizAttemptID (Primary Key) UserID (Foreign Key) QuizID (Foreign Key) Score	Records quiz attempts
StudyGroup	GroupID (Primary Key) DiscussionForum (Relationship with Post entity)	User-formed study groups

Post	PostID (Primary Key) GroupID (Foreign Key) UserID (Foreign Key) Timestamp	PostID (Primary Key) GroupID (Foreign Key) UserID (Foreign Key) Timestamp
Instructor	InstructorID (Primary Key) Biography	Instructor profiles
Announcement	AnnouncementID (Primary Key) CourseID (Foreign Key) Timestamp	Course-related announcements by instructors
Feedback	FeedbackID (Primary Key) UserID (Foreign Key) CourseID (Foreign Key) Ratings TextComments	User feedback on courses/instructors
Certificate	CertificateID (Primary Key) UserID (Foreign Key) CourseID (Foreign Key) DateOfIssuance	Certificates for completed courses
Message	MessageID (Primary Key) SenderID (Foreign Key) ReceiverID (Foreign Key) Timestamp ThreadID (Foreign Key)	User messages in conversation threads
ConversationThread	ThreadID (Primary Key) CourseID (Foreign Key, nullable for general queries)	Threads for course-related discussions
EducationalBackground	UserID (Foreign Key, part of the primary key) Degree Institution GraduationYear	Weak entity linked to User, stores educational history

Description: ER Data Model component:

User --(1-to-M)-- EducationalBackground
User --(M-to-M through Enrollment)-- Course
Course --(1-to-M)-- Module
Module --(1-to-M)-- Lecture
Module --(1-to-M)-- Assignment
Module --(1-to-M)-- Quiz
Assignment --(M-to-1)-- Submission
Quiz --(M-to-1)-- QuizAttempt
User --(M-to-M through StudyGroupMembership)-- StudyGroup
StudyGroup --(1-to-M)-- Post
User --(1-to-M)-- Post
Instructor --(1-to-M)-- Course
Instructor --(1-to-M)-- Announcement
Course --(1-to-M)-- Feedback
Course --(1-to-M)-- Certificate
Course --(1-to-M)-- ConversationThread
ConversationThread --(1-to-M)-- Message
User --(1-to-M as SenderID and ReceiverID)-- Message

Phase 2

Relational Database Schema

