E-Learnify: A Database Management System for an Online Learning Platform

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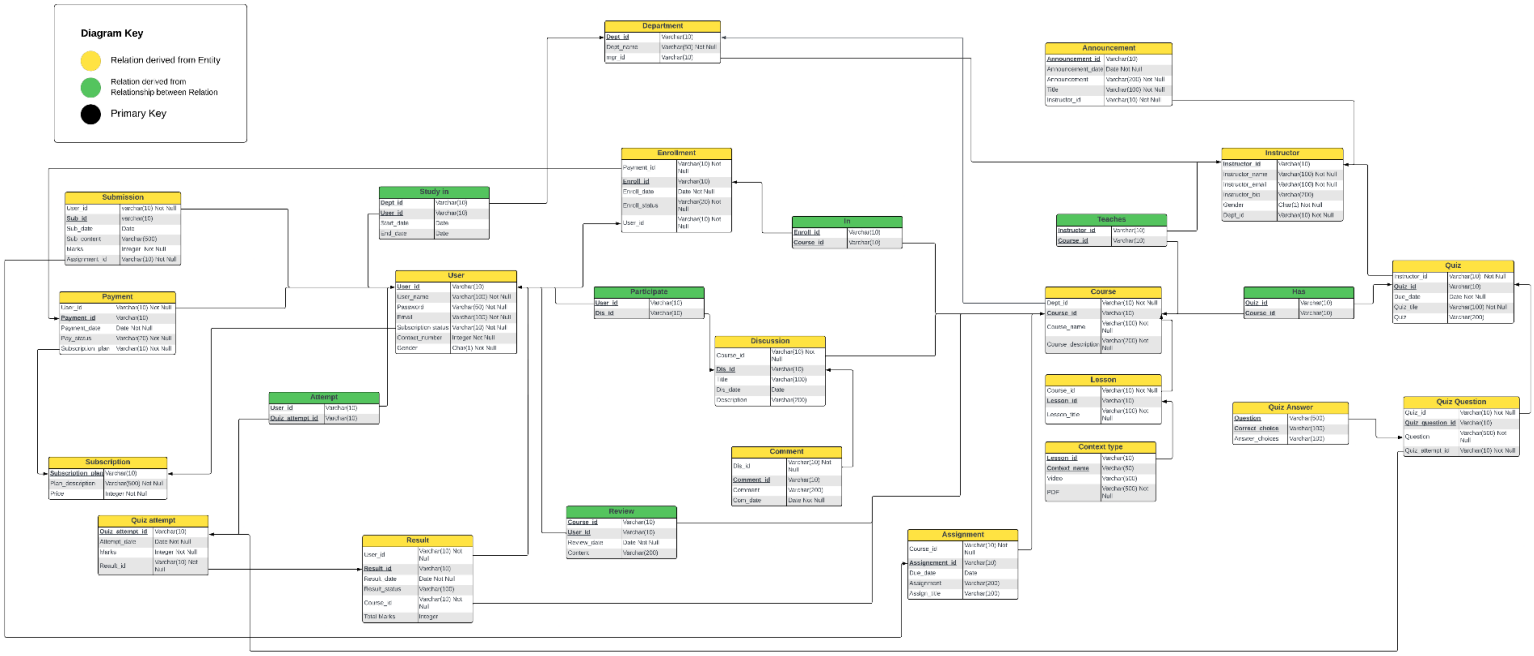
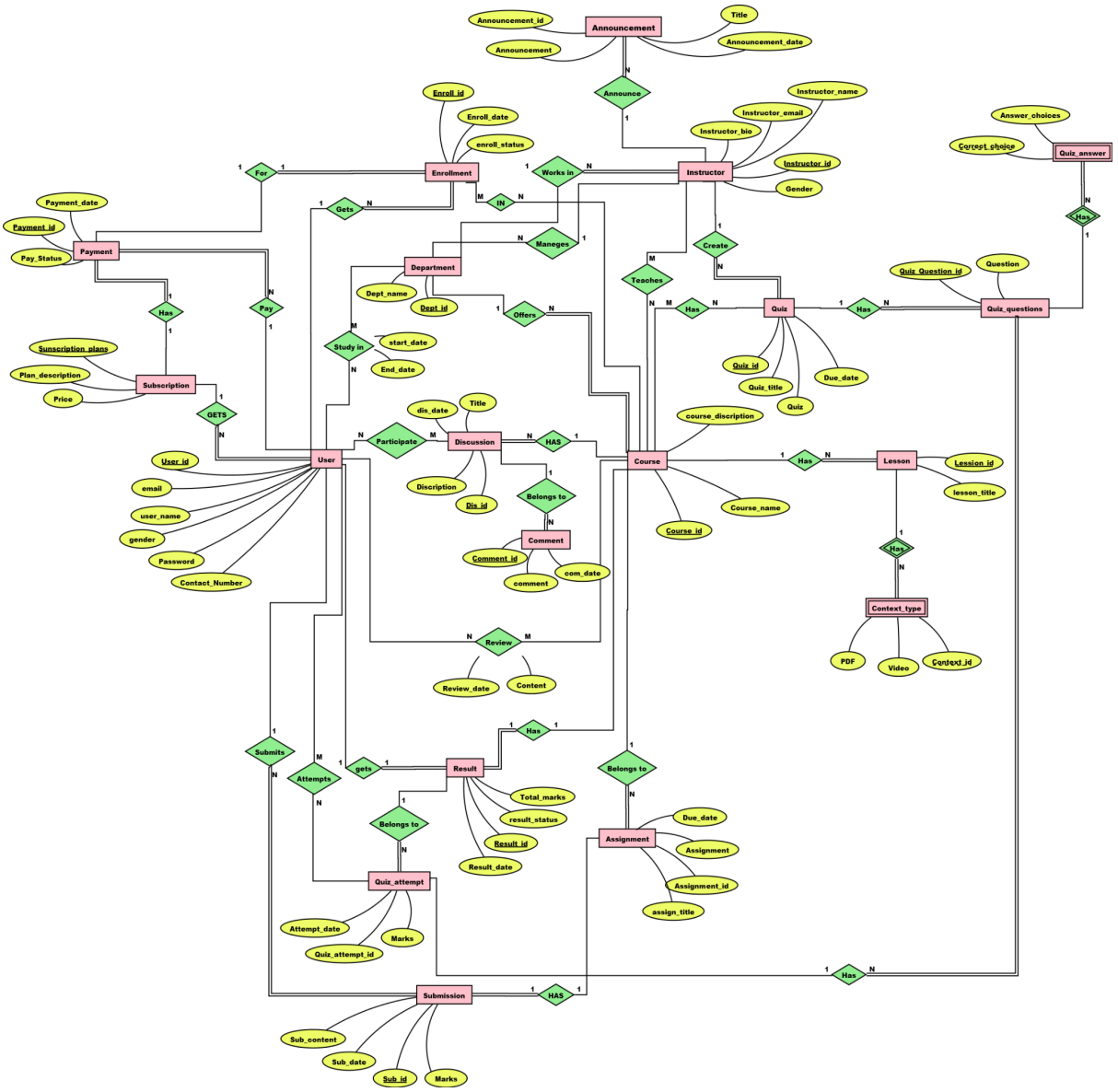
Relational_Diagram

In case the image is not visible, the link is provided



ER-Diagram



Normalization proof

In each relation, we have FDs with the Candidate key on the left side. So all relations have the super key as determinants, so relations are in BCNF.

FD_{min}

User

User_id→Name

User_id→Password

User_id→Email

User_id→Subscription_status

User_id→Contact_number

User_id→Gender

Discussion

Dis_id→Discussion_title

Dis_id→Dis_description

Dis_id→Discussion_date

Dis_id→Course_id

Comment

Comment_id→Dis_id

Comment_id→Comment_description

Comment_id→Comment_date

Subscription

Subscription_plan → Plan_description

Subscription_plan → Price

Department

Dept_id→Dept_name

Department→mgr_id

Payment

Payment_id→User_id

Payment_id→Payment_date

Payment_id→Status

Payment_id→Amount

Payment_id→Subscription_plan

Submission

Sub_id→User_id

Sub_id→Sub_date

Sub_id→Sub_content

Sub_id→Marks

Sub_id→Assignment_id

Quiz_attempt

Quiz_attempt_id→Attempt_date

Quiz_attempt_id→Marks

Quiz_attempt_id→Result_id

Result

Result_id → User_id

Result_id → Course_id

Result_id → Total_marks

Result_id→Result_Status

Result_id→Result_date

Course

Course_id→Dept_id

Course_id→Course_name

Course_id→Course_Description

Instructor

Instructor_id→Instructor_name

Instructor_id→Instructor_bio

Instructor_id→Instructor_email

Instructor_id→Gender

Instructor_id→Dept_id

Quiz

Quiz_id→Instructor_id

Quiz_id→Quiz_title

Quiz_id→Due_date

Quiz_id→Quiz_description

Quiz_question

Quiz_Question_id→Quiz_id

Quiz_Question_id→Question

Quiz_Question_id→Quiz_attempt_id

Quiz_Answer

{Question,Correct_choise}→Answer_choices

Assignment

assignment_id → cource_id

assignment_id → due_date

assignment_id →assignment_ description

assignment_id → Assign_title

Announcement

Announcement_id →Announcement_date

Announcement_id → instructor_id

Announcement_id → title

Announcement_id → Announcement

Lesson

lesson_id → course_id

lesson_id →Lesson_title

Context_type

{Lesson_id, Context_name}→video

{Lesson_id, Context_name}→pdf

Enrollment

Enroll_id → payment_id

Enroll_id → user_id

Enroll_id →Enroll_ date

Enroll_id → Enroll_status

Study_in

{Dept_id, user_id} → start_date

{Dept_id, user_id } → end_date

Attempts

User_id, quiz_attempt_id

Review

User_id, course_id → revie_date

User_id , course_id → content

Teaches

instructor_id,course_id

In

Enrollment_id,course_id

Has

quiz_id,course-id

Participate

User_id, Dis_id

Changes Made

Relational Diagram

1. In the submission relation, assignment_id was added, and from the assignment relation, sub_id was removed.
2. Attributes' limits were increased for data entry.

In case Relational-Schema is not clear, we have attached a .svg file link below for downloading purposes:

https://drive.google.com/file/d/1Iga8LwzOWpa8GbxfwzWQBGHgTO_95Sps/view?usp=share_link

https://drive.google.com/file/d/1lj7yh3QvZMCQ0wrHZs7RlZNZS3U4YPRY/view?usp=share_link