EXAMINATION SYSTEM DB DOCUMENTATION

Introduction:

The Examination System Desktop Application is a user-friendly software solution developed to cater to the needs of both instructors and students within an educational environment. This application serves as a centralized platform for managing exams and monitoring academic progress. Designed with simplicity and functionality in mind, the Examination System Desktop Application offers intuitive interfaces tailored to the specific requirements of instructors and students.

Tables Description:

Table: Logins

- **Description:** Stores login information for users.
- **Columns:**
    - **Email:** Email address of the user. (Primary Key)
    - **Password:** Password associated with the email for login authentication.

Table: Department

- **Description:** Stores information about academic departments.
- **Columns:**
    - **DepartmentID:** Unique identifier for each department. (Primary Key)
    - **DepartmentName:** Name of the department.
    - **ManagerID:** ID of the department manager.

Table: Student

- **Description:** Stores information about students.

- **Columns:**

    - **StudentId:** Unique identifier for each student. (Primary Key)

    - **FirstName:** First name of the student.

    - **LastName:** Last name of the student.

    - **Address:** Address of the student.

    - **Email:** Email address of the student.

    - **PhoneNum:** Phone number of the student.

    - **DepartmentID:** ID of the department the student belongs to. (Foreign Key referencing Department)

Table: Instructor

- **Description:** Stores information about instructors.

- **Columns:**

    - **InstructorID:** Unique identifier for each instructor. (Primary Key)

    - **FirstName:** First name of the instructor.

    - **LastName:** Last name of the instructor.

    - **HireDate:** Date when the instructor was hired.

    - **PhoneNumber:** Phone number of the instructor.

    - **Email:** Email address of the instructor.

    - **DepartmentID:** ID of the department the instructor belongs to. (Foreign Key referencing Department)

Table: Topic

- **Description:** Stores information about academic topics.

- **Columns:**

    - **TopicID:** Unique identifier for each academic topic. (Primary Key)

    - **TopicTitle:** Title of the academic topic.

Table: Course

- **Description:** Stores information about courses.

- **Columns:**

    - **CourseID:** Unique identifier for each course. (Primary Key)

    - **CourseName:** Name of the course.

    - **TopicID:** ID of the academic topic the course belongs to. (Foreign Key referencing Topic)

Table: Question

- **Description:** Stores information about exam questions.

- **Columns:**

    - **QuestionID:** Unique identifier for each question. (Primary Key)

    - **QuestionText:** Text of the question.

    - **QuestionType:** Type of the question (True/False or Multiple Choice).

    - **Complexity:** Complexity level of the question.

    - **CourseID:** ID of the course the question belongs to. (Foreign Key referencing Course)

Table: Choice

- **Description:** Stores choices for multiple-choice questions.
- **Columns:**
    - **ChoiceID:** Unique identifier for each choice. (Primary Key)
    - **ChoiceText:** Text of the choice.
    - **IsCorrect:** Indicates whether the choice is correct or not.
    - **QuestionID:** ID of the question the choice belongs to. (Foreign Key referencing Question)

Table: Exam

- **Description:** Stores information about exams.
- **Columns:**
    - **ExamID:** Unique identifier for each exam. (Primary Key)
    - **ExamDate:** Date and time of the exam.
    - **InstructorID:** ID of the instructor conducting the exam. (Foreign Key referencing Instructor)
    - **CourseID:** ID of the course the exam belongs to. (Foreign Key referencing Course)

Table: Grades

- **Description:** Stores grades for exams.
- **Columns:**
    - **ExamID:** ID of the exam. (Primary Key)
    - **StudentID:** ID of the student. (Primary Key)
    - **Score:** Score obtained by the student in the exam.

Table: Enroll

- **Description:** Stores enrollments of students in courses.

- **Columns:**

    - **StudentID:** ID of the student. (Primary Key)

    - **CourseID:** ID of the course. (Primary Key)

Table: Teach

- **Description:** Stores information about instructors teaching courses.

- **Columns:**

    - **CourseID:** ID of the course. (Primary Key)

    - **InstructorID:** ID of the instructor. (Primary Key)

Table: ExamQuestion

- **Description:** Associates exam questions with exams.

- **Columns:**

    - **ExamID:** ID of the exam. (Primary Key)

    - **QuestionID:** ID of the question. (Primary Key)

Table: Answer

- **Description:** Stores answers given by students in exams.

- **Columns:**

    - **ExamID:** ID of the exam. (Primary Key)

    - **StudentID:** ID of the student. (Primary Key)

    - **QuestionID:** ID of the question. (Primary Key)

    - **Answer:** ID of the chosen choice for the question. (Foreign Key referencing Choice)

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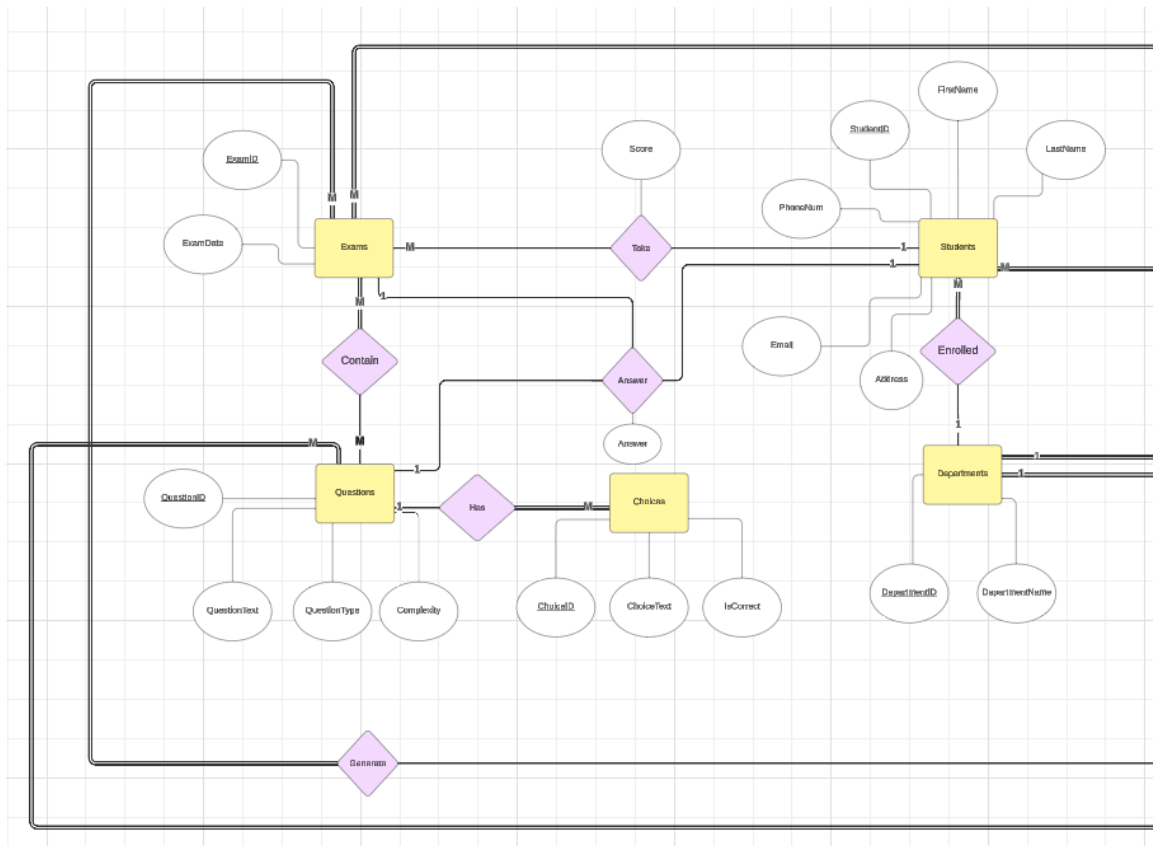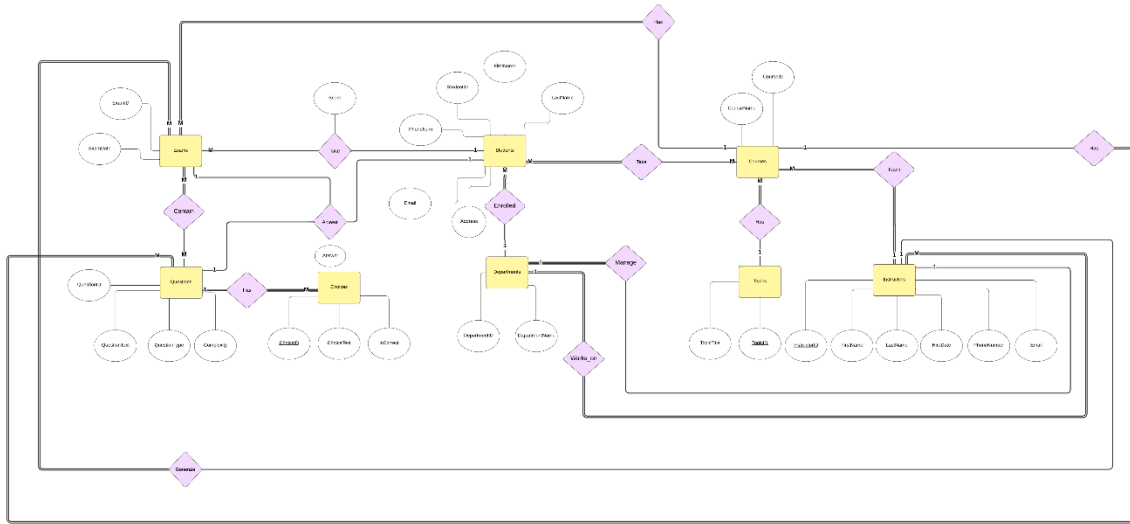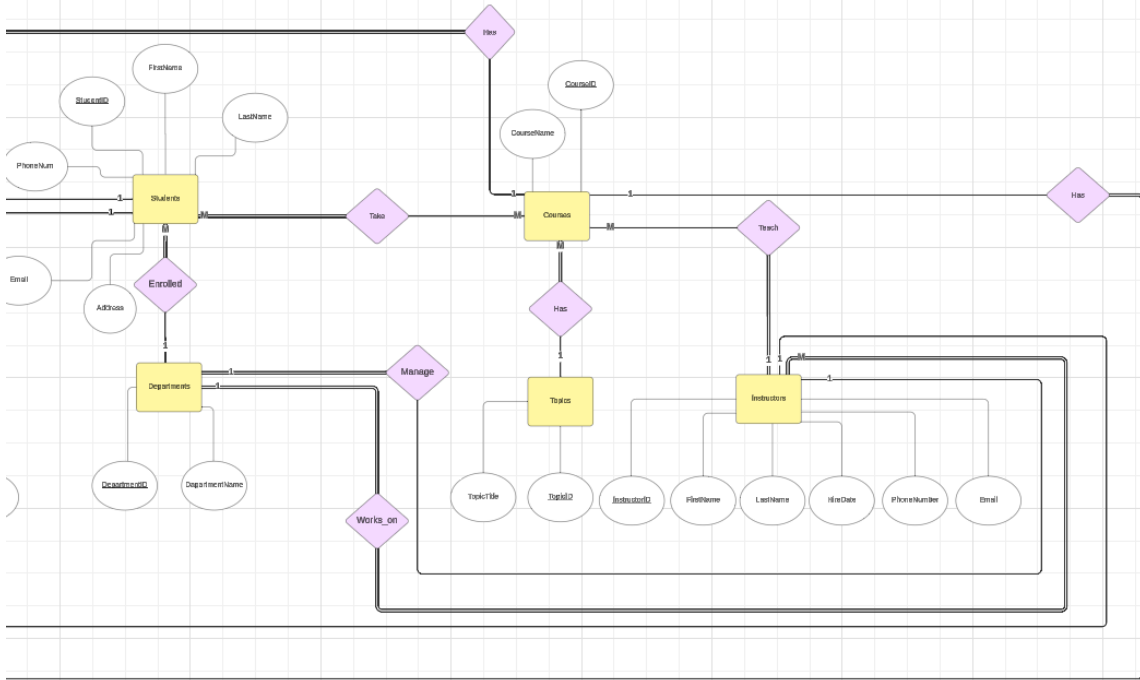
DB Tables

Student

PK	StudentId	INT
	FirstName	NVARCHAR(30)
	LastName	NVARCHAR(30)
	Address	NVARCHAR(30)
	Email	NVARCHAR(30)
	PhoneNum	NVARCHAR(30)
FK	DepartmentID	INT

Department

PK	DepartmentID	INT
	DapartmentName	NVARCHAR(50)
FK	ManagerID	INT

Course

PK	CourseID	INT
	CourseName	NVARCHAR(50)
FK	TopicID	INT

Topic

PK	TopicID	INT
	TopicTitle	NVARCHAR(100)

Teach

PK	CourseID	INT
PK	InstructorID	INT

Instructor

PK	InstructorID	INT
	FirstName	NVARCHAR(20)
	LastName	NVARCHAR(20)
	HireDate	DATE
	PhoneNumber	NVARCHAR(11)
	Email	NVARCHAR(30)
FK	DepartmentID	INT

Grades

PK	ExamID	INT
FK	StudentID	INT
	Score	INT

Question

PK	QuestionID	INT
	QuestionText	NVARCHAR(500)
	QuestionType	NVARCHAR(20)
	Complexity	NVARCHAR(20)
FK	CourseID	INT

ExamQuestion

PK	ExamID	INT
PK	QuestionID	INT

Answer

PK	ExamID	INT
FK	StudentID	INT
PK	QuestionID	INT
	Answer	INT

Choice

PK	ChoiceID	INT
	ChoiceText	NVARCHAR(200)
	IsCorrect	BOOL
FK	QuestionID	INT

EnrollCourse

PK	CourseID	INT
PK	StudentID	INT

Exam

PK	ExamID	INT
	ExamDate	DATE
FK	InstructorID	INT
FK	CourseID	INT

DB Mapping

Students

StudentID	FirstName	LastName	PhoneNum	Email	Address	DepartmentID

Departments

DepartmentID	DapartmentName	ManagerID

Instructors

InstructorID	FirstName	LastName	HireDate	PhoneNumber	Email	DepartmentID

Questions

QuestionID	QuestionText	QuestionType	Complexity	CourseID

Choices

ChoiceID	ChoiceText	IsCorrect	QuestionID

ExamQuestions

ExamID	QuestionID

Grades

ExamID	StudentID	Score

Exams

ExamID	ExamDate	InstructorID	CourseID

EnrollCourses

StudentID	CourseID

Courses

CourseID	CourseName	TopicID

Topics

TopicID	TopicTitle

Teach

CourseID	InstructorID

Answers

ExamID	StudentID	QuestionID	Answer