Entities

Table: Student

Name in D.B	Student
Description	This table will have all the details of the “Student” entity.

Field Name	Data Type	Description	Constraints
SID	INT	• Student ID • Primary key (PK) of the table	Not null
fname	Varchar(20)	Student’s first name	Not null
lname	Varchar(20)	Student’s last name	Not null
age	INT	Student’s age	Accept null value
address	Varchar(30)	Student’s address	Accept null value

Table: Instructor

Name in D.B	Instructor
Description	This table will have all the details of the “Instructor” entity.

Field Name	Data Type	Description	Constraints
InstID	INT	• Instructor ID • Primary key (PK) of the table	Not null
fname	Varchar(20)	Instructor’s first name	Not null
lname	Varchar(20)	Instructor’s last name	Not null
age	INT	Instructor’s age	Accept null value
address	Varchar(30)	Instructor’s address	Accept null value

Table: Department

Name in D.B	Department
Description	This table will have all the details of the “Department” entity.

Field Name	Data Type	Description	Constraints
DeptId	INT	• Department ID • Primary key (PK) of the table	Not null
DeptName	Varchar(50)	Department’s name	Accept null value

Table: Course

Name in D.B	Course
Description	This table will have all the details of the “Course” entity.

Field Name	Data Type	Description	Constraints
CrsID	INT	• Course ID • Primary key (PK) of the table	Not null
CrsName	Varchar(50)	Course’s name	Not null
InstID	INT	ID of the Course’s Instructor	• Not null • Foreign key refers to the column “InstID” in “Instructor” table

Table: Topic

Name in D.B	Topic
Description	This table will have all the details of the “Topic” entity.

Field Name	Data Type	Description	Constraints
TID	INT	• Topic ID • Primary key (PK) of the table	Not null
TopName	Varchar(100)	Topic’s name	Accept null value

Table: Exam

Name in D.B	Exam
Description	This table will have all the details of the “Exam” entity.

Field Name	Data Type	Description	Constraints
ExamID	INT	• Exam ID • Primary key (PK) of the table	Not null
ExamTitle	Varchar(20)	Exam’s title	Accept null value
Duration	float	Duration of the exam in minutes	Accept null value
date	datetime	Student’s address	Not null

Table: Answer

Name in D.B	Answer
Description	This table will have all the details of the “Answer” entity.

Field Name	Data Type	Description	Constraints
AnsID	INT	• Answer ID • Primary key (PK) of the table	Not null
AnsText	Varchar(30)	Answer’s text	Not null
QID	INT	ID of the answer’s question	• Not null • Foreign key refers to the column “QID” in “Question” table

Table: Question

Name in D.B	Question
Description	This table will have all the details of the “Question” entity.

Field Name	Data Type	Description	Constraints
QID	INT	• Question ID • Primary key (PK) of the table	Not null
QuesText	Varchar(200)	Question’s text	Not Null
Type	Varchar(10)	It only expects values of “MCQ” or “T/F”	Not null
ModelAns	Varchar(30)	Question’s model answer.	Not Null
CrsID	INT	ID of the question’s course	• Accept null value • Foreign key refers to the column “CrsID” in “Course” table
advLevel	Varchar(50)	Defines the level of difficulty of the question.	Accept null value

Table: Registrar

Name in D.B	Registrar
Description	This table will have all the details of the “Registrar” entity.

Field Name	Data Type	Description	Constraints
RegID	INT	• Registrar ID • Primary key (PK) of the table	Not null
Email	Varchar(50)	User’s email address	Not null
username	Varchar(50)	Username	Not null
password	Nchar(50)	Password	Not null
usertype	Varchar(20)	Type of the user, it should be “student” or “instructor”	Accept null value

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Relationships

Table: Department & Student

Name in D.B	Dept_Stud
Description	This table will have all the details of the "Department & Student" relationship.
Relation Type	One (Department) to many (Student)

Field Name	Data Type	Description	Constraints
StudID	INT	Composite primary key (PK) of the table	• Refers to "SID" column of "Student" table • Not Null
DeptID	INT		• Refers to "DeptID" column of "Department" table • Not null
Date_Of_Insertion	datetime	Define the date when the student (StudID) joined the department (DeptID)	Accept null value

Table: Department & Course

Name in D.B	Dept_Course
Description	This table will have all the details of the "Department & Course" relationship.
Relation Type	Many (Department) to many (Course)

Field Name	Data Type	Description	Constraints
CourseID	INT	Composite primary key (PK) of the table	• Refers to "CrsID" column of "Course" table • Not Null
DeptID	INT		• Refers to "DeptID" column of "Department" table • Not null
Date_Of_Insertion	datetime	Define the date when the course (CourseID) joined the department (DeptID)	Accept null value

Table: Course & Topic

Name in D.B	Course_Topics
Description	This table will have all the details of the “Course & Topic” relationship.
Relation Type	One (Course) to many (Topic)

Field Name	Data Type	Description	Constraints
CourseID	INT	Composite primary key (PK) of the table	• Refers to “CrsID” column of “Course” table • Not Null
TopicID	INT		• Refers to “TID” column of “Topic” table • Not null

Table: Student & Exam & Question

Name in D.B	St_exam_Q_A
Description	This table will have all the details of the “Student & Exam & Question” relationship.
Relation Type	Many (Student) to many (Exam) to Many (Question)

Field Name	Data Type	Description	Constraints
StudID	INT	Composite primary key (PK) of the table	• Refers to “SID” column of “Student” table • Not Null
ExamID	INT		• Refers to “ExamID” column of “Exam” table • Not null
QuesID	INT		• Refers to “QID” column of “Question” table • Not null
Grade	INT	Student(StudID)’s grade in question(QuesID) in exam (ExamID)	Accept null value
Answer	Varchar(50)	Student(StudID)’s answer in question(QuesID) in exam (ExamID)	Accept null value

Table: Student & Exam

Name in D.B	Stud_Exam
Description	This table will have all the details of the “Student & Exam” relationship.
Relation Type	Many (Student) to many (Exam)

Field Name	Data Type	Description	Constraints
StudID	INT	Composite primary key (PK) of the table	• Refers to “SID” column of “Student” table • Not Null
ExamID	INT		• Refers to “ExamID” column of “Exam” table • Not null
Grade	INT	Student(StudID)’s grade in exam (ExamID)	Accept null value
Date_Of_Insertion	datetime	Define the date when the student (StudID) took/ will take the exam(ExamID)	Accept null value

Table: Student & Course

Name in D.B	Stud_Course
Description	This table will have all the details of the “Student & Course” relationship.
Relation Type	Many (Course) to many (Student)

Field Name	Data Type	Description	Constraints
StudID	INT	Composite primary key (PK) of the table	• Refers to “SID” column of “Student” table • Not Null
CourseID	INT		• Refers to “CrsID” column of “Course” table • Not null
FullGrade	INT	Student(StudID)’s overall grade in course (CourseID)	Accept null value
Progress	Varchar(50)	Define the status of the student(StudID) in the course(CourseID)	Accept null value

Table: Exam & Question

Name in D.B	Exam_Ques
Description	This table will have all the details of the “Exam & Question” relationship.
Relation Type	Many (Exam) to many (Question)

Field Name	**Data Type**	**Description**	**Constraints**
ExamID	INT	Composite primary key (PK) of the table	• Refers to “ExamID” column of “Exam” table • Not null
QuesID	INT		• Refers to “QID” column of “Question” table • Not null

Table: Registrar & Student

Name in D.B	Regis_Stud
Description	This table will have all the details of the “Registrar & Student” relationship.
Relation Type	One (Registrar) to one (Student)

Field Name	**Data Type**	**Description**	**Constraints**
StudId	INT	Composite primary key (PK) of the table	• Refers to “SID” column of “Student” table • Not Null
RegisID	INT		• Refers to “RegID” column of “Registrar” table • Not null
Date_Of_Insertion	datetime	Define the date of registration	Accept null value

Table: Registrar & Instructor

Name in D.B	Regis_Stud
Description	This table will have all the details of the “Registrar & Instructor” relationship.
Relation Type	One (Registrar) to one (Instructor)

Field Name	**Data Type**	**Description**	**Constraints**
InstID	INT	Composite primary key (PK) of the table	• Refers to “InstID” column of “Instructor” table • Not Null
RegisID	INT		• Refers to “RegID” column of “Registrar” table • Not null
Date_Of_Insertion	datetime	Define the date of registration	Accept null value