EXAMINATIONSYSTEM

Tables:

Views:

Procedures:

Tables:

Table dbo.Course *(12 rows)*

	Column	Data Type	Identity	Nullable	Default
PK	ID	int	X		
	Name	nvarchar(20)		X	
	Duration	int		X	

Indexes:

> **PK__Course__3214EC277CA67055** *(Primary Key) (Clustered) (8.33% Selectivity)*
>
>> ID

Referenced by:

> **dbo.InstructorCourses** *(Course -> ID)*
>
> **dbo.Question** *(Course -> ID)*
>
> **dbo.StudentCourses** *(Course -> ID)*
>
> **dbo.Topic** *(Course -> ID)*

Used by:

> **Procedure dbo.CourseTopics**
>
>> ID
>
> **Procedure dbo.DeleteCourse**
>
>> ID
>
> **Procedure dbo.GenerateExam**
>
>> ID
>
> **Procedure dbo.GetInstructorCourses**
>
>> ID
>> Name
>
> **Procedure dbo.InsertCourse**
>
> **Procedure dbo.InsertInstructorCourses**
>
>> ID
>
> **Procedure dbo.SelectCourse**
>
>> Duration
>> ID
>> Name
>
> **Procedure dbo.StudentGrades**
>
>> ID
>> Name
>
> **Procedure dbo.UpdateCourse**
>
>> ID
>> Name
>
> **Procedure dbo.UpdateInstructorCourses**

ID

Table dbo.Department *(7 rows)*

	Column	Data Type	Identity	Nullable	Default
PK	ID	int	X		
	Name	nvarchar(50)		X	
	Description	nvarchar(100)		X	
	Location	nvarchar(50)		X	

Indexes:

PK__Departme__3214EC2747E11C9A *(Primary Key) (Clustered) (14.29% Selectivity)*

ID

Referenced by:

dbo.Instructor *(Department -> ID)*

dbo.Student *(Department -> ID)*

Used by:

Procedure dbo.DeleteDepartment

ID

Procedure dbo.InsertDepartment

Procedure dbo.SelectDepartment

Description
ID
Location
Name

Procedure dbo.StudentInformation

ID

Procedure dbo.UpdateDepartment

Description
ID
Location
Name

Table dbo.Exam *(1 row)*

	Column	Data Type	Identity	Nullable	Default
PK	ID	int	X		

Indexes:

> **PK__Exam__3214EC27CF2E1CBA** *(Primary Key) (Clustered) (100% Selectivity)*
>
>> ID

Referenced by:

> **dbo.ExamQuestions** *(Exam -> ID)*
>
> **dbo.StudentAnswers** *(Exam -> ID)*

Used by:

> **Procedure dbo.AnswerExam**
>
>> ID
>
> **Procedure dbo.DeleteExam**
>
>> ID
>
> **Procedure dbo.GenerateExam**
>
> **Procedure dbo.InsertExam**
>
> **Procedure dbo.InsertStudentAnswer**
>
>> ID
>
> **Procedure dbo.SelectExam**
>
>> ID

Table dbo.ExamQuestions *(10 rows)*

	Column	Data Type	Identity	Nullable	Default
PK, FK	Exam	int			
PK, FK	Question	int			

Indexes:

> **PK__ExamQues__B0C0F9448B9D6262** *(Primary Key) (Clustered) (10% Selectivity)*
>
>> Exam
>> Question

References:

> **dbo.Exam** *(Exam -> ID)*
>
> **dbo.Question** *(Question -> ID)*

Used by:

> **Procedure dbo.AnswerExam**
>
>> Exam
>> Question
>
> **Procedure dbo.DeleteExam**
>
>> Exam
>
> **Procedure dbo.DeleteExamQuestion**
>
>> Exam
>> Question
>
> **Procedure dbo.GenerateExam**
>
>> Exam
>> Question
>
> **Procedure dbo.InsertExamQuestion**
>
> **Procedure dbo.QuestionsExam**
>
>> Exam
>> Question
>
> **Procedure dbo.SelectExamQuestion**
>
>> Exam
>> Question
>
> **Procedure dbo.UpdateExamQuestion**
>
>> Exam
>> Question

Table dbo.Instructor *(15 rows)*

	Column	Data Type	Identity	Nullable	Default
PK	ID	int	X		
	Name	nvarchar(50)		X	
	Degree	nvarchar(50)		X	
	Salary	money		X	
FK	Department	int			

Indexes:

PK__Instruct__3214EC27948FBDEB *(Primary Key) (Clustered) (6.67% Selectivity)*

ID

References:

dbo.Department *(Department -> ID)*

Referenced by:

dbo.InstructorCourses *(Instructor -> ID)*

Used by:

Procedure dbo.DeleteDepartment

Department

Procedure dbo.DeleteInstructor

ID

Procedure dbo.InsertInstructor

Degree
Department
Name
Salary

Procedure dbo.InsertInstructorCourses

ID

Procedure dbo.SelectInstructor

Degree
Department
ID
Name
Salary

Procedure dbo.UpdateInstructor

Degree
ID
Name
Salary

Table dbo.InstructorCourses *(28 rows)*

	Column	Data Type	Identity	Nullable	Default
PK, FK	Instructor	int			
PK, FK	Course	int			

Indexes:

PK__Instruct__3155E6A29628009A *(Primary Key) (Clustered) (3.57% Selectivity)*

Instructor
Course

References:

dbo.Course *(Course -> ID)*

dbo.Instructor *(Instructor -> ID)*

Used by:

Procedure dbo.DeleteInstructorCourses

Course
Instructor

Procedure dbo.GetInstructorCourses

Course
Instructor

Procedure dbo.InsertInstructorCourses

Procedure dbo.SelectInstructorCourses

Course
Instructor

Procedure dbo.UpdateInstructorCourses

Instructor

Table dbo.Question *(49 rows)*

	Column	Data Type	Identity	Nullable	Default
PK	ID	int	X		
	Type	nvarchar(20)		X	
	Body	nvarchar(max)		X	
	ModelAnswer	nchar(1)		X	
	Grade	int			
FK	Course	int			

Indexes:

> **PK__Question__3214EC273830383D** *(Primary Key) (Clustered) (2.04% Selectivity)*
>
>> ID

References:

> **dbo.Course** *(Course -> ID)*

Referenced by:

> **dbo.ExamQuestions** *(Question -> ID)*
>
> **dbo.StudentAnswers** *(Question -> ID)*

Used by:

> **Procedure dbo.AnswerExam**
>
>> Body
>> Course
>> ID
>> Type
>
> **Procedure dbo.CorrectExam**
>
>> Grade
>> ID
>> ModelAnswer
>> Type
>
> **Procedure dbo.DeleteQuestion**
>
>> ID
>
> **Procedure dbo.GenerateExam**
>
>> Body
>> Course
>> ID
>> Type
>
> **Procedure dbo.InsertQuestion**
>
> **Procedure dbo.InsertStudentAnswer**
>
>> ID
>
> **Procedure dbo.Questions_AnswersExam**
>
>> Body
>> ID
>> ModelAnswer
>
> **Procedure dbo.QuestionsExam**
>
>> Body

ID

Procedure dbo.SelectQuestion

Body
Course
Grade
ID
ModelAnswer
Type

Procedure dbo.UpdateQuestion

Body
ID

View dbo.StudentExams

Grade
ID
ModelAnswer

Table dbo.Student *(17 rows)*

	Column	Data Type	Identity	Nullable	Default
PK	ID	int	X		
	FirstName	nvarchar(20)		X	
	LastName	nvarchar(20)		X	
	Address	nvarchar(50)		X	
FK	Department	int			

Indexes:

      PK__Student__3214EC274D6530CE *(Primary Key) (Clustered) (5.88% Selectivity)*

          ID

References:

      dbo.Department *(Department -> ID)*

Referenced by:

      dbo.StudentAnswers *(Student -> ID)*

      dbo.StudentCourses *(Student -> ID)*

Used by:

      Procedure dbo.AnswerExam

          ID

      Procedure dbo.DeleteDepartment

          Department

      Procedure dbo.DeleteStudent

          ID

      Procedure dbo.InsertStudent

      Procedure dbo.InsertStudentAnswer

          ID

      Procedure dbo.SelectStudent

          Address
          Department
          FirstName
          ID
          LastName

      Procedure dbo.StudentInformation

          Address
          Department
          FirstName
          ID
          LastName

Table dbo.StudentAnswers *(10 rows)*

	Column	Data Type	Identity	Nullable	Default
PK, FK	Student	int			
PK, FK	Exam	int			
PK, FK	Question	int			
	Answer	nchar(1)		X	

Indexes:

> **PK__StudentA__415E44E352D8AA28** *(Primary Key) (Clustered) (10% Selectivity)*
>
> > Student
> > Exam
> > Question

References:

> **dbo.Exam** *(Exam -> ID)*
>
> **dbo.Question** *(Question -> ID)*
>
> **dbo.Student** *(Student -> ID)*

Used by:

> **Procedure dbo.CorrectExam**
>
> > Answer
> > Exam
> > Question
> > Student
>
> **Procedure dbo.DeleteExam**
>
> > Exam
>
> **Procedure dbo.DeleteStudentAnswer**
>
> > Exam
> > Question
> > Student
>
> **Procedure dbo.InsertStudentAnswer**
>
> **Procedure dbo.Questions_AnswersExam**
>
> > Exam
> > Question
> > Student
>
> **Procedure dbo.SelectStudentAnswer**
>
> > Answer
> > Exam
> > Question
> > Student
>
> **Procedure dbo.UpdateStudentAnswer**
>
> > Answer
> > Question
> > Student
>
> **View dbo.StudentExams**
>
> > Answer
> > Exam
> > Question

Student

Table dbo.StudentCourses *(36 rows)*

	Column	Data Type	Identity	Nullable	Default
PK, FK	Student	int			
PK, FK	Course	int			
	Grade	int		X	

Indexes:

    PK__StudentC__FB0609F7C2398D6E *(Primary Key) (Clustered) (2.78% Selectivity)*

        Student
        Course

References:

    dbo.Course *(Course -> ID)*

    dbo.Student *(Student -> ID)*

Used by:

    Procedure dbo.AnswerExam

        Course
        Grade
        Student

    Procedure dbo.DeleteStudentCourses

        Course
        Grade
        Student

    Procedure dbo.GetInstructorCourses

        Course
        Student

    Procedure dbo.InsertStudentCourses

    Procedure dbo.SelectStudentCourses

        Course
        Grade
        Student

    Procedure dbo.StudentGrades

        Course
        Grade
        Student

    Procedure dbo.UpdateSudentCourse

        Course
        Grade
        Student

Table dbo.Topic *(4 rows)*

	Column	Data Type	Identity	Nullable	Default
PK	ID	int	X		
	Name	nvarchar(20)		X	
PK, FK	Course	int			

Indexes:

PK__Topic__D340AEA79209E19D *(Primary Key) (Clustered) (25% Selectivity)*

ID
Course

References:

dbo.Course *(Course -> ID)*

Used by:

Procedure dbo.CourseTopics

Course
Name

Procedure dbo.DeleteTopic

ID

Procedure dbo.InsertTopic

Procedure dbo.SelectTopic

Course
ID
Name

Procedure dbo.UpdateTopic

ID
Name

Views:

View dbo.StudentExams

Column	Data Type	Nullable
Student	int	
Exam	int	
ExamGrade	int	X

Uses:

Table dbo.Question

Grade
ID
ModelAnswer

Table dbo.StudentAnswers

Answer
Exam
Question
Student

Procedures:

Procedure dbo.AnswerExam

Parameter	Data Type	Default	Is Output
@exam	int		
@student	int		
@answers	nvarchar(50)		

Uses:

Table dbo.Exam

ID

Table dbo.ExamQuestions

Exam
Question

Table dbo.Question

Body
Course
ID
Type

Table dbo.Student

ID

Table dbo.StudentCourses

Course
Grade
Student

Procedure dbo.CorrectExam

Parameter	Data Type	Default	Is Output
@exam	int		
@student	int		

Result:

Column	Data Type	Nullable
Answer	nvarchar(1)	X
ModelAnswer	nvarchar(1)	X
StudentGrade	int	X

Uses:

Table dbo.Question

Grade
ID
ModelAnswer
Type

Table dbo.StudentAnswers

Answer
Exam
Question
Student

Procedure dbo.CourseTopics

Parameter	Data Type	Default	Is Output
@ID	int		

Result:

Column	Data Type	Nullable
Name	nvarchar(20)	X

Uses:

> **Table dbo.Course**
>
> > ID
>
> **Table dbo.Topic**
>
> > Course
> > Name

Procedure dbo.DeleteCourse

Parameter	Data Type	Default	Is Output
@ID	int		

Uses:

Table dbo.Course

ID

Procedure dbo.DeleteDepartment

Parameter	Data Type	Default	Is Output
@department	int		

Uses:

Table dbo.Department

ID

Table dbo.Instructor

Department

Table dbo.Student

Department

Procedure dbo.DeleteExam

Parameter	Data Type	Default	Is Output
@ID	int		

Uses:

Table dbo.Exam

ID

Table dbo.ExamQuestions

Exam

Table dbo.StudentAnswers

Exam

Procedure dbo.DeleteExamQuestion

Parameter	Data Type	Default	Is Output
@ExamID	int		
@QuestionID	int		

Uses:

Table dbo.ExamQuestions

Exam
Question

Procedure dbo.DeleteInstructor

Parameter	Data Type	Default	Is Output
@insid	int		

Uses:

    Table dbo.Instructor

        ID

Procedure dbo.DeleteInstructorCourses

Parameter	Data Type	Default	Is Output
@insid	int		
@crs	int		

Uses:

Table dbo.InstructorCourses

Course
Instructor

Procedure dbo.DeleteQuestion

Parameter	Data Type	Default	Is Output
@ID	int		

Uses:

Table dbo.Question

ID

Procedure dbo.DeleteStudent

Parameter	Data Type	Default	Is Output
@ID	int		

Uses:

Table dbo.Student

ID

Procedure dbo.DeleteStudentAnswer

Parameter	Data Type	Default	Is Output
@student	int		
@question	int		
@exam	int		

Uses:

Table dbo.StudentAnswers

Exam
Question
Student

Procedure dbo.DeleteStudentCourses

Parameter	Data Type	Default	Is Output
@Student	int		
@course	int		

Uses:

Table dbo.StudentCourses

Course
Grade
Student

Procedure dbo.DeleteTopic

Parameter	Data Type	Default	Is Output
@ID	int		

Uses:

    Table dbo.Topic

        ID

Procedure dbo.GenerateExam

Parameter	Data Type	Default	Is Output
@course	int		
@mcq	int		
@trueOrFalse	int		

Result:

Column	Data Type	Nullable
body	nvarchar(max)	X
Type	nvarchar(20)	X
ID	int	
rank	bigint	X

Uses:

Table dbo.Course

ID

Table dbo.Exam

Table dbo.ExamQuestions

Exam
Question

Table dbo.Question

Body
Course
ID
Type

Procedure dbo.GetInstructorCourses

Parameter	Data Type	Default	Is Output
@ID	int		

Result:

Column	Data Type	Nullable
Name	nvarchar(20)	X
(No column name)	int	X

Uses:

Table dbo.Course

ID
Name

Table dbo.InstructorCourses

Course
Instructor

Table dbo.StudentCourses

Course
Student

Procedure dbo.InsertCourse

Parameter	Data Type	Default	Is Output
@Crs_Name	nvarchar(50)		
@Crs_Duration	int		

Uses:

Table dbo.Course

Procedure dbo.InsertDepartment

Parameter	Data Type	Default	Is Output
@name	nvarchar(50)		
@description	nvarchar(100)		
@location	nvarchar(50)		

Uses:

Table dbo.Department

Procedure dbo.InsertExam

No parameters.

Uses:

Table dbo.Exam

Procedure dbo.InsertExamQuestion

Parameter	Data Type	Default	Is Output
@ExamID	int		
@QuestionID	int		

Uses:

Table dbo.ExamQuestions

Procedure dbo.InsertInstructor

Parameter	Data Type	Default	Is Output
@insnam	nvarchar(50)		
@deg	int		
@sal	money		
@dept	int		

Uses:

Table dbo.Instructor

Degree
Department
Name
Salary

Procedure dbo.InsertInstructorCourses

Parameter	Data Type	Default	Is Output
@insid	int		
@crs	int		

Uses:

Table dbo.Course

ID

Table dbo.Instructor

ID

Table dbo.InstructorCourses

Procedure dbo.InsertQuestion

Parameter	Data Type	Default	Is Output
@type	varchar(20)		
@body	varchar(200)		
@modelanswer	nchar(1)		
@grade	int		
@course	int		

Uses:

      Table dbo.Question

Procedure dbo.InsertStudent

Parameter	Data Type	Default	Is Output
@FName	nvarchar(20)		
@LName	nvarchar(20)		
@Address	nvarchar(50)		
@Department	int		

Uses:

      Table dbo.Student

Procedure dbo.InsertStudentAnswer

Parameter	Data Type	Default	Is Output
@student	int		
@question	int		
@exam	int		
@answer	nchar(1)		

Uses:

    Table dbo.Exam

        ID

    Table dbo.Question

        ID

    Table dbo.Student

        ID

    Table dbo.StudentAnswers

Procedure dbo.InsertStudentCourses

Parameter	Data Type	Default	Is Output
@Student	int		
@Course	int		
@Grade	int		

Uses:

Table dbo.StudentCourses

Procedure dbo.InsertTopic

Parameter	Data Type	Default	Is Output
@name	nvarchar(20)		
@course	int		

Uses:

Table dbo.Topic

Procedure dbo.Questions_AnswersExam

Parameter	Data Type	Default	Is Output
@num	int		
@ID	int		

Result:

Column	Data Type	Nullable
body	nvarchar(max)	X
ModelAnswer	nchar(1)	X

Uses:

Table dbo.Question

Body
ID
ModelAnswer

Table dbo.StudentAnswers

Exam
Question
Student

Procedure dbo.QuestionsExam

Parameter	Data Type	Default	Is Output
@num	int		

Result:

Column	Data Type	Nullable
body	nvarchar(max)	X

Uses:

Table dbo.ExamQuestions

Exam
Question

Table dbo.Question

Body
ID

Procedure dbo.SelectCourse

Parameter	Data Type	Default	Is Output
@id	int		

Result:

Column	Data Type	Nullable
ID	int	
Name	nvarchar(20)	X
Duration	int	X

Uses:

Table dbo.Course

Duration
ID
Name

Procedure dbo.SelectDepartment

Parameter	Data Type	Default	Is Output
@id	int		

Result:

Column	Data Type	Nullable
Name	nvarchar(50)	X
Description	nvarchar(100)	X
Location	nvarchar(50)	X

Uses:

Table dbo.Department

Description
ID
Location
Name

Procedure dbo.SelectExam

Parameter	Data Type	Default	Is Output
@ID	int		

Result:

Column	Data Type	Nullable
ID	int	

Uses:

Table dbo.Exam

ID

Procedure dbo.SelectExamQuestion

Parameter	Data Type	Default	Is Output
@ExamID	int		

Result:

Column	Data Type	Nullable
Exam	int	
Question	int	

Uses:

Table dbo.ExamQuestions

Exam
Question

Procedure dbo.SelectInstructor

No parameters.

Result:

Column	Data Type	Nullable
ID	int	
Name	nvarchar(50)	X
Degree	nvarchar(50)	X
Salary	money	X
Department	int	

Uses:

Table dbo.Instructor

Degree
Department
ID
Name
Salary

Procedure dbo.SelectInstructorCourses

No parameters.

Result:

Column	Data Type	Nullable
Instructor	int	
Course	int	

Uses:

Table dbo.InstructorCourses

Course
Instructor

Procedure dbo.SelectQuestion

Parameter	Data Type	Default	Is Output
@id	int		

Result:

Column	Data Type	Nullable
ID	int	
Type	nvarchar(20)	X
Body	nvarchar(max)	X
ModelAnswer	nchar(1)	X
Grade	int	
Course	int	

Uses:

Table dbo.Question

Body
Course
Grade
ID
ModelAnswer
Type

Procedure dbo.SelectStudent

Parameter	Data Type	Default	Is Output
@ID	int		

Result:

Column	Data Type	Nullable
ID	int	
FirstName	nvarchar(20)	X
LastName	nvarchar(20)	X
Address	nvarchar(50)	X
Department	int	

Uses:

Table dbo.Student

Address
Department
FirstName
ID
LastName

Procedure dbo.SelectStudentAnswer

Parameter	Data Type	Default	Is Output
@student	int		
@question	int		
@exam	int		

Result:

Column	Data Type	Nullable
Answer	nchar(1)	X

Uses:

Table dbo.StudentAnswers

Answer
Exam
Question
Student

Procedure dbo.SelectStudentCourses

Parameter	Data Type	Default	Is Output
@Student	int		
@Course	int		

Result:

Column	Data Type	Nullable
Student	int	
Course	int	
Grade	int	X

Uses:

      Table dbo.StudentCourses

            Course
            Grade
            Student

Procedure dbo.SelectTopic

Parameter	Data Type	Default	Is Output
@id	int		

Result:

Column	Data Type	Nullable
ID	int	
Name	nvarchar(20)	X
Course	int	

Uses:

Table dbo.Topic

Course
ID
Name

Procedure dbo.StudentGrades

Parameter	Data Type	Default	Is Output
@ID	int		

Result:

Column	Data Type	Nullable
Name	nvarchar(20)	X
Grade	int	X

Uses:

Table dbo.Course

ID
Name

Table dbo.StudentCourses

Course
Grade
Student

Procedure dbo.StudentInformation

Parameter	Data Type	Default	Is Output
@X	int		

Result:

Column	Data Type	Nullable
ID	int	
FirstName	nvarchar(20)	X
LastName	nvarchar(20)	X
Address	nvarchar(50)	X
Department	int	

Uses:

Table dbo.Department

    ID

Table dbo.Student

    Address
    Department
    FirstName
    ID
    LastName

Procedure dbo.UpdateCourse

Parameter	Data Type	Default	Is Output
@ID	int		
@CurseName	nvarchar(50)		

Uses:

Table dbo.Course

ID
Name

Procedure dbo.UpdateDepartment

Parameter	Data Type	Default	Is Output
@id	int		
@name	nvarchar(50)		
@description	nvarchar(100)		
@location	nvarchar(50)		

Uses:

Table dbo.Department

Description
ID
Location
Name

Procedure dbo.UpdateExam

Parameter	Data Type	Default	Is Output
@ID	int		

Result:

Column	Data Type	Nullable
(No column name)	varchar(17)	

Procedure dbo.UpdateExamQuestion

Parameter	Data Type	Default	Is Output
@ExamID	int		
@QuestionID	int		

Uses:

Table dbo.ExamQuestions

Exam
Question

Procedure dbo.UpdateInstructor

Parameter	Data Type	Default	Is Output
@insid	int		
@colNam	varchar(20)		
@val	varchar(20)		

Uses:

Table dbo.Instructor

Degree
ID
Name
Salary

Procedure dbo.UpdateInstructorCourses

Parameter	Data Type	Default	Is Output
@insid	int		
@colNam	varchar(20)		
@val	varchar(20)		

Uses:

Table dbo.Course

ID

Table dbo.InstructorCourses

Instructor

Procedure dbo.UpdateQuestion

Parameter	Data Type	Default	Is Output
@ID	int		
@body	varchar(200)		

Uses:

Table dbo.Question

Body
ID

Procedure dbo.UpdateStudent

Parameter	Data Type	Default	Is Output
@ID	int		
@ColumnName	varchar(20)		
@Value	nvarchar(50)		

Procedure dbo.UpdateStudentAnswer

Parameter	Data Type	Default	Is Output
@student	int		
@question	int		
@exam	int		
@answer	nchar(1)		

Uses:

Table dbo.StudentAnswers

Answer
Question
Student

Procedure dbo.UpdateSudentCourse

Parameter	Data Type	Default	Is Output
@Student	int		
@Course	int		
@Grade	int		

Uses:

Table dbo.StudentCourses

Course
Grade
Student

Procedure dbo.UpdateTopic

Parameter	Data Type	Default	Is Output
@ID	int		
@Name	nvarchar(20)		

Uses:

Table dbo.Topic

ID
Name