e-xam ITI Examination System

e-xam is a conceptual digital examination platform designed and developed by our team as part of our assessment for the Advanced Database course at ITI.

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Created: 06-02-2025

Servers

Servers 1

MIINAMAAHER_SAMPLEDB.SQL.BSITE.NET\MSSQL2016

Author: Rahma El Sayed, Heba Abdelwahab, Mina Maher, Shrouk El Mohalhel, Ahmed Yasser

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MIINAMAAHER_SAMPLEDB.SQL.BSITE.NET\MSSQL2016

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Created: 06-02-2025

User databases

User databases 1

miinamaaher_SampleDB

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miinamaaher_SampleDB

Object Types 3

- Tables
- Stored Procedures
- User-Defined Table Types

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Created: 06-02-2025

Tables

Objects 15

Name	Description
dbo.answer_sheets	Represents an answer sheet submitted by a student on a specific exam.
dbo.courses	Represents a Course that contains several topic
dbo.departments	Represents a department that contains several tracks.
dbo.ex_q	Represents the question set in a specific exam.
dbo.exams	Represents an exam containing related info about the exam.
dbo.instructors	Represents an instructor.
dbo.options	Represents the options for MCQ questions.
dbo.questions	Represent question bank.
dbo.std_ex	Used to bind the student and exam tables
dbo.students	Represents a Student
dbo.topics	Represents topic in a course.
dbo.track_crs	Represents the set of courses in a track.
dbo.track_exams	Represents the exams assigned to each track
dbo.tracks	Represent the tracks assigned to specific department.
dbo.users	Contain important info about a user

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dbo.answer_sheets

Description

Represents an answer sheet submitted by a student on a specific exam.

Columns

Key	Name	Data Type	Length	Precision	Scale	Not Null	Identity	Rule	Default	Computed	Persisted	Description
	std_id	int	4	10	0	True				False	False	Student Id
	ex_id	int	4	10	0	True				False	False	Exam Id
	q_id	int	4	10	0	True				False	False	Question Id
	ans	char	1	0	0	False				False	False	Character representing the answer (e.g : A ,B ,C, D)

Indexes

Key	Name	Columns	Unique	Type	Description
	PK__answer_s__955222412E3245D2	std_id, ex_id, q_id	True		Student Id - Exam Id - Question Id

Check Constraints

Name	Columns	Condition	Description
CK__answer_shee__ans__70DDC3D8	ans	([ans]>='a' AND [ans]<='d' OR ([ans]='f' OR [ans]='t'))	The answer should be either : (A , B, C, D) Or (T , F) for MCQ questions and T/F questions respectively.

Foreign Keys

Name	Columns	Description
FK__answer_sh__ex_id__72C60C4A	id	Exam Id
FK__answer_sh__std_i__71D1E811	user_id	Student Id
FK__answer_she__q_id__73BA3083	id	Question Id

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SQL Script

```sql
CREATE TABLE dbo.answer_sheets (
  std_id int NOT NULL,
  ex_id int NOT NULL,
  q_id int NOT NULL,
  ans char(1) NULL,
  PRIMARY KEY CLUSTERED (std_id, ex_id, q_id),
  CHECK ([ans]>='a' AND [ans]<='d' OR ([ans]='f' OR [ans]='t'))
)
ON [PRIMARY]
GO

ALTER TABLE dbo.answer_sheets
  ADD FOREIGN KEY (ex_id) REFERENCES dbo.exams (id)
GO

ALTER TABLE dbo.answer_sheets
  ADD FOREIGN KEY (std_id) REFERENCES dbo.students (user_id)
GO

ALTER TABLE dbo.answer_sheets
  ADD FOREIGN KEY (q_id) REFERENCES dbo.questions (id)
GO
```

Depends On 3

- dbo.exams
- dbo.questions
- dbo.students

Used By 2

- dbo.submitAnswers
- dbo.reviewStudentAnswers

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Created: 06-02-2025

dbo.courses

Description

Represents a Course that contains several topic

Columns

Key	Name	Data Type	Length	Precision	Scale	Not Null	Identity	Rule	Default	Computed	Persisted	Description
	id	int	4	10	0	True	1000 - 1			False	False	Course Id
	name	varchar	50	0	0	True				False	False	Course Name

Indexes

Key	Name	Columns	Unique	Type	Description
	PK__courses__3213E83F3EB95E84	id	True		Course Id (Clustered)
	UQ__courses__72E12F1B957DFC44	name	True		Course Name (Non Clustered)

SQL Script

```
CREATE TABLE dbo.courses (
  id int IDENTITY (1000, 1),
  name varchar(50) NOT NULL,
  PRIMARY KEY CLUSTERED (id),
  UNIQUE (name)
)
ON [PRIMARY]
GO
```

Used By 11

- dbo.exams
- dbo.questions
- dbo.topics
- dbo.track_crs
- dbo.getCoursesByInstId
- dbo.getCourseTopics
- dbo.getExamCourseTitle
- dbo.getInstructorClasses
- dbo.getInstructorCourses
- dbo.getStudentCourses
- dbo.getStudentStats

Author: Rahma El Sayed, Heba Abdelwahab, Mina Maher, Shrouk El Mohalhel, Ahmed Yasser

Created: 06-02-2025

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Created: 06-02-2025

dbo.departments

Description

Represents a department that contains several tracks.

Columns

Key	Name	Data Type	Length	Precision	Scale	Not Null	Identity	Rule	Default	Computed	Persisted	Description
	id	int	4	10	0	True	10 - 1			False	False	Department Id
	name	varchar	50	0	0	True				False	False	Department Name
	mgr_id	int	4	10	0	False				False	False	Manager Id (Instructor)

Indexes

Key	Name	Columns	Unique	Type	Description
	PK__departme__3213E83FCABE83A3	id	True		Department Id
	UQ__departme__72E12F1B09EE4292	name	True		Department Name

Foreign Keys

Name	Columns	Description
FK__departmen__mgr_i__4BAC3F29	user_id	Manager Id

SQL Script

```
CREATE TABLE dbo.departments (
  id int IDENTITY (10, 1),
  name varchar(50) NOT NULL,
  mgr_id int NULL,
  PRIMARY KEY CLUSTERED (id),
  UNIQUE (name)
)
ON [PRIMARY]
GO

ALTER TABLE dbo.departments
  ADD FOREIGN KEY (mgr_id) REFERENCES dbo.instructors (user_id)
GO
```

Depends On 1

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Created: 06-02-2025

dbo.instructors

Used By 4

dbo.instructors

dbo.tracks

dbo.getInstructor

dbo.getStudent

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dbo.ex_q

Description

Represents the question set in a specific exam.

Columns

Key	Name	Data Type	Length	Precision	Scale	Not Null	Identity	Rule	Default	Computed	Persisted	Description
	q_id	int	4	10	0	True				False	False	Question Id
	ex_id	int	4	10	0	True				False	False	Exam Id

Indexes

Key	Name	Columns	Unique	Type	Description
	PK__ex_q__B2348D580D95F4AE	q_id, ex_id	True		Question Id and Exam Id as a Primary Key

Foreign Keys

Name	Columns	Description
FK__ex_q__ex_id__6E01572D	id	Exam Id
FK__ex_q__q_id__6D0D32F4	id	Question Id

SQL Script

```
CREATE TABLE dbo.ex_q (
  q_id int NOT NULL,
  ex_id int NOT NULL,
  PRIMARY KEY CLUSTERED (q_id, ex_id)
)
ON [PRIMARY]
GO

ALTER TABLE dbo.ex_q
  ADD FOREIGN KEY (ex_id) REFERENCES dbo.exams (id)
GO

ALTER TABLE dbo.ex_q
  ADD FOREIGN KEY (q_id) REFERENCES dbo.questions (id)
GO
```

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Depends On 2

- dbo.exams
- dbo.questions

Used By 6

- dbo.DeleteExamQ
- dbo.generateRandomQuestions
- dbo.getExam
- dbo.getExamMcqQuestions
- dbo.getExamTfQuestions
- dbo.updateExamTotalGrade

Author: Rahma El Sayed, Heba Abdelwahab, Mina Maher, Shrouk El Mohalhel, Ahmed Yasser

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dbo.exams

Description

Represents an exam containing related info about the exam.

Columns

Key	Name	Data Type	Length	Precision	Scale	Not Null	Identity	Rule	Default	Computed	Persisted	Description
	id	int	4	10	0	True	1 - 1			False	False	Exam Id
	duration	int	4	10	0	True				False	False	Duration
	title	varchar	20	0	0	False			('exam')	False	False	Exam Title
	total_degree	int	4	10	0	True			(0)	False	False	Total Degree
	crs_id	int	4	10	0	True				False	False	Course Id

Indexes

Key	Name	Columns	Unique	Type	Description
	PK__exams__3213E83FDC37E764	id	True		Exam Id as a primary key

Foreign Keys

Name	Columns	Description
FK__exams__crs_id__6A30C649	id	Course Id

SQL Script

```
CREATE TABLE dbo.exams (
  id int IDENTITY,
  duration int NOT NULL,
  title varchar(20) NULL DEFAULT ('exam'),
  total_degree int NOT NULL CONSTRAINT DF_Exams_TotalGrade DEFAULT (0),
  crs_id int NOT NULL,
  PRIMARY KEY CLUSTERED (id)
)
ON [PRIMARY]
GO

ALTER TABLE dbo.exams
  ADD FOREIGN KEY (crs_id) REFERENCES dbo.courses (id)
GO
```

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Depends On 1

- dbo.courses

Used By 15

- dbo.answer_sheets
- dbo.ex_q
- dbo.std_ex
- dbo.track_exams
- dbo.generateExam
- dbo.getExam
- dbo.getExamCourseTitle
- dbo.getExamResult
- dbo.getExams
- dbo.GetExamsIdByCrsId
- dbo.getStudentCourseExams
- dbo.getStudentStats
- dbo.reviewStudentAnswers
- dbo.updateExamTotalGrade
- dbo.updateGPA

Author: Rahma El Sayed, Heba Abdelwahab, Mina Maher, Shrouk El Mohalhel, Ahmed Yasser

Created: 06-02-2025

dbo.instructors

Description

Represents an instructor.

Columns

Key	Name	Data Type	Length	Precision	Scale	Not Null	Identity	Rule	Default	Computed	Persisted	Description
	user_id	int	4	10	0	True				False	False	Instructor Id
	salary	decimal	9	10	2	False				False	False	
	dept_id	int	4	10	0	True				False	False	Department Id

Indexes

Key	Name	Columns	Unique	Type	Description
	PK__instruct__B9BE370F46C3F88D	user_id	True		Instructor Id as primary key

Check Constraints

Name	Columns	Condition	Description
con_salary	salary	([salary]>=(0))	Salary must be greater than Zero

Foreign Keys

Name	Columns	Description
FK__instructo__dept___48CFD27E	id	Department Id
FK__instructo__user___47DBAE45	id	Instructor Id

SQL Script

```
CREATE TABLE dbo.instructors (
  user_id int NOT NULL,
  salary decimal(10, 2) NULL,
  dept_id int NOT NULL,
  PRIMARY KEY CLUSTERED (user_id),
  CONSTRAINT con_salary CHECK ([salary]>=(0))
)
```

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Created: 06-02-2025

```
ON [PRIMARY]
GO

ALTER TABLE dbo.instructors
  ADD FOREIGN KEY (dept_id) REFERENCES dbo.departments (id)
GO

ALTER TABLE dbo.instructors
  ADD FOREIGN KEY (user_id) REFERENCES dbo.users (id)
GO
```

Depends On 2

- dbo.departments
- dbo.users

Used By 4

- dbo.departments
- dbo.track_crs
- dbo.getCoursesByInstId
- dbo.getInstructor

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Created: 06-02-2025

dbo.options

Description

Represents the options for MCQ questions.

Columns

Key	Name	Data Type	Length	Precision	Scale	Not Null	Identity	Rule	Default	Computed	Persisted	Description
	num	char	1	0	0	True				False	False	Question Number
	q_id	int	4	10	0	True				False	False	Question Id
	body	varchar	1000	0	0	True				False	False	

Indexes

Key	Name	Columns	Unique	Type	Description
	PK__options__CC451654A7E61AC9	num, q_id	True		Option Number & Question Id as a Composite Primary Key

Check Constraints

Name	Columns	Condition	Description
CK__options__num__656C112C	num	([num]>='a' AND [num]<='d')	Option number must be either A, B, C or D.

Foreign Keys

Name	Columns	Description
FK__options__q_id__66603565	id	Question Id

SQL Script

```
CREATE TABLE dbo.options (
  num char(1) NOT NULL,
  q_id int NOT NULL,
  body varchar(1000) NOT NULL,
  PRIMARY KEY CLUSTERED (num, q_id),
  CHECK ([num]>='a' AND [num]<='d')
)
```

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Created: 06-02-2025

```
ON [PRIMARY]
GO

ALTER TABLE dbo.options
  ADD FOREIGN KEY (q_id) REFERENCES dbo.questions (id)
GO
```

Depends On 1

- dbo.questions

Used By 4

- dbo.addMCQQuestion
- dbo.getExam
- dbo.getExamMcqQuestions
- dbo.reviewStudentAnswers

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Created: 06-02-2025

dbo.questions

Description

Represent question bank.

Columns

Key	Name	Data Type	Length	Precision	Scale	Not Null	Identity	Rule	Default	Computed	Persisted	Description
PK	id	int	4	10	0	True	1 - 1			False	False	Question Id
	body	varchar	1000	0	0	True				False	False	
	mark	int	4	10	0	True				False	False	
	type	char	1	0	0	True				False	False	
	ans	char	1	0	0	True				False	False	Character representing the correct answer
FK	crs_id	int	4	10	0	True				False	False	Course Id

Indexes

Key	Name	Columns	Unique	Type	Description
PK	PK__question__3213E83F578BCA2A	id	True		Question Id

Check Constraints

Name	Columns	Condition	Description
CK__questions__ans__619B8048	ans	([ans]>='a' AND [ans]<='d' OR ([ans]='f' OR [ans]='t'))	Answer must be ; (A,B,C,D) or (F, T)
CK__questions__mark__5FB337D6	mark	([mark]>(0))	Mark should be greater than 0
CK__questions__type__60A75C0F	type	([type]='t' OR [type]='m')	Type must be either t for True/False Questions or m for MCQ Questions.

Foreign Keys

Name	Columns	Description
FK__questions__crs_i__628FA481	id	Course Id

SQL Script

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Created: 06-02-2025

```
CREATE TABLE dbo.questions (
  id int IDENTITY,
  body varchar(1000) NOT NULL,
  mark int NOT NULL,
  type char(1) NOT NULL,
  ans char(1) NOT NULL,
  crs_id int NOT NULL,
  PRIMARY KEY CLUSTERED (id),
  CHECK ([ans]>='a' AND [ans]<='d' OR ([ans]='f' OR [ans]='t')),
  CHECK ([mark]>(0)),
  CHECK ([type]='t' OR [type]='m')
)
ON [PRIMARY]
GO

ALTER TABLE dbo.questions
  ADD FOREIGN KEY (crs_id) REFERENCES dbo.courses (id)
GO
```

Depends On 1

- dbo.courses

Used By 13

- dbo.answer_sheets
- dbo.ex_q
- dbo.options
- dbo.correctAnswers
- dbo.addMCQQuestion
- dbo.addTFQuestion
- dbo.generateRandomQuestions
- dbo.getExam
- dbo.getExamMcqQuestions
- dbo.getExamTfQuestions
- dbo.GetTfMcqCount
- dbo.reviewStudentAnswers
- dbo.updateExamTotalGrade

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dbo.std_ex

Description

Used to bind the student and exam tables

Columns

Key	Name	Data Type	Length	Precision	Scale	Not Null	Identity	Rule	Default	Computed	Persisted	Description
	ex_id	int	4	10	0	True				False	False	Exam Id
	std_id	int	4	10	0	True				False	False	Student Id
	grade	int	4	10	0	False			(0)	False	False	
	state	char	1	0	0	False			('m')	False	False	

Indexes

Key	Name	Columns	Unique	Type	Description
	PK__std_ex__4663C0D209999138	ex_id, std_id	True		Exam Id & Student Id as Primary Key

Check Constraints

Name	Columns	Condition	Description
CK__std_ex__state__7C4F7684	state	([state]='t' OR [state]='m' OR [state]='a')	t stands for taken m stands for missed a stands for assign

Foreign Keys

Name	Columns	Description
FK__std_ex__ex_id__7D439ABD	id	Exam Id
FK__std_ex__std_id__7E37BEF6	user_id	Student Id

SQL Script

```
CREATE TABLE dbo.std_ex (
  ex_id int NOT NULL,
  std_id int NOT NULL,
```

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```
  grade int NULL DEFAULT (0),
  state char(1) NULL CONSTRAINT DF__std_ex__state__7B5B524B DEFAULT ('m'),
  PRIMARY KEY CLUSTERED (ex_id, std_id),
  CONSTRAINT CK__std_ex__state__7C4F7684 CHECK ([state]='t' OR [state]='m' OR [state]='a')
)
ON [PRIMARY]
GO

ALTER TABLE dbo.std_ex
  ADD FOREIGN KEY (ex_id) REFERENCES dbo.exams (id)
GO

ALTER TABLE dbo.std_ex
  ADD FOREIGN KEY (std_id) REFERENCES dbo.students (user_id)
GO
```

Depends On 2

- dbo.exams
- dbo.students

Used By 9

- dbo.assignExamToStds
- dbo.correctAnswers
- dbo.submitAnswers
- dbo.getExamResult
- dbo.getExams
- dbo.getStudentCourseExams
- dbo.getStudentStats
- dbo.reviewStudentAnswers
- dbo.updateGPA
- dbo.updateStudentExamState

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dbo.students

Description

Represents a Student

Columns

Key	Name	Data Type	Length	Precision	Scale	Not Null	Identity	Rule	Default	Computed	Persisted	Description
	user_id	int	4	10	0	True				False	False	Student Id
	gpa	decimal	5	4	2	False			(0.00)	False	False	
	track_id	int	4	10	0	True				False	False	Track Id

Indexes

Key	Name	Columns	Unique	Type	Description
	PK__students__B9BE370F6CEE0B5D	user_id	True		Student Id

Foreign Keys

Name	Columns	Description
FK__students__track___5AEE82B9	id	User Id
FK__students__track___5BE2A6F2	id	Track Id

SQL Script

```
CREATE TABLE dbo.students (
  user_id int NOT NULL,
  gpa decimal(4, 2) NULL DEFAULT (0.00),
  track_id int NOT NULL,
  PRIMARY KEY CLUSTERED (user_id)
)
ON [PRIMARY]
GO

ALTER TABLE dbo.students
  ADD FOREIGN KEY (user_id) REFERENCES dbo.users (id)
GO

ALTER TABLE dbo.students
  ADD FOREIGN KEY (track_id) REFERENCES dbo.tracks (id)
GO
```

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Depends On 2

- dbo.tracks
- dbo.users

Used By 11

- dbo.answer_sheets
- dbo.std_ex
- dbo.assignExamToStds
- dbo.checkStudent
- dbo.getInstructorClasses
- dbo.getStudent
- dbo.getStudentCourses
- dbo.getStudentsByTrack
- dbo.getStudentStats
- dbo.getTrackStudents
- dbo.updateGPA
- dbo.updateStudentExamState

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Created: 06-02-2025

dbo.topics

Description

Represents topic in a course.

Columns

Key	Name	Data Type	Length	Precision	Scale	Not Null	Identity	Rule	Default	Computed	Persisted	Description
	crs_id	int	4	10	0	True				False	False	Course Id
	topic	varchar	50	0	0	True				False	False	Topic Name

Indexes

Key	Name	Columns	Unique	Type	Description
	PK__crs_topi__9014D9DBEC2CCC5D	crs_id, topic	True		Course Id & Topic Name as a composite primary key

Foreign Keys

Name	Columns	Description
FK__crs_topic__topic__4222D4EF	id	Course Id

SQL Script

```
CREATE TABLE dbo.topics (
  crs_id int NOT NULL,
  topic varchar(50) NOT NULL,
  PRIMARY KEY CLUSTERED (crs_id, topic)
)
ON [PRIMARY]
GO

ALTER TABLE dbo.topics
  ADD FOREIGN KEY (crs_id) REFERENCES dbo.courses (id)
GO
```

Depends On 1

dbo.courses

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Used By 2

dbo.addtopic

dbo.getCourseTopics

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Created: 06-02-2025

dbo.track_crs

Description

Represents the set of courses in a track.

Columns

Key	Name	Data Type	Length	Precision	Scale	Not Null	Identity	Rule	Default	Computed	Persisted	Description
	track_id	int	4	10	0	True				False	False	Track Id
	crs_id	int	4	10	0	True				False	False	Course Id
	inst_id	int	4	10	0	False				False	False	Instructor Id
	start_date	date	3	10	0	False				False	False	
	end_date	date	3	10	0	False				False	False	

Indexes

Key	Name	Columns	Unique	Type	Description
	PK__track_cr__6A263D195E09836B	track_id, crs_id	True		Track Id & Course Id as a Composite Primary Key.

Foreign Keys

Name	Columns	Description
FK__track_crs__crs_i__5165187F	id	Course Id
FK__track_crs__track__52593CB8	id	Track Id
FK_track_crs_instructors	user_id	Instructor Id

SQL Script

```
CREATE TABLE dbo.track_crs (
  track_id int NOT NULL,
  crs_id int NOT NULL,
  inst_id int NULL,
  start_date date NULL,
  end_date date NULL,
  PRIMARY KEY CLUSTERED (track_id, crs_id)
)
```

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Created: 06-02-2025

```
ON [PRIMARY]
GO

ALTER TABLE dbo.track_crs
  ADD FOREIGN KEY (crs_id) REFERENCES dbo.courses (id)
GO

ALTER TABLE dbo.track_crs
  ADD FOREIGN KEY (track_id) REFERENCES dbo.tracks (id)
GO

ALTER TABLE dbo.track_crs
  ADD CONSTRAINT FK_track_crs_instructors FOREIGN KEY (inst_id) REFERENCES dbo.instructors (user_id)
GO
```

Depends On 3

- dbo.courses
- dbo.instructors
- dbo.tracks

Used By 7

- dbo.getCoursesByInstId
- dbo.getInstructorClasses
- dbo.getInstructorCourses
- dbo.getInstructorTracksInCrs
- dbo.getStudentCourses
- dbo.getStudentStats
- dbo.getTrackNamesAndIds

Author: Rahma El Sayed, Heba Abdelwahab, Mina Maher, Shrouk El Mohalhel, Ahmed Yasser

Created: 06-02-2025

dbo.track_exams

Description

Represents the exams assigned to each track

Columns

Key	Name	Data Type	Length	Precision	Scale	Not Null	Identity	Rule	Default	Computed	Persisted	Description
	track_id	int	4	10	0	True				False	False	
	exam_id	int	4	10	0	True				False	False	
	start_date	datetime	8	23	3	False			(getdate())	False	False	
	end_date	datetime	8	23	3	False			(dateadd(day,(1),getdate()))	False	False	

Foreign Keys

Name	Columns	Description
FK__track_exa__exam___32AB8735	id	Exam Id
FK__track_exa__track__31B762FC	id	Track Id

SQL Script

```
CREATE TABLE dbo.track_exams (
  track_id int NOT NULL,
  exam_id int NOT NULL,
  start_date datetime NULL DEFAULT (getdate()),
  end_date datetime NULL DEFAULT (dateadd(day,(1),getdate()))
)
ON [PRIMARY]
GO

ALTER TABLE dbo.track_exams
  ADD FOREIGN KEY (exam_id) REFERENCES dbo.exams (id)
GO

ALTER TABLE dbo.track_exams
  ADD FOREIGN KEY (track_id) REFERENCES dbo.tracks (id)
GO
```

Depends On 2

dbo.exams

dbo.tracks

Author: Rahma El Sayed, Heba Abdelwahab, Mina Maher, Shrouk El Mohalhel, Ahmed Yasser

Created: 06-02-2025

Used By 3

- dbo.assignExamToTracks
- dbo.getExams
- dbo.updateGPA
- dbo.updateStudentExamState

Author: Rahma El Sayed, Heba Abdelwahab, Mina Maher, Shrouk El Mohalhel, Ahmed Yasser

Created: 06-02-2025

dbo.tracks

Description

Represent the tracks assigned to specific department.

Columns

Key	Name	Data Type	Length	Precision	Scale	Not Null	Identity	Rule	Default	Computed	Persisted	Description
	id	int	4	10	0	True	100 - 1			False	False	Track Id
	name	varchar	50	0	0	True				False	False	Track Name
	dept_id	int	4	10	0	True				False	False	Department Id

Indexes

Key	Name	Columns	Unique	Type	Description
	PK__tracks__3213E83FB1C1A0C2	id	True		Track Id (Clustered)

Foreign Keys

Name	Columns	Description
FK__tracks__dept_id__4E88ABD4	id	Department Id

SQL Script

```
CREATE TABLE dbo.tracks (
  id int IDENTITY (100, 1),
  name varchar(50) NOT NULL,
  dept_id int NOT NULL,
  PRIMARY KEY CLUSTERED (id)
)
ON [PRIMARY]
GO

ALTER TABLE dbo.tracks
  ADD FOREIGN KEY (dept_id) REFERENCES dbo.departments (id)
GO
```

Depends On 1

dbo.departments

Author: Rahma El Sayed, Heba Abdelwahab, Mina Maher, Shrouk El Mohalhel, Ahmed Yasser

Created: 06-02-2025

Used By 10

- dbo.students
- dbo.track_crs
- dbo.track_exams
- dbo.getInstructorClasses
- dbo.getInstructorTracksInCrs
- dbo.getStudent
- dbo.getStudentCourses
- dbo.getStudentsByTrack
- dbo.getTrackNamesAndIds
- dbo.getTrackStudents

Author: Rahma El Sayed, Heba Abdelwahab, Mina Maher, Shrouk El Mohalhel, Ahmed Yasser

Created: 06-02-2025

dbo.users

Description

Contain important info about a user

Columns

Key	Name	Data Type	Length	Precision	Scale	Not Null	Identity	Rule	Default	Computed	Persisted	Description
	id	int	4	10	0	True	10000 - 1			False	False	User Id
	first_name	varchar	20	0	0	True				False	False	
	last_name	varchar	20	0	0	True				False	False	
	user_name	varchar	50	0	0	True				False	False	
	pw	varchar	20	0	0	True				False	False	Password
	type	char	1	0	0	True				False	False	
	gender	char	1	0	0	True				False	False	
	ssn	varchar	14	0	0	True				False	False	

Indexes

Key	Name	Columns	Unique	Type	Description
	PK__users__3213E83FF1301B3A	id	True		User Id
	UQ__users__7C9273C45BFA94C6	user_name	True		
	UQ__users__DDDF0AE6C8BA0657	ssn	True		

Check Constraints

Name	Columns	Condition	Description
ch_user_type	type	([type]='s' OR [type]='i')	Must be either s for student or i for instructor
con_gender	gender	([gender]='f' OR [gender]='m')	Must be either f for female or m for male
con_ssn	ssn	(NOT [ssn] like '%[^0-9]%')	Must be only numbers
first_name_const	first_name	(NOT [first_name] like '%[^A-Za-z]%')	Must be only Letters
last_name_const	last_name	(NOT [last_name] like '%[^A-Za-z]%')	Must be only Letters
user_name_const	user_name	(NOT [user_name] like '%[^A-Za-z0-9_.]%')	Must be either Letters or Numbers

Author: Rahma El Sayed, Heba Abdelwahab, Mina Maher, Shrouk El Mohalhel, Ahmed Yasser

Created: 06-02-2025

SQL Script

```
CREATE TABLE dbo.users (
  id int IDENTITY (10000, 1),
  first_name varchar(20) NOT NULL,
  last_name varchar(20) NOT NULL,
  user_name varchar(50) NOT NULL,
  pw varchar(20) NOT NULL,
  type char(1) NOT NULL,
  gender char(1) NOT NULL,
  ssn varchar(14) NOT NULL,
  PRIMARY KEY CLUSTERED (id),
  UNIQUE (user_name),
  UNIQUE (ssn),
  CONSTRAINT ch_user_type CHECK ([type]='s' OR [type]='i'),
  CONSTRAINT con_gender CHECK ([gender]='f' OR [gender]='m'),
  CONSTRAINT con_ssn CHECK (NOT [ssn] like '%[^0-9]%'),
  CONSTRAINT first_name_const CHECK (NOT [first_name] like '%[^A-Za-z ]%'),
  CONSTRAINT last_name_const CHECK (NOT [last_name] like '%[^A-Za-z ]%'),
  CONSTRAINT user_name_const CHECK (NOT [user_name] like '%[^A-Za-z0-9_.]%')
)
ON [PRIMARY]
GO
```

Depends On

No items found

Used By 16

- dbo.instructors
- dbo.students
- dbo.getInstructor
- dbo.getStudent
- dbo.getStudentsByTrack
- dbo.getStudentStats
- dbo.getTrackStudents
- dbo.getUser
- dbo.login
- dbo.reviewStudentAnswers
- dbo.updateFirstName
- dbo.updateGender
- dbo.updateLastName
- dbo.updatePassword
- dbo.updateSSN
- dbo.updateUserName

Author: Rahma El Sayed, Heba Abdelwahab, Mina Maher, Shrouk El Mohalhel, Ahmed Yasser

Created: 06-02-2025

Programmability

Objects 2

- Stored Procedures
- Types

Author: Rahma El Sayed, Heba Abdelwahab, Mina Maher, Shrouk El Mohalhel, Ahmed Yasser

Created: 06-02-2025

Stored Procedures

Objects 44

Name	Description
dbo.addMCQQuestion	Adding MCQ Questions from the end user to Question Bank.
dbo.addTFQuestion	Adding True/False Question from end-user interface to the question bank.
dbo.addtopic	Add topic to specific course.
dbo.assignExamToStds	Assigns an Exam to the students of specific track.
dbo.assignExamToTracks	Assign Exams to tracks and set start and end date.
dbo.checkStudent	Checks whether an id is a valid Id of a student or not.
dbo.correctAnswers	Correcting Answers, set the final grade in student exam table and executes the updateGPA procedure.
dbo.DeleteExamQ	Delete the question set in an exam to regenerate another one.
dbo.generateAnotherExamQ	Regenerates the exam and update the total grade.
dbo.generateExam	Generates an exam on a specific course and update the total grade.
dbo.generateRandomQuestions	Generates a random question set.
dbo.getCoursesByInstId	Retrieves specific courses taught by certain instructor
dbo.getCourseTopics	Retrieves topics for specific course.
dbo.getExam	Retrieves an Exam based on its Id.
dbo.getExamCourseTitle	Retrieving the title of an exam and the course name
dbo.getExamMcqQuestions	Retrieving the MCQ Questions for specific exam
dbo.getExamResult	Retrieving and calculating the result of specific exam.
dbo.getExams	Retrieving exams.
dbo.GetExamsIdByCrsId	Retrieving specific exam by course id
dbo.getExamTfQuestions	Retrieving T/F Questions for specific exam
dbo.getInstructor	Retrieving instructor data by its id
dbo.getInstructorClasses	Retrieving Classes taught by certain instructor
dbo.getInstructorCourses	Retrieving the Courses taught by certain instructor.
dbo.getInstructorTracksInCrs	Retrieve the tracks that contains specific course taught by specific instructor.
dbo.getStudent	Retrieving student's data
dbo.getStudentCourseExams	Retrieving list of exams assigned to specific student on a specific course
dbo.getStudentCourses	Getting list of courses for specific student.
dbo.getStudentsByTrack	Retrieves list of students in a specific track.
dbo.getStudentStats	Retrieve the grades of a student in all of his courses
dbo.GetTfMcqCount	Gets the number of TF & MCQ Questions available in a specific course.

Author: Rahma El Sayed, Heba Abdelwahab, Mina Maher, Shrouk El Mohalhel, Ahmed Yasser

Created: 06-02-2025

dbo.getTrackNamesAndIds	Gets the Tracks taught by specific instructor.
dbo.getTrackStudents	Gets Students in a certain track.
dbo.getUser	Gets user data to edit their profile.
dbo.login	Checks the user id and its password and logs them in if they are matched.
dbo.reviewStudentAnswers	Retrieves the answer sheet of a student in a specific exam.
dbo.submitAnswers	Submitting student answers in a specific exam and executes correct answer procedure
dbo.updateExamTotalGrade	Sets the total grade of an exam.
dbo.updateFirstName	Updates the first name of a certain user
dbo.updateGender	Updates the gender of a certain user
dbo.updateGPA	Updates the GPA of a certain user
dbo.updateLastName	Updates the last name of a certain user
dbo.updatePassword	Updates the password of a certain user after checking the old password.
dbo.updateSSN	Updates the SSN of a certain user
dbo.updateUserName	Updates the user name of a certain user

Author: Rahma El Sayed, Heba Abdelwahab, Mina Maher, Shrouk El Mohalhel, Ahmed Yasser

Created: 06-02-2025

dbo.addMCQQuestion

Parameters

Name	Data Type	Length	Description
@body	varchar	100	Body
@mark	int	4	Mark
@type	char	1	Type
@ans	char	1	Answer
@crs_id	int	4	Course Id
@optionA	varchar	100	
@optionB	varchar	100	
@optionC	varchar	100	
@optionD	varchar	100	

SQL Script

```
SET QUOTED_IDENTIFIER, ANSI_NULLS ON
GO

CREATE PROC dbo.addMCQQuestion
    @body varchar(100),
    @mark int,
    @type char,
    @ans char,
    @crs_id int,
@optionA varchar(100),
@optionB varchar(100),
@optionC varchar(100),
@optionD varchar(100)
    --@new_id int OUTPUT -- Output parameter to return the new ID
AS
BEGIN
    BEGIN TRANSACTION;
    -- Insert into the questions table
    INSERT INTO questions (body, mark, type, ans, crs_id)
    VALUES (@body, @mark, @type, @ans, @crs_id);

DECLARE @question_Id INT = SCOPE_IDENTITY();

INSERT INTO options (num, q_id, body)
    VALUES ('A', @question_Id, @optionA);

INSERT INTO options (num, q_id, body)
    VALUES ('B', @question_Id, @optionB);

INSERT INTO options (num, q_id, body)
    VALUES ('C', @question_Id, @optionC);

INSERT INTO options (num, q_id, body)
    VALUES ('D', @question_Id, @optionD);
    COMMIT TRANSACTION;
END
```

Author: Rahma El Sayed, Heba Abdelwahab, Mina Maher, Shrouk El Mohalhel, Ahmed Yasser

Created: 06-02-2025

```
GO
```

Depends On 2

- dbo.questions
- dbo.options

Used By

No items found

dbo.addTFQuestion

Parameters

Name	Data Type	Length	Description
@body	varchar	100	Question's Body
@mark	int	4	Question's Mark
@type	char	1	Question Type
@ans	char	1	Correct Answer
@crs_id	int	4	Course Id

SQL Script

```
SET QUOTED_IDENTIFIER, ANSI_NULLS ON
GO
CREATE PROC dbo.addTFQuestion
    @body varchar(100),
    @mark int,
    @type char,
    @ans char,
    @crs_id int

AS
BEGIN
    BEGIN TRANSACTION;
    INSERT INTO questions (body, mark, type, ans, crs_id)
    VALUES (@body, @mark, @type, @ans, @crs_id);
    COMMIT TRANSACTION;
END
GO
```

Depends On 1

dbo.questions

Used By

No items found

Author: Rahma El Sayed, Heba Abdelwahab, Mina Maher, Shrouk El Mohalhel, Ahmed Yasser

Created: 06-02-2025

dbo.addtopic

Parameters

Name	Data Type	Length	Description
@topicname	varchar	50	Topic Name
@courseid	int	4	Course Id

SQL Script

```
SET QUOTED_IDENTIFIER, ANSI_NULLS ON
GO
CREATE PROCEDURE dbo.addtopic
    @topicname VARCHAR(50),
    @courseid INT
AS
BEGIN
    INSERT INTO topics (crs_id, topic)
    VALUES (@courseid, @topicname);
END;
GO
```

Depends On 1

dbo.topics

Used By

No items found

Author: Rahma El Sayed, Heba Abdelwahab, Mina Maher, Shrouk El Mohalhel, Ahmed Yasser

Created: 06-02-2025

dbo.assignExamToStds

Parameters

Name	Data Type	Length	Description
@examId	int	4	Exam Id
@tracks	examTracks	max	Table of Track Ids

SQL Script

```
SET QUOTED_IDENTIFIER, ANSI_NULLS ON
GO
CREATE proc dbo.assignExamToStds @examId int , @tracks examTracks readonly
as
begin

insert into std_ex(ex_id , std_id)
select @examId, user_id
from students
where track_id in
(
select Id
from @tracks
)
end
GO
```

Depends On 2

dbo.std_ex

dbo.students

Used By 1

dbo.assignExamToTracks

Author: Rahma El Sayed, Heba Abdelwahab, Mina Maher, Shrouk El Mohalhel, Ahmed Yasser

Created: 06-02-2025

dbo.assignExamToTracks

Parameters

Name	Data Type	Length	Description
@examId	int	4	Exam Id
@startDate	datetime	8	
@endDate	datetime	8	
@tracks	examTracks	max	

SQL Script

```
SET QUOTED_IDENTIFIER, ANSI_NULLS ON
GO
CREATE proc dbo.assignExamToTracks @examId int ,@startDate datetime,@endDate datetime, @tracks examTracks readonly
as
begin
begin try
BEGIN TRANSACTION;
insert into track_exams
select id ,@examId, @startDate , @endDate
from @tracks
exec assignExamToStds @examId ,@tracks
select @examId as id;
COMMIT TRANSACTION;
end try
begin catch
ROLLBACK TRANSACTION;
select -1 as id;
end catch
end
GO
```

Depends On 2

- dbo.track_exams
- dbo.assignExamToStds

Used By

No items found

Author: Rahma El Sayed, Heba Abdelwahab, Mina Maher, Shrouk El Mohalhel, Ahmed Yasser

Created: 06-02-2025

dbo.checkStudent

Parameters

Name	Data Type	Length	Description
@id	int	4	Student Id

SQL Script

```
SET QUOTED_IDENTIFIER, ANSI_NULLS ON
GO
CREATE proc dbo.checkStudent @id int
as
begin
if not exists(select * from students where user_id = @id)
select 0
else
select 1
end
GO
```

Depends On 1

dbo.students

Used By

No items found

Author: Rahma El Sayed, Heba Abdelwahab, Mina Maher, Shrouk El Mohalhel, Ahmed Yasser

Created: 06-02-2025

dbo.correctAnswers

Parameters

Name	Data Type	Length	Description
@studentId	int	4	Student Id
@examId	int	4	Exam Id
@answers	questionAnswer	max	Answers

SQL Script

```
SET QUOTED_IDENTIFIER, ANSI_NULLS ON
GO
CREATE proc dbo.correctAnswers @studentId int, @examId int, @answers questionAnswer readonly
as
begin
    update std_ex set grade =
    (
        select SUM(IIF(q.ans = a.answerNum, q.mark, 0))
        from questions q
        join @answers a on q.id = a.questionId
    ), state = 't'
    where std_id = @studentId and ex_id = @examId
    execute updateGPA @studentId
end
GO
```

Depends On 3

- dbo.std_ex
- dbo.questions
- dbo.updateGPA

Used By 1

- dbo.submitAnswers

Author: Rahma El Sayed, Heba Abdelwahab, Mina Maher, Shrouk El Mohalhel, Ahmed Yasser

Created: 06-02-2025

dbo.DeleteExamQ

Parameters

Name	Data Type	Length	Description
@examId	int	4	Exam Id

SQL Script

```
SET QUOTED_IDENTIFIER, ANSI_NULLS ON
GO
create proc dbo.DeleteExamQ @examId int
as
begin
delete
from ex_q
where ex_id = @examId
end
GO
```

Depends On 1

dbo.ex_q

Used By 1

dbo.generateAnotherExamQ

Author: Rahma El Sayed, Heba Abdelwahab, Mina Maher, Shrouk El Mohalhel, Ahmed Yasser

Created: 06-02-2025

dbo.generateAnotherExamQ

Parameters

Name	Data Type	Length	Description
@examId	int	4	Exam Id
@courseId	int	4	Course Id
@tfCount	int	4	Number of T/F Questions
@mcqCount	int	4	Number of MCQ Questions

SQL Script

```
SET QUOTED_IDENTIFIER, ANSI_NULLS ON
GO

CREATE proc dbo.generateAnotherExamQ @examId int , @courseId int, @tfCount int , @mcqCount int
as
begin
begin try
BEGIN TRANSACTION;
exec DeleteExamQ @examId
exec generateRandomQuestions @examId , @courseId , @tfCount  , @mcqCount
exec updateExamTotalGrade @examId
  select @examId as id;
COMMIT TRANSACTION;
end try
begin catch
ROLLBACK TRANSACTION;
select -1 as id;
end catch
end
GO
```

Depends On 3

- dbo.DeleteExamQ
- dbo.generateRandomQuestions
- dbo.updateExamTotalGrade

Used By

No items found

Author: Rahma El Sayed, Heba Abdelwahab, Mina Maher, Shrouk El Mohalhel, Ahmed Yasser

Created: 06-02-2025

dbo.generateExam

Parameters

Name	Data Type	Length	Description
@courseId	int	4	Course Id
@tfCount	int	4	Number of T/F Questions
@mcqCount	int	4	Number of MCQ Questions
@duration	int	4	
@title	varchar	20	for example : Quiz or Final Exam or .....

SQL Script

```
SET QUOTED_IDENTIFIER, ANSI_NULLS ON
GO
CREATE proc dbo.generateExam @courseId int , @tfCount int , @mcqCount int , @duration int , @title varchar(20)
as
begin
BEGIN TRY

BEGIN TRANSACTION;
declare @examId int
insert into exams( duration,title , crs_id)
values(@duration,@title,@courseId)

set @examId = scope_identity()
exec generateRandomQuestions @examId  ,@courseId ,@tfCount , @mcqCount
exec updateExamTotalGrade @examId
select @examId as id

COMMIT TRANSACTION;
END TRY

BEGIN CATCH
        ROLLBACK TRANSACTION;
select -1 as id;
END CATCH;

end
GO
```

Depends On 3

- dbo.exams
- dbo.generateRandomQuestions
- dbo.updateExamTotalGrade

Used By

No items found

Author: Rahma El Sayed, Heba Abdelwahab, Mina Maher, Shrouk El Mohalhel, Ahmed Yasser

Created: 06-02-2025

Author: Rahma El Sayed, Heba Abdelwahab, Mina Maher, Shrouk El Mohalhel, Ahmed Yasser

Created: 06-02-2025

dbo.generateRandomQuestions

Parameters

Name	Data Type	Length	Description
@examId	int	4	Exam Id
@courseId	int	4	Course Id
@tfCount	int	4	Number of T/F Questions
@mcqCount	int	4	Number of MCQ Questions

SQL Script

```
SET QUOTED_IDENTIFIER, ANSI_NULLS ON
GO
CREATE proc dbo.generateRandomQuestions @examId int, @courseId int, @tfCount int , @mcqCount int
as
begin
insert into ex_q
select*
from
(
SELECT TOP (@tfCount)  id, @examId 'ex_id'
FROM questions
WHERE crs_id = @courseId  AND type = 't'
ORDER BY NEWID()

UNION ALL

SELECT TOP (@mcqCount)  id, @examId  'ex_id'
FROM questions
WHERE crs_id = @courseId  AND type = 'm'
ORDER BY NEWID()
) as t
end
GO
```

Depends On 2

- dbo.ex_q
- dbo.questions

Used By 2

- dbo.generateAnotherExamQ
- dbo.generateExam

Author: Rahma El Sayed, Heba Abdelwahab, Mina Maher, Shrouk El Mohalhel, Ahmed Yasser

Created: 06-02-2025

Author: Rahma El Sayed, Heba Abdelwahab, Mina Maher, Shrouk El Mohalhel, Ahmed Yasser

Created: 06-02-2025

dbo.getCoursesByInstId

Parameters

Name	Data Type	Length	Description
@instId	int	4	Instructor Id

SQL Script

```
SET QUOTED_IDENTIFIER, ANSI_NULLS ON
GO
CREATE PROC dbo.getCoursesByInstId @instId INT
AS
BEGIN

SELECT DISTINCT c.id, c.name
FROM instructors AS i
INNER JOIN track_crs AS tcrs
ON i.user_id = tcrs.inst_id
inner join courses as c
ON tcrs.crs_id = c.id
WHERE i.user_id = @instId
END;
GO
```

Depends On 3

- dbo.instructors
- dbo.track_crs
- dbo.courses

Used By

No items found

Author: Rahma El Sayed, Heba Abdelwahab, Mina Maher, Shrouk El Mohalhel, Ahmed Yasser

Created: 06-02-2025

dbo.getCourseTopics

Parameters

Name	Data Type	Length	Description
@crsId	int	4	Course Id

SQL Script

```
SET QUOTED_IDENTIFIER, ANSI_NULLS ON
GO
create proc dbo.getCourseTopics @crsId int
as
begin
select t.topic
from courses c inner join topics t
on c.id =  t.crs_id and c.id = @crsId

end
GO
```

Depends On 2

- dbo.courses
- dbo.topics

Used By

No items found

Author: Rahma El Sayed, Heba Abdelwahab, Mina Maher, Shrouk El Mohalhel, Ahmed Yasser

Created: 06-02-2025

dbo.getExam

Parameters

Name	Data Type	Length	Description
@examId	int	4	Exam Id

SQL Script

```
SET QUOTED_IDENTIFIER, ANSI_NULLS ON
GO
CREATE proc dbo.getExam @examId int
as
begin
select e.duration, e.title, q.id, q.body as q_body, q.type, o.num, o.body as o_body
from exams e
join ex_q eq on e.id = eq.ex_id
join questions q on q.id = eq.q_id
left join options o on o.q_id = q.id
where e.id = @examId
end
GO
```

Depends On 4

- dbo.exams
- dbo.ex_q
- dbo.questions
- dbo.options

Used By

No items found

Author: Rahma El Sayed, Heba Abdelwahab, Mina Maher, Shrouk El Mohalhel, Ahmed Yasser

Created: 06-02-2025

dbo.getExamCourseTitle

Parameters

Name	Data Type	Length	Description
@examId	int	4	Exam Id

SQL Script

```
SET QUOTED_IDENTIFIER, ANSI_NULLS ON
GO
CREATE proc dbo.getExamCourseTitle @examId int
as
begin
select title , e.duration, c.name
from exams e inner join courses c
on e.crs_id= c.id and e.id = @examId
end
GO
```

Depends On 2

- dbo.exams
- dbo.courses

Used By

No items found

Author: Rahma El Sayed, Heba Abdelwahab, Mina Maher, Shrouk El Mohalhel, Ahmed Yasser

Created: 06-02-2025

dbo.getExamMcqQuestions

Parameters

Name	Data Type	Length	Description
@examId	int	4	Exam Id

SQL Script

```
SET QUOTED_IDENTIFIER, ANSI_NULLS ON
GO
CREATE proc dbo.getExamMcqQuestions  @examId int
as
begin
select q.body as 'question_body' , q.mark , o.num as'choice_num',o.body as 'choice_body'
from ex_q eq inner join  questions q
on eq.ex_id = @examId and eq.q_id = q.id and q.type = 'm'
inner join options o
on q.id = o.q_id
end
GO
```

Depends On 3

- dbo.ex_q
- dbo.questions
- dbo.options

Used By

No items found

Author: Rahma El Sayed, Heba Abdelwahab, Mina Maher, Shrouk El Mohalhel, Ahmed Yasser

Created: 06-02-2025

dbo.getExamResult

Parameters

Name	Data Type	Length	Description
@examId	int	4	Exam Id
@studentId	int	4	Student Id

SQL Script

```
SET QUOTED_IDENTIFIER, ANSI_NULLS ON
GO
CREATE proc dbo.getExamResult @examId int, @studentId int
as
begin
    select Round( ( convert(float, se.grade) / convert(float, e.total_degree) * 100) , 2)
    from std_ex se
    join exams e on e.id = se.ex_id
    where ex_id = @examId and std_id = @studentId
end
GO
```

Depends On 2

- dbo.std_ex
- dbo.exams

Used By

No items found

Author: Rahma El Sayed, Heba Abdelwahab, Mina Maher, Shrouk El Mohalhel, Ahmed Yasser

Created: 06-02-2025

dbo.getExams

Parameters

Name	Data Type	Length	Description
@studentid	int	4	Student Id
@courseid	int	4	Course Id
@trakid	int	4	Track Id

SQL Script

```
SET QUOTED_IDENTIFIER, ANSI_NULLS ON
GO
CREATE procedure dbo.getExams @studentid int ,@courseid int ,@trakid int
as
begin

select e.id ,e.title , te.start_date as startDate,te.end_date as endDate, se.state as status
from exams e
inner join std_ex se
on e.id=se.ex_id
and se.std_id=@studentid
inner join track_exams te on e.id =te.exam_id
where te.track_id=@trakid and e.crs_id=@courseid
order by te.end_date desc

end
GO
```

Depends On 3

- dbo.exams
- dbo.std_ex
- dbo.track_exams

Used By

No items found

Author: Rahma El Sayed, Heba Abdelwahab, Mina Maher, Shrouk El Mohalhel, Ahmed Yasser

Created: 06-02-2025

dbo.GetExamsIdByCrsId

Parameters

Name	Data Type	Length	Description
@courseId	int	4	Course Id

SQL Script

```
SET QUOTED_IDENTIFIER, ANSI_NULLS ON
GO
create proc dbo.GetExamsIdByCrsId @courseId int
as
begin
select id
from exams
where crs_id = @courseId
end
GO
```

Depends On 1

dbo.exams

Used By

No items found

Author: Rahma El Sayed, Heba Abdelwahab, Mina Maher, Shrouk El Mohalhel, Ahmed Yasser

Created: 06-02-2025

dbo.getExamTfQuestions

Parameters

Name	Data Type	Length	Description
@examId	int	4	Exam Id

SQL Script

```
SET QUOTED_IDENTIFIER, ANSI_NULLS ON
GO
CREATE proc dbo.getExamTfQuestions  @examId int
as
begin
select q.body as 'question_body', q.mark
from ex_q eq inner join  questions q
on eq.ex_id = @examId and eq.q_id = q.id and q.type = 't'
end
GO
```

Depends On 2

- dbo.ex_q
- dbo.questions

Used By

No items found

Author: Rahma El Sayed, Heba Abdelwahab, Mina Maher, Shrouk El Mohalhel, Ahmed Yasser

Created: 06-02-2025

dbo.getInstructor

Parameters

Name	Data Type	Length	Description
@id	int	4	Instructor Id

SQL Script

```
SET QUOTED_IDENTIFIER, ANSI_NULLS ON
GO

CREATE procedure dbo.getInstructor @id int
as
begin
select u.id,u.type,u.first_name, u.last_name, i.dept_id ,d.name as dept_name
from users u
inner join instructors i on u.id = i.user_id
inner join departments d on d.id = i.dept_id
where u.id = @id
end
GO
```

Depends On 3

- dbo.users
- dbo.instructors
- dbo.departments

Used By

No items found

Author: Rahma El Sayed, Heba Abdelwahab, Mina Maher, Shrouk El Mohalhel, Ahmed Yasser

Created: 06-02-2025

dbo.getInstructorClasses

Parameters

Name	Data Type	Length	Description
@id	int	4	Instructor Id

SQL Script

```
SET QUOTED_IDENTIFIER, ANSI_NULLS ON
GO
CREATE procedure dbo.getInstructorClasses @id int
as
begin
select c.id as 'course_id', c.name as 'course_name', t.id as 'track_id', t.name as 'track_name', count(s.user_id)
as 'student_numbers'
from track_crs tc
inner join courses c on c.id = tc.crs_id
inner join tracks t on t.id = tc.track_id
inner join students s on tc.track_id = s.track_id
where tc.inst_id = @id
group by c.id, c.name, t.id, t.name
end
GO
```

Depends On 4

- dbo.track_crs
- dbo.courses
- dbo.tracks
- dbo.students

Used By

No items found

Author: Rahma El Sayed, Heba Abdelwahab, Mina Maher, Shrouk El Mohalhel, Ahmed Yasser

Created: 06-02-2025

dbo.getInstructorCourses

Parameters

Name	Data Type	Length	Description
@instId	int	4	Instructor Id

SQL Script

```
SET QUOTED_IDENTIFIER, ANSI_NULLS ON
GO
CREATE proc dbo.getInstructorCourses @instId int
as
begin
select distinct c.name , c.id
from courses c inner join track_crs tc
on c.id = tc.crs_id and tc.inst_id = @instId
end
GO
```

Depends On 2

- dbo.courses
- dbo.track_crs

Used By

No items found

Author: Rahma El Sayed, Heba Abdelwahab, Mina Maher, Shrouk El Mohalhel, Ahmed Yasser

Created: 06-02-2025

dbo.getInstructorTracksInCrs

Parameters

Name	Data Type	Length	Description
@instId	int	4	Instructor Id
@crsId	int	4	Course Id

SQL Script

```
SET QUOTED_IDENTIFIER, ANSI_NULLS ON
GO
create proc dbo.getInstructorTracksInCrs @instId int , @crsId int
as
begin
select t.id , t.name
from tracks t inner join track_crs tc
on t.id = tc.track_id and tc.inst_id = @instId and tc.crs_id = @crsId
end
GO
```

Depends On 2

- dbo.tracks
- dbo.track_crs

Used By

No items found

Author: Rahma El Sayed, Heba Abdelwahab, Mina Maher, Shrouk El Mohalhel, Ahmed Yasser

Created: 06-02-2025

dbo.getStudent

Parameters

Name	Data Type	Length	Description
@id	int	4	Student Id

SQL Script

```
SET QUOTED_IDENTIFIER, ANSI_NULLS ON
GO

CREATE procedure dbo.getStudent @id int
as
begin
select u.type,u.id,u.first_name, u.last_name, s.gpa, s.track_id, t.name as track_name, t.dept_id ,d.name as
dept_name
from users u
inner join students s on u.id = s.user_id
inner join tracks t on t.id = s.track_id
inner join departments d on d.id = t.dept_id
where u.id = @id
end
GO
```

Depends On 4

- dbo.users
- dbo.students
- dbo.tracks
- dbo.departments

Used By

No items found

Author: Rahma El Sayed, Heba Abdelwahab, Mina Maher, Shrouk El Mohalhel, Ahmed Yasser

Created: 06-02-2025

dbo.getStudentCourseExams

Parameters

Name	Data Type	Length	Description
@crs_id	int	4	Course Id
@std_id	int	4	Student Id

SQL Script

```
SET QUOTED_IDENTIFIER, ANSI_NULLS ON
GO
CREATE proc dbo.getStudentCourseExams @crs_id int, @std_id int
as
begin
select e.id , e.title
from std_ex se
inner join exams e on e.id = se.ex_id
and se.std_id = @std_id and e.crs_id = @crs_id
where state = 't'
end
GO
```

Depends On 2

dbo.std_ex

dbo.exams

Used By

No items found

Author: Rahma El Sayed, Heba Abdelwahab, Mina Maher, Shrouk El Mohalhel, Ahmed Yasser

Created: 06-02-2025

dbo.getStudentCourses

Parameters

Name	Data Type	Length	Description
@id	int	4	Student Id

SQL Script

```
SET QUOTED_IDENTIFIER, ANSI_NULLS ON
GO
CREATE procedure dbo.getStudentCourses @id int
as
begin
        select c.id as id ,c.name as name
        from  students s
inner join tracks t on t.id = s.track_id
inner join track_crs tc on tc.track_id = t.id
inner join  courses c on tc.crs_id = c.id
        where s.user_id = @id

end
GO
```

Depends On 4

- dbo.students
- dbo.tracks
- dbo.track_crs
- dbo.courses

Used By

No items found

Author: Rahma El Sayed, Heba Abdelwahab, Mina Maher, Shrouk El Mohalhel, Ahmed Yasser

Created: 06-02-2025

dbo.getStudentsByTrack

Parameters

Name	Data Type	Length	Description
@trackId	int	4	Track Id

SQL Script

```
SET QUOTED_IDENTIFIER, ANSI_NULLS ON
GO
CREATE PROCEDURE dbo.getStudentsByTrack
   @trackId INT
AS
BEGIN
   SELECT tracks.name as track_name, tracks.id as track_id ,usr.first_name, usr.last_name, stud.gpa
   FROM users AS usr
   JOIN students AS stud
   on usr.id = stud.user_id
   JOIN tracks
   ON tracks.id = stud.track_id
   WHERE tracks.id = @trackID
END
GO
```

Depends On 3

- dbo.users
- dbo.students
- dbo.tracks

Used By

No items found

Author: Rahma El Sayed, Heba Abdelwahab, Mina Maher, Shrouk El Mohalhel, Ahmed Yasser

Created: 06-02-2025

dbo.getStudentStats

Parameters

Name	Data Type	Length	Description
@id	int	4	Student Id

SQL Script

```
SET QUOTED_IDENTIFIER, ANSI_NULLS ON
GO
CREATE procedure dbo.getStudentStats @id int
as
begin
if exists(select * from students where user_id = @id)
begin

select u.first_name, u.last_name , gpa, c.name as course_name,
ROUND(
CASE
WHEN SUM(ISNULL(se.grade, 0)) = 0 OR SUM(ISNULL(e.total_degree, 0)) = 0
THEN 0  -- Handle cases where no exams were taken
ELSE (CONVERT(FLOAT, SUM(se.grade)) / CONVERT(FLOAT, SUM(e.total_degree)) * 100)
END, 2) AS total_grade
from students s
inner join users u on u.id = s.user_id
join track_crs tc on tc.track_id = s.track_id
inner join courses c on c.id = tc.crs_id
left join exams e on e.crs_id = c.id
left join std_ex se on s.user_id = se.std_id and e.id = se.ex_id
where s.user_id = @id
group by u.first_name, u.last_name , gpa, c.name
order by c.name
end
end
GO
```

Depends On 6

- dbo.students
- dbo.users
- dbo.track_crs
- dbo.courses
- dbo.exams
- dbo.std_ex

Used By

No items found

Author: Rahma El Sayed, Heba Abdelwahab, Mina Maher, Shrouk El Mohalhel, Ahmed Yasser

Created: 06-02-2025

Author: Rahma El Sayed, Heba Abdelwahab, Mina Maher, Shrouk El Mohalhel, Ahmed Yasser

Created: 06-02-2025

dbo.GetTfMcqCount

Parameters

Name	Data Type	Length	Description
@courseId	int	4	

SQL Script

```
SET QUOTED_IDENTIFIER, ANSI_NULLS ON
GO
CREATE proc dbo.GetTfMcqCount @courseId int
as
begin
declare @tfcountTable int ,@mcqCountTable int

select @tfcountTable = count(*)
from questions
where type = 't' and crs_id = @courseId

select @mcqCountTable = COUNT(*)
from questions
where type = 'm'and crs_id = @courseId

select @tfcountTable 'tf' , @mcqCountTable 'mcq'
end
GO
```

Depends On 1

dbo.questions

Used By

No items found

Author: Rahma El Sayed, Heba Abdelwahab, Mina Maher, Shrouk El Mohalhel, Ahmed Yasser

Created: 06-02-2025

dbo.getTrackNamesAndIds

Parameters

Name	Data Type	Length	Description
@instId	int	4	Instructor Id

SQL Script

```
SET QUOTED_IDENTIFIER, ANSI_NULLS ON
GO
CREATE PROCEDURE dbo.getTrackNamesAndIds @instId INT
    AS
    BEGIN
        SELECT DISTINCT t.id , t.name
FROM tracks AS t

INNER JOIN track_crs AS trCrs
ON t.id = trCrs.track_id

WHERE trCrs.inst_id = @instId;
    END
GO
```

Depends On 2

- dbo.tracks
- dbo.track_crs

Used By

No items found

Author: Rahma El Sayed, Heba Abdelwahab, Mina Maher, Shrouk El Mohalhel, Ahmed Yasser

Created: 06-02-2025

dbo.getTrackStudents

Parameters

Name	Data Type	Length	Description
@id	int	4	Track Id

SQL Script

```
SET QUOTED_IDENTIFIER, ANSI_NULLS ON
GO
CREATE proc dbo.getTrackStudents  @id int
as
begin
select u.id,first_name, last_name
from tracks t
inner join students s on t.id = s.track_id
inner join users u on u.id = s.user_id
and t.id = @id

end
GO
```

Depends On 3

- dbo.tracks
- dbo.students
- dbo.users

Used By

No items found

Author: Rahma El Sayed, Heba Abdelwahab, Mina Maher, Shrouk El Mohalhel, Ahmed Yasser

Created: 06-02-2025

dbo.getUser

Parameters

Name	Data Type	Length	Description
@id	int	4	User Id

SQL Script

```
SET QUOTED_IDENTIFIER, ANSI_NULLS ON
GO
CREATE procedure dbo.getUser @id int
as
begin
select u.type,u.id,u.first_name, u.last_name, u.ssn, u.gender, u.user_name
from users u
where u.id = @id
end
GO
```

Depends On 1

dbo.users

Used By

No items found

Author: Rahma El Sayed, Heba Abdelwahab, Mina Maher, Shrouk El Mohalhel, Ahmed Yasser

Created: 06-02-2025

dbo.login

Parameters

Name	Data Type	Length	Description
@userName	varchar	50	
@password	varchar	20	

SQL Script

```
SET QUOTED_IDENTIFIER, ANSI_NULLS ON
GO
CREATE procedure dbo.login @userName varchar(50), @password varchar(20)
as
begin
if exists(select * from users where user_name = @userName and pw = @password)
begin

select id, type from users where user_name = @userName
end
else
begin
select 0 as id, ' ' as type
end
end
GO
```

Depends On 1

dbo.users

Used By

No items found

Author: Rahma El Sayed, Heba Abdelwahab, Mina Maher, Shrouk El Mohalhel, Ahmed Yasser

Created: 06-02-2025

dbo.reviewStudentAnswers

Parameters

Name	Data Type	Length	Description
@ex_id	int	4	
@std_id	int	4	

SQL Script

```
SET QUOTED_IDENTIFIER, ANSI_NULLS ON
GO
CREATE procedure dbo.reviewStudentAnswers @ex_id int, @std_id int
as
begin
select newTable.*, o.num 'OptionNum', o.body 'OptionBody'
from
(
select u.first_name 'FirstName', u.last_name 'LastName', round( (convert(float,se.grade) / e.total_degree) * 100
, 2) as 'Score', q.id , q.body 'QuestionBody', q.type 'QuestionType',sheet.ans 'StudentAnswer', q.ans 'ModelAnswer'
from answer_sheets sheet
inner join questions q on q.id = sheet.q_id
inner join users u on u.id = sheet.std_id
inner join std_ex se on u.id = se.std_id and sheet.ex_id = se.ex_id
inner join exams e on e.id = se.ex_id
AND sheet.ex_id = @ex_id AND sheet.std_id = @std_id
) newTable

left join options o on newTable.id = o.q_id
order by newTable.id, o.num
end
GO
```

Depends On 6

- dbo.answer_sheets
- dbo.questions
- dbo.users
- dbo.std_ex
- dbo.exams
- dbo.options

Used By

No items found

Author: Rahma El Sayed, Heba Abdelwahab, Mina Maher, Shrouk El Mohalhel, Ahmed Yasser

Created: 06-02-2025

dbo.submitAnswers

Parameters

Name	Data Type	Length	Description
@studentId	int	4	
@examId	int	4	
@answers	questionAnswer	max	

SQL Script

```
SET QUOTED_IDENTIFIER, ANSI_NULLS ON
GO
CREATE proc dbo.submitAnswers @studentId int, @examId int, @answers questionAnswer readonly
as
    begin
    if ((select state from std_ex where std_id = @studentId and ex_id = @examId) = 'm')
    begin
       insert into answer_sheets (std_id, ex_id, q_id, ans)
       select @studentId, @examId, questionId, answerNum
       from @answers
       execute correctAnswers @studentId, @examId, @answers
    end
    end
GO
```

Depends On 3

- dbo.std_ex
- dbo.answer_sheets
- dbo.correctAnswers

Used By

No items found

Author: Rahma El Sayed, Heba Abdelwahab, Mina Maher, Shrouk El Mohalhel, Ahmed Yasser

Created: 06-02-2025

dbo.updateExamTotalGrade

Parameters

Name	Data Type	Length	Description
@examId	int	4	

SQL Script

```
SET QUOTED_IDENTIFIER, ANSI_NULLS ON
GO
create proc dbo.updateExamTotalGrade @examId int
as
begin
update exams
set total_degree = (
select sum(q.mark)
from exams ex inner join ex_q exq
on ex.id = exq.ex_id and ex.id =@examId
inner join questions q
on exq.q_id = q.id
)
where id = @examId
end
GO
```

Depends On 3

- dbo.exams
- dbo.ex_q
- dbo.questions

Used By 2

- dbo.generateAnotherExamQ
- dbo.generateExam

Author: Rahma El Sayed, Heba Abdelwahab, Mina Maher, Shrouk El Mohalhel, Ahmed Yasser

Created: 06-02-2025

dbo.updateFirstName

Parameters

Name	Data Type	Length	Description
@id	int	4	
@newFirstName	varchar	20	

SQL Script

```
SET QUOTED_IDENTIFIER, ANSI_NULLS ON
GO
create procedure dbo.updateFirstName @id int, @newFirstName varchar(20)
as
begin
update users
set first_name = @newFirstName
where id = @id
end
GO
```

Depends On 1

dbo.users

Used By

No items found

Author: Rahma El Sayed, Heba Abdelwahab, Mina Maher, Shrouk El Mohalhel, Ahmed Yasser

Created: 06-02-2025

dbo.updateGender

Parameters

Name	Data Type	Length	Description
@id	int	4	
@newGender	char	1	

SQL Script

```
SET QUOTED_IDENTIFIER, ANSI_NULLS ON
GO
create procedure dbo.updateGender @id int, @newGender char(1)
as
begin
update users
set gender = @newGender
where id = @id
end
GO
```

Depends On 1

dbo.users

Used By

No items found

Author: Rahma El Sayed, Heba Abdelwahab, Mina Maher, Shrouk El Mohalhel, Ahmed Yasser

Created: 06-02-2025

dbo.updateGPA

Parameters

Name	Data Type	Length	Description
@studentId	int	4	

SQL Script

```
SET QUOTED_IDENTIFIER, ANSI_NULLS ON
GO
CREATE proc dbo.updateGPA @studentId int
as
begin
update students set gpa =
(
select round((convert(float, sum(se.grade))/sum(e.total_degree) * 100), 2)
from std_ex se
join students s on s.user_id = se.std_id and s.user_id = @studentId and se.std_id = @studentId
join exams e on se.ex_id = e.id
join track_exams te on te.exam_id = e.id and s.track_id = te.track_id
where se.state = 't' or (se.state = 'm' and DATEADD(HOUR, 7, GETDATE()) > te.end_date)
)
where user_id = @studentId
end
GO
```

Depends On 4

- dbo.students
- dbo.std_ex
- dbo.exams
- dbo.track_exams

Used By 1

- dbo.correctAnswers

Author: Rahma El Sayed, Heba Abdelwahab, Mina Maher, Shrouk El Mohalhel, Ahmed Yasser

Created: 06-02-2025

dbo.updateLastName

Parameters

Name	Data Type	Length	Description
@id	int	4	
@newLastName	varchar	20	

SQL Script

```
SET QUOTED_IDENTIFIER, ANSI_NULLS ON
GO
create procedure dbo.updateLastName @id int, @newLastName varchar(20)
as
begin
update users
set last_name = @newLastName
where id = @id
end
GO
```

Depends On 1

dbo.users

Used By

No items found

Author: Rahma El Sayed, Heba Abdelwahab, Mina Maher, Shrouk El Mohalhel, Ahmed Yasser

Created: 06-02-2025

dbo.updatePassword

Parameters

Name	Data Type	Length	Description
@id	int	4	
@oldPassword	varchar	20	
@newPassword	varchar	20	

SQL Script

```
SET QUOTED_IDENTIFIER, ANSI_NULLS ON
GO
CREATE procedure dbo.updatePassword @id int, @oldPassword varchar(20), @newPassword varchar(20)
as
begin
update users
set pw = @newPassword
where id = @id and pw = @oldPassword
end
GO
```

Depends On 1

dbo.users

Used By

No items found

Author: Rahma El Sayed, Heba Abdelwahab, Mina Maher, Shrouk El Mohalhel, Ahmed Yasser

Created: 06-02-2025

dbo.updateSSN

Parameters

Name	Data Type	Length	Description
@id	int	4	
@newSSN	varchar	14	

SQL Script

```
SET QUOTED_IDENTIFIER, ANSI_NULLS ON
GO
create procedure dbo.updateSSN @id int, @newSSN varchar(14)
as
begin
update users
set ssn = @newSSN
where id = @id
end
GO
```

Depends On 1

dbo.users

Used By

No items found

Author: Rahma El Sayed, Heba Abdelwahab, Mina Maher, Shrouk El Mohalhel, Ahmed Yasser

Created: 06-02-2025

dbo.updateUserName

Parameters

Name	Data Type	Length	Description
@id	int	4	
@newUserName	varchar	50	

SQL Script

```
SET QUOTED_IDENTIFIER, ANSI_NULLS ON
GO
create procedure dbo.updateUserName @id int, @newUserName varchar(50)
as
begin
update users
set user_name = @newUserName
where id = @id
end
GO
```

Depends On 1

dbo.users

Used By

No items found

Author: Rahma El Sayed, Heba Abdelwahab, Mina Maher, Shrouk El Mohalhel, Ahmed Yasser

Created: 06-02-2025

Types

Objects 1

User-Defined Table Types

Author: Rahma El Sayed, Heba Abdelwahab, Mina Maher, Shrouk El Mohalhel, Ahmed Yasser

Created: 06-02-2025

User-Defined Table Types

Objects 2

Name	Description
dbo.examTracks	
dbo.questionAnswer	

Author: Rahma El Sayed, Heba Abdelwahab, Mina Maher, Shrouk El Mohalhel, Ahmed Yasser

Created: 06-02-2025

dbo.examTracks

Columns

Key	Name	Data Type	Length	Precision	Scale	Not Null	Identity	Rule	Default	Computed	Persisted	Description
	Id	int	4	10	0	True				False	False	Exam Id

SQL Script

```
CREATE TYPE dbo.examTracks AS TABLE (
  Id int NOT NULL,
  PRIMARY KEY CLUSTERED (Id)
)
GO
```

Depends On

No items found

Used By

No items found

Author: Rahma El Sayed, Heba Abdelwahab, Mina Maher, Shrouk El Mohalhel, Ahmed Yasser

Created: 06-02-2025

dbo.questionAnswer

Columns

Key	Name	Data Type	Length	Precision	Scale	Not Null	Identity	Rule	Default	Computed	Persisted	Description
	questionId	int	4	10	0	False				False	False	Question Id
	answerNum	char	1	0	0	False				False	False	Answer

SQL Script

```
CREATE TYPE dbo.questionAnswer AS TABLE (
  questionId int NULL,
  answerNum char(1) NULL
)
GO
```

Depends On

No items found

Used By

No items found

Author: Rahma El Sayed, Heba Abdelwahab, Mina Maher, Shrouk El Mohalhel, Ahmed Yasser

Created: 06-02-2025