ExamSystem@.Doc1

Data Dictionary

2024-02-28

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Legend

- Primary key
- Primary key disabled
- User-defined primary key
- Unique key
- Unique key disabled
- User-defined unique key
- Active trigger
- Disabled trigger
- Many to one relationship
- User-defined many to one relationship
- One to many relationship
- User-defined one to many relationship
- Many to many relationship
- User-defined many to many relationship
- One to one relationship
- User-defined one to one relationship
- Input
- Output
- Input/Output
- Uses dependency
- User-defined uses dependency
- Used by dependency
- User-defined used by dependency

ExamSystem@.Doc1

1. Tables

1.1. Table: dbo.Choices

Columns

		Name	Data type	Description / Attributes
		ChoiceID	int	**Identity / Auto increment**
		Value	varchar(100)	**Nullable**

Linked from

Table	Join	Title / Name / Description
dbo.QuestionChoices	**dbo.Choices**ChoiceID = dbo.QuestionChoicesChoiceID	FK__QuestionC__Choic__5FB337D6
dbo.Questions	**dbo.Choices**ChoiceID = dbo.QuestionsModelAns	FK__Questions__Model__59FA5E80
dbo.StudentExamAns	**dbo.Choices**ChoiceID = dbo.StudentExamAnsStudentChoiceID	FK__StudentEx__Stude__6C190EBB

Unique keys

Columns	Name / Description
ChoiceID	PK__Choices__76F5168618121EA5

Used By

Name
dbo.Choices
dbo.QuestionChoices
dbo.Questions
dbo.StudentExamAns

1.2. Table: dbo.Courses

Columns

Name	Data type	Description / Attributes
CrsID	int	**Identity / Auto increment**
CrsName	varchar(50)	**Nullable**
InsID	int	**Nullable** **References**: HumanResources.Instructor
DeptID	int	**Nullable** **References**: HumanResources.Department

Links to

Table	Join	Title / Name / Description
HumanResources.Department	**dbo.Courses**DeptID = HumanResources.DepartmentDeptID	FK__Courses__DeptID__4BAC3F29
HumanResources.Instructor	**dbo.Courses**InsID = HumanResources.InstructorInsID	FK__Courses__InsID__4AB81AF0

Linked from

Table	Join	Title / Name / Description
dbo.Exam	**dbo.Courses**CrsID = dbo.ExamCrsID	FK__Exam__CrsID__628FA481
dbo.Questions	**dbo.Courses**CrsID = dbo.QuestionsCrsID	FK__Questions__CrsID__59063A47
dbo.StudentCourse	**dbo.Courses**CrsID = dbo.StudentCourseCrsID	FK__StudentCo__CrsID__52593CB8
dbo.Topics	**dbo.Courses**CrsID = dbo.TopicsCrsID	FK__Topics__CrsID__4E88ABD4

Unique keys

Columns	Name / Description
CrsID	PK__Courses__FAC236BD9BD98F06

Uses

Name
dbo.Courses
HumanResources.Department
HumanResources.Instructor

Used By

Name
dbo.Courses
dbo.Exam
dbo.Questions
dbo.StudentCourse
dbo.Topics

1.3. Table: dbo.Exam

Columns

		Name	Data type	Description / Attributes
		ExamID	int	**Identity / Auto increment**
		StartTime	datetime	**Nullable**
		EndTime	datetime	**Nullable**
		Instructions	varchar(255)	**Nullable**
		CrsID	int	**Nullable** **References**: dbo.Courses

Links to

	Table	Join	Title / Name / Description
	dbo.Courses	**dbo.Exam**CrsID = dbo.CoursesCrsID	FK__Exam__CrsID__628FA481

Linked from

	Table	Join	Title / Name / Description
	dbo.ExamQuestions	**dbo.Exam**ExamID = dbo.ExamQuestionsExamID	FK__ExamQuest__ExamI__656C112C
	dbo.StudentExamAns	**dbo.Exam**ExamID = dbo.StudentExamAnsExamID	FK__StudentEx__ExamI__6A30C649

Unique keys

	Columns	Name / Description
	ExamID	PK__Exam__297521A7558527F5

Uses

Name
dbo.Exam
dbo.Courses

Used By

Name
dbo.Exam
dbo.ExamQuestions
dbo.StudentExamAns

1.4. Table: dbo.ExamQuestions

Columns

Name	Data type	Description / Attributes
ExamID	int	**References**: dbo.Exam
QID	int	**References**: dbo.Questions
StID	int	**Nullable** **References**: dbo.Student

Links to

Table	Join	Title / Name / Description
dbo.Exam	**dbo.ExamQuestions**ExamID = dbo.ExamExamID	FK__ExamQuest__ExamI__656C112C
dbo.Questions	**dbo.ExamQuestions**QID = dbo.QuestionsQID	FK__ExamQuestio__QID__66603565
dbo.Student	**dbo.ExamQuestions**StID = dbo.StudentStID	FK_ExamQuestions_Student

Unique keys

Columns	Name / Description
ExamID, QID	PK__ExamQues__85DE35DBC2D24874

Uses

Name
dbo.ExamQuestions
dbo.Exam
dbo.Questions
dbo.Student

1.5. Table: dbo.QuestionChoices

Columns

Name	Data type	Description / Attributes
QID	int	**References**: dbo.Questions
ChoiceID	int	**References**: dbo.Choices

Links to

Table	Join	Title / Name / Description
dbo.Choices	**dbo.QuestionChoices**ChoiceID = dbo.ChoicesChoiceID	FK__QuestionC__Choic__5FB337D6
dbo.Questions	**dbo.QuestionChoices**QID = dbo.QuestionsQID	FK__QuestionCho__QID__5EBF139D

Unique keys

Columns	Name / Description
QID, ChoiceID	PK__Question__BDDE16A3AA05CD38

Uses

Name
dbo.QuestionChoices
dbo.Choices
dbo.Questions

1.6. Table: dbo.Questions

Columns

Name	Data type	Description / Attributes
QID	int	**Identity / Auto increment**
Complexity	varchar(6)	**Nullable** **Default**: 'easy'
Type	varchar(5)	**Nullable** **Default**: 'MCQ'
Weight	int	**Computed**: (case when [Complexity]='easy' then (1) when [Complexity]='medium' then (2) else (3) end)
QText	varchar(255)	**Nullable**
CrsID	int	**Nullable** **References**: dbo.Courses
ModelAns	int	**Nullable** **References**: dbo.Choices

Links to

Table	Join	Title / Name / Description
dbo.Choices	**dbo.Questions**ModelAns = dbo.ChoicesChoiceID	FK__Questions__Model__59FA5E80
dbo.Courses	**dbo.Questions**CrsID = dbo.CoursesCrsID	FK__Questions__CrsID__59063A47

Linked from

Table	Join	Title / Name / Description
dbo.ExamQuestions	**dbo.Questions**QID = dbo.ExamQuestionsQID	FK__ExamQuestio__QID__66603565
dbo.QuestionChoices	**dbo.Questions**QID = dbo.QuestionChoicesQID	FK__QuestionCho__QID__5EBF139D
dbo.StudentExamAns	**dbo.Questions**QID = dbo.StudentExamAnsQID	FK__StudentExam__QID__6B24EA82

Unique keys

Columns	Name / Description
QID	PK__Question__CAB147CB975E24BC

Uses

Name
dbo.Questions
dbo.Choices
dbo.Courses

Used By

Name
dbo.Questions

Name
dbo.ExamQuestions
dbo.QuestionChoices
dbo.StudentExamAns

1.7. Table: dbo.Student

Columns

Name	Data type	Description / Attributes
StID	int	**Identity / Auto increment**
FinalEvaluation	real	**Nullable**
PersonID	int	**Nullable** **References**: HumanResources.Person

Links to

Table	Join	Title / Name / Description
HumanResources.Person	**dbo.Student**PersonID = HumanResources.PersonID	FK__Student__PersonI__440B1D61

Linked from

Table	Join	Title / Name / Description
dbo.ExamQuestions	**dbo.Student**StID = dbo.ExamQuestionsStID	FK_ExamQuestions_Student
dbo.StudentCourse	**dbo.Student**StID = dbo.StudentCourseStID	FK__StudentCou__StID__5165187F
dbo.StudentExamAns	**dbo.Student**StID = dbo.StudentExamAnsStID	FK__StudentExa__StID__693CA210

Unique keys

Columns	Name / Description
StID	PK__Student__C33CEFE2E64355F2

Uses

Name
dbo.Student
HumanResources.Person

Used By

Name
dbo.Student
dbo.ExamQuestions
dbo.StudentCourse
dbo.StudentExamAns

1.8. Table: dbo.StudentCourse

Columns

Name	Data type	Description / Attributes
StID	int	**References**: dbo.Student
CrsID	int	**References**: dbo.Courses
Grade	float	**Nullable**

Links to

Table	Join	Title / Name / Description
dbo.Courses	**dbo.StudentCourse**CrsID = dbo.CoursesCrsID	FK__StudentCo__CrsID__52593CB8
dbo.Student	**dbo.StudentCourse**StID = dbo.StudentStID	FK__StudentCou__StID__5165187F

Unique keys

Columns	Name / Description
StID, CrsID	PK__StudentC__0C90CC89D1C0EB34

Uses

Name
dbo.StudentCourse
dbo.Courses
dbo.Student

1.9. Table: dbo.StudentExamAns

Columns

Name	Data type	Description / Attributes
StID	int	**References**: dbo.Student
ExamID	int	**References**: dbo.Exam
QID	int	**References**: dbo.Questions
StudentChoiceID	int	**Nullable** **References**: dbo.Choices
IsCorrect	int	**Nullable**
RN	int	**Nullable**

Links to

Table	Join	Title / Name / Description
dbo.Choices	**dbo.StudentExamAns**StudentChoiceID = dbo.ChoicesChoiceID	FK__StudentEx__Stude__6C190EBB
dbo.Exam	**dbo.StudentExamAns**ExamID = dbo.ExamExamID	FK__StudentEx__ExamI__6A30C649
dbo.Questions	**dbo.StudentExamAns**QID = dbo.QuestionsQID	FK__StudentExam__QID__6B24EA82
dbo.Student	**dbo.StudentExamAns**StID = dbo.StudentStID	FK__StudentExa__StID__693CA210

Unique keys

Columns	Name / Description
StID, ExamID, QID	PK__StudentE__6B610CBF484D2754

Uses

Name
dbo.StudentExamAns
dbo.Choices
dbo.Exam
dbo.Questions
dbo.Student

1.10. Table: dbo.Topics

Columns

Name	Data type	Description / Attributes
TopicID	int	**Identity / Auto increment**
TopicName	varchar(50)	**Nullable**
CrsID	int	**Nullable** **References**: dbo.Courses

Links to

Table	Join	Title / Name / Description
dbo.Courses	**dbo.Topics**CrsID = dbo.CoursesCrsID	FK__Topics__CrsID__4E88ABD4

Unique keys

Columns	Name / Description
TopicID	PK__Topics__022E0F7D0B67D028

Uses

Name
dbo.Topics
dbo.Courses

1.11. Table: HumanResources.Department

Columns

		Name	Data type	Description / Attributes
		DeptID	int	**Identity / Auto increment**
		Dept_Name	varchar(50)	
		DeptDesc	varchar(255)	**Nullable**
		MgrID	int	**Nullable** **References**: HumanResources.Instructor

Links to

	Table	Join	Title / Name / Description
	HumanResources.Instructor	**HumanResources.Department**MgrID = HumanResources.InstructorInsID	FK__Departmen__MgrID__46E78A0C

Linked from

	Table	Join	Title / Name / Description
	dbo.Courses	**HumanResources.Department**DeptID = dbo.CoursesDeptID	FK__Courses__DeptID__4BAC3F29

Unique keys

	Columns	Name / Description
	DeptID	PK__Departme__0148818E2062603B

Uses

Name
HumanResources.Department
HumanResources.Instructor

Used By

Name
HumanResources.Department
dbo.Courses

1.12. Table: HumanResources.Instructor

Columns

		Name	Data type	Description / Attributes
		InsID	int	**Identity / Auto increment**
		Salary	real	**Nullable** **Default**: 0.0
		Position	varchar(50)	**Default**: 'Employee'
		IsAdmin	bit	**Nullable** **Default**: 0
		PersonID	int	**Nullable** **References**: HumanResources.Person

Links to

	Table	Join	Title / Name / Description
	HumanResources.Person	**HumanResources.Instructor**PersonID = HumanResources.PersonID	FK__Instructo__Perso__412EB0B6

Linked from

	Table	Join	Title / Name / Description
	dbo.Courses	**HumanResources.Instructor**InsID = dbo.CoursesInsID	FK__Courses__InsID__4AB81AF0
	HumanResources.Department	**HumanResources.Instructor**InsID = HumanResources.DepartmentMgrID	FK__Departmen__MgrID__46E78A0C

Unique keys

	Columns	Name / Description
	InsID	PK__Instruct__9D104D8FFCFB00A2

Uses

Name
HumanResources.Instructor
HumanResources.Person

Used By

Name
HumanResources.Instructor
dbo.Courses
HumanResources.Department

1.13. Table: HumanResources.Person

Columns

Name	Data type	Description / Attributes
ID	int	**Identity / Auto increment**
Address	varchar(50)	**Nullable**
Phone	varchar(13)	
Fname	varchar(50)	
Lname	varchar(50)	
Password	varchar(50)	
UserRole	varchar(10)	**Default**: 'Student'
Email	varchar(50)	
Username	varchar(50)	
DeptID	int	

Linked from

Table	Join	Title / Name / Description
HumanResources.Instructor	**HumanResources.Person**ID = HumanResources.InstructorPersonID	FK__Instructo__Perso__412EB0B6
dbo.Student	**HumanResources.Person**ID = dbo.StudentPersonID	FK__Student__PersonI__440B1D61

Unique keys

Columns	Name / Description
ID	PK__Person__3214EC2701E1AB17
Email	CEmail
Phone	CPhone
Username	CUserName

Triggers

Name	When	Description
PersonTrigger	After Insert	

```
CREATE trigger [HumanResources].[PersonTrigger]
on [HumanResources].[Person]
after insert
as
begin
    insert into Instructor(PersonID)
    select ID
    from inserted
    where UserRole = 'Instructor';

    insert into Student(PersonID)
    select ID
    from inserted
    where UserRole = 'Student';
end;
```

PersonTriggerDelete	After Delete	

Name	When	Description

```
create trigger PersonTriggerDelete
on Person
after delete
as
            declare @type varchar(10), @id int
            select @type = UserRole from deleted
            select @id = ID from deleted
            if  @type = 'Instructor'
                        begin
                                    delete from Instructor
                                    where PersonId = @id
                        end
           else
                        begin
                                    delete from Student
                                    where PersonId = @id
                        end
```

Used By

Name
HumanResources.Person
dbo.Student
HumanResources.Instructor

2. Procedures

2.1. Procedure: dbo.ChoicesDelete

Input/Output

	Name	Data type	Description
→@	cid	int	

Script

```
create proc ChoicesDelete(@cid int)
as
          begin
                    delete from Choices
                    where ChoiceID = @cid
          end
```

2.2. Procedure: dbo.ChoicesInsert

Input/Output

	Name	Data type	Description
→@	value	varchar(250)	

Script

```
create proc ChoicesInsert(@value varchar(250))
as
          begin
                    insert into Choices(value)
                    values(@value)
          end
```

2.3. Procedure: dbo.ChoicesSelect

Input/Output

	Name	Data type	Description
→@	cid	int	

Script

```
create proc ChoicesSelect(@cid int )
as
          begin
                    select * from Choices
                    where ChoiceID = @cid
          end
```

2.4. Procedure: dbo.courseTopics

Input/Output

	Name	Data type	Description
→@	id	int	

Script

```
CREATE proc [dbo].[courseTopics] @id int
as
select *
from topics t, Courses c
where t.CrsID = c.CrsID and t.CrsID = @id
```

2.5. Procedure: dbo.DeleteCourse

Input/Output

	Name	Data type	Description
→@	crsID	int	

Script

```
create proc DeleteCourse @crsID int
as
          begin
                    delete from Courses
                    where CrsID=@crsID
          end
```

2.6. Procedure: dbo.DeleteDepartment

Input/Output

	Name	Data type	Description
→@	ID	int	

Script

```
create proc DeleteDepartment @ID int
as
          begin
                    delete from Department
                    where DeptID=@ID
          end
```

2.7. Procedure: dbo.DeleteExam

Input/Output

	Name	Data type	Description
→@	id	int	

Script

```
create proc DeleteExam @id int
as
		begin
			delete from Exam
			where ExamID = @id
		end
```

2.8. Procedure: dbo.DeleteExamQuestions

Input/Output

	Name	Data type	Description
→@	id	int	
→@	Qid	int	

Script

```
create proc DeleteExamQuestions @id int, @Qid int
as
          begin
                    delete from ExamQuestions
                    where ExamID = @id and QID = @Qid
          end
```

2.9. Procedure: dbo.DeleteInstructor

Input/Output

	Name	Data type	Description
→@	ID	int	

Script

```
create proc DeleteInstructor @ID int
as
          begin
                    delete from HumanResources.Instructor
                    where InsID = @ID
          end
```

2.10. Procedure: dbo.DeletePerson

Input/Output

	Name	Data type	Description
→@	id	int	

Script

```
create proc DeletePerson @id int
as
	begin
		delete from Person
		where ID = @id
	end
```

2.11. Procedure: dbo.DeleteStudent

Input/Output

	Name	Data type	Description
→@	ID	int	

Script

```
create proc DeleteStudent @ID int
as
          begin
                    delete from Student
                    where StID = @ID
          end
```

2.12. Procedure: dbo.DeleteTopic

Input/Output

	Name	Data type	Description
→@	ID	int	

Script

```
create proc DeleteTopic @ID int
as
          begin
                    delete from Topics
                    where TopicID = @ID
          end
```

2.13. Procedure: dbo.DepartmentStudentReport

Input/Output

	Name	Data type	Description
→@	deptId	int	

Script

```
CREATE proc [dbo].[DepartmentStudentReport] @deptId int
as
select *
from Person p , Department d
where d.DeptID = @deptId and p.DeptID = @deptId and UserRole = 'Student'
```

2.14. Procedure: dbo.ExamAnsProc

Input/Output

	Name	Data type	Description
→@	stID	int	
→@	ExamID	int	
→@	a1	int	
→@	a2	int	
→@	a3	int	
→@	a4	int	
→@	a5	int	
→@	a6	int	
→@	a7	int	
→@	a8	int	
→@	a9	int	
→@	a10	int	

Script

```
CREATE proc [dbo].[ExamAnsProc] @stID int, @ExamID int, @a1 int, @a2 int, @a3 int, @a4 int,@a5 int,@a6 int,@a7 int,@a8
int,@a9 int, @a10 int
AS
Declare @table table (ExamID int, QID int, StID int, RN int)
insert into @table
select * , Row_Number() over (partition by ExamID , StID order by QID) as RN from ExamQuestions

insert into StudentExamAns(StID,ExamID,QID,RN) select @stID, @ExamID, QID , RN from @table where ExamID=@ExamID

UPDATE StudentExamAns SET StudentChoiceID = @a1 WHERE RN = 1 AND ExamID = @ExamID AND StID = @stID;

UPDATE StudentExamAns SET StudentChoiceID = @a2 WHERE RN = 2 AND ExamID = @ExamID AND StID = @stID;

UPDATE StudentExamAns SET StudentChoiceID = @a3 WHERE RN = 3 AND ExamID = @ExamID AND StID = @stID;

UPDATE StudentExamAns SET StudentChoiceID = @a4 WHERE RN = 4 AND ExamID = @ExamID AND StID = @stID;

UPDATE StudentExamAns SET StudentChoiceID = @a5 WHERE RN = 5 AND ExamID = @ExamID AND StID = @stID;

UPDATE StudentExamAns SET StudentChoiceID = @a6 WHERE RN = 6 AND ExamID = @ExamID AND StID = @stID;

UPDATE StudentExamAns SET StudentChoiceID = @a7 WHERE RN = 7 AND ExamID = @ExamID AND StID = @stID;

UPDATE StudentExamAns SET StudentChoiceID = @a8 WHERE RN = 8 AND ExamID = @ExamID AND StID = @stID;

UPDATE StudentExamAns SET StudentChoiceID = @a9 WHERE RN = 9 AND ExamID = @ExamID AND StID = @stID;

UPDATE StudentExamAns SET StudentChoiceID = @a10 WHERE RN = 10 AND ExamID = @ExamID AND StID = @stID;
```

2.15. Procedure: dbo.ExamCorrection

Input/Output

	Name	Data type	Description
→@	stID	int	
→@	ExamID	int	

Script

```
CREATE proc [dbo].[ExamCorrection]  @stID int, @ExamID int
AS
declare @counter int
set @counter = 1
while @counter <=10
           begin
                      declare @stChoice int
                      declare @Model int
                      select @stChoice = StudentChoiceID from StudentExamAns
                      where RN = @counter and ExamID = @ExamID and StID = @stID
                      select @Model=q.ModelAns from Questions q inner join StudentExamAns s
                      on q.QID = s.QID
                      if @stChoice = @Model
                                 begin
                                            update StudentExamAns set IsCorrect = 1
                                            where RN = @counter and ExamID = @ExamID and StID = @stID
                                 end
                      else
                                 begin
                                            update StudentExamAns set IsCorrect = 0
                                            where RN = @counter and ExamID = @ExamID and StID = @stID
                                 end
                      set @counter +=1
           end

declare @Sum int
select @Sum=sum(q.Weight) from Questions q inner join StudentExamAns s
on q.QID = s.QID
where s.isCorrect = 1 and ExamID = @ExamID and StID = @stID
declare @CrsID int
select @CrsID = CrsID from Exam where ExamID = @ExamID
declare @grade float
set @grade = (@Sum/19)*100
insert into StudentCourse(StID,CrsID,Grade) values (@StID, @CrsID,@grade)
```

2.16. Procedure: dbo.ExamInsert

Input/Output

	Name	Data type	Description
→@	StratTime	datetime	
→@	EndTime	datetime	
→@	Instructions	varchar(255)	
→@	CrsID	int	

Script

```
create proc ExamInsert @StratTime datetime, @EndTime datetime, @Instructions varchar(255), @CrsID int
as
begin
          insert into Exam(StartTime, EndTime, Instructions, CrsID)
          values(@StratTime, @EndTime, @Instructions, @CrsID)
end
```

2.17. Procedure: dbo.ExamQuestionsChoices

Input/Output

	Name	Data type	Description
→@	examNum	int	

Script

```
CREATE proc ExamQuestionsChoices @examNum int
as
select q.QText, ch.Value from ExamQuestions eq
inner join Questions q
on eq.QID = q.QID
inner join QuestionChoices qc
on qc.QID = eq.QID
inner join Choices ch
on ch.ChoiceID = qc.ChoiceID
where eq.ExamID = @examNum
```

2.18. Procedure: dbo.examQuestionWithAnswers

Input/Output

	Name	Data type	Description
→@	eId	int	
→@	stdId	int	

Script

```
CREATE proc [dbo].[examQuestionWithAnswers] @eId int, @stdId int
as
select Fname +' '+ Lname as [Full Name], q.QText, c.Value as [Student Answer], ch.Value as [Model Answer]  from
StudentExamAns sea
inner join Questions q
on sea.QID = q.QID
inner join Choices ch
on ch.ChoiceID = q.ModelAns
left outer join Choices c
on c.ChoiceID = sea.StudentChoiceID
inner join Student s
on s.StID = sea.StID
inner join Person p
on p.ID=s.PersonID
where sea.ExamID = @eId and sea.StID = @stdId
```

2.19. Procedure: dbo.GenerateExam

Input/Output

	Name	Data type	Description
→@	CrsID	int	
→@	Stid	int	
→@	EID	int	

Script

```
CREATE proc [dbo].[GenerateExam] @CrsID int, @Stid int, @EID int
as
            --TF Questions
            declare @TFQuestions table (QID int)
            insert into @TFQuestions select top(1) QID from Questions
            where  Complexity = 'easy' and Type = 'TF' and CrsID = @CrsID
            order by NEWID()
            insert into @TFQuestions select top(1) QID from Questions
            where  Complexity = 'medium' and Type = 'TF'  and CrsID = @CrsID
            order by NEWID()
            insert into @TFQuestions select top(1) QID from Questions
            where  Complexity = 'hard' and Type = 'TF'  and CrsID = @CrsID
            order by NEWID()

            --MCQ
            declare @MCQQuestions table (QID int)
            insert into @MCQQuestions select top(3) QID from Questions
            where  Complexity = 'easy' and Type = 'MCQ'  and CrsID = @CrsID
            order by NEWID()
            insert into @MCQQuestions select top(2) QID from Questions
            where  Complexity = 'medium' and Type = 'MCQ'  and CrsID = @CrsID
            order by NEWID()
            insert into @MCQQuestions select top(2) QID from Questions
            where  Complexity = 'hard' and Type = 'MCQ'  and CrsID = @CrsID
            order by NEWID()

            -- insert into ExamQuestions
            insert into ExamQuestions select @EID , QID , @Stid
            from @MCQQuestions
            insert into ExamQuestions select @EID , QID , @Stid
            from @TFQuestions
            select QID
            from @MCQQuestions
            union
            select QID
            from @TFQuestions
            order by QID
```

2.20. Procedure: dbo.InsertCourse

Input/Output

	Name	Data type	Description
→@	crsName	varchar(50)	
→@	insid	int	
→@	deptid	int	

Script

```
create proc InsertCourse @crsName varchar(50), @insid int, @deptid int
as
          begin
                    insert into Courses (CrsName, InsID, DeptID)
                    values(@crsName,@insid,@deptid)
          end
```

2.21. Procedure: dbo.InsertDepartment

Input/Output

	Name	Data type	Description
→@	Dname	varchar(50)	
→@	Desc	varchar(255)	
→@	mgrid	int	

Script

```
create proc InsertDepartment @Dname varchar(50), @Desc varchar(255)='Not defined', @mgrid int
as
          begin
                    insert into Department (Dept_Name,DeptDesc, MgrID)
                    values(@Dname, @Desc,@mgrid)
          end
```

2.22. Procedure: dbo.InsertExamQuestions

Input/Output

	Name	Data type	Description
→@	Examid	int	
→@	Qid	int	

Script

```
create proc InsertExamQuestions @Examid int, @Qid int
as
          begin
                    insert into ExamQuestions(ExamID, QID)
                    values(@Examid, @Qid)
          end
```

2.23. Procedure: dbo.InsertInstructor

Input/Output

	Name	Data type	Description
→@	Salary	real	
→@	Position	varchar(50)	
→@	IsAdmin	bit	
→@	PersonId	int	

Script

```
create proc InsertInstructor @Salary real , @Position varchar(50) , @IsAdmin bit , @PersonId int
as
          begin
                    insert into HumanResources.Instructor(salary,Position,IsAdmin,PersonID)
                    values(@Salary , @Position , @IsAdmin , @PersonId)
          end
```

2.24. Procedure: dbo.InsertPerson

Input/Output

	Name	Data type	Description
→@	address	varchar(50)	
→@	phone	varchar(13)	
→@	fname	varchar(50)	
→@	lname	varchar(50)	
→@	password	varchar(50)	
→@	userRole	varchar(50)	
→@	email	varchar(50)	
→@	username	varchar(50)	
→@	deptId	int	

Script

```
create proc InsertPerson @address varchar(50), @phone varchar(13), @fname varchar(50), @lname varchar(50), @password
varchar(50), @userRole varchar(50), @email varchar(50), @username varchar(50), @deptId int
as
          begin
                    insert into Person(Address, Phone, Fname, Lname, Password, UserRole, Email, Username, DeptID)
                    values(@address, @phone, @fname, @lname, @password, @userRole, @email, @username, @deptId)
          end
```

2.25. Procedure: dbo.InsertTopic

Input/Output

	Name	Data type	Description
→@	TopName	varchar(50)	
→@	CrsId	int	

Script

```
create proc InsertTopic @TopName varchar(50), @CrsId int
as
          begin
                    insert into Topics(TopicName,CrsID)
                    values(@TopName, @CrsId)
          end
```

2.26. Procedure: dbo.instructorCourseStudentReport

Input/Output

	Name	Data type	Description
→@	insId	int	

Script

```
CREATE proc instructorCourseStudentReport @insId int
as
select p.Fname+ ' ' + p.Lname as [Instructor Name], c.CrsName, COUNT(sc.StID) as 'Student Number' from Instructor i
inner join Courses c
on i.InsID = c.InsID
inner join Person p
on i.PersonID = p.ID
left join StudentCourse sc
on sc.CrsID =c.CrsID
where i.InsID = @insId
group by c.CrsName, p.Fname+ ' ' + p.Lname
```

2.27. Procedure: dbo.QuestionChoicesInsert

Input/Output

	Name	Data type	Description
→@	QID	int	
→@	ChoiceID	int	

Script

```
create proc QuestionChoicesInsert(@QID int, @ChoiceID int)
as
          begin
                    insert into QuestionChoices(QID, ChoiceID)
                    values(@QID, @ChoiceID)
          end
```

2.28. Procedure: dbo.QuestionChoicesSelect

Input/Output

	Name	Data type	Description
→@	qid	int	

Script

```
create proc QuestionChoicesSelect(@qid int )
as
          begin
                    select * from QuestionChoices
                    where QID = @qid
          end
```

2.29. Procedure: dbo.QuestionsAnswerDelete

Input/Output

	Name	Data type	Description
→@	QID	int	
→@	ChoiceID	int	

Script

```
create proc QuestionsAnswerDelete(@QID int, @ChoiceID int)
as
          begin
                    delete from QuestionChoices
                    where QID = @QID and ChoiceID = @ChoiceID
          end
```

2.30. Procedure: dbo.QuestionsDelete

Input/Output

	Name	Data type	Description
→@	qid	int	

Script

```
create proc QuestionsDelete(@qid int)
as
          begin
                    delete from Questions
                    where QID = @qid
          end
```

2.31. Procedure: dbo.QuestionsInsert

Input/Output

	Name	Data type	Description
→@	Complexity	varchar(6)	
→@	Type	varchar(5)	
→@	QText	varchar(255)	
→@	CrsID	int	
→@	ModelAns	int	

Script

```
create proc QuestionsInsert(@Complexity varchar(6), @Type varchar(5),@QText VARCHAR(255),@CrsID int ,@ModelAns int)
as
          begin
                    insert into Questions(Complexity, Type ,QText,CrsID ,ModelAns)
                    values(@Complexity, @Type,@QText,@CrsID,@ModelAns)
          end
```

2.32. Procedure: dbo.QuestionsSelect

Input/Output

	Name	Data type	Description
→@	qid	int	

Script

```
create proc QuestionsSelect(@qid int )
as
          begin
                    select * from Questions
                    where QID = @qid
          end
```

2.33. Procedure: dbo.SelectCourse

Input/Output

	Name	Data type	Description
→@	crsID	int	

Script

```
create proc SelectCourse  @crsID int
as
          begin
                    select *
                    from Courses
                    where CrsID = @crsID
          end
```

2.34. Procedure: dbo.SelectDepartment

Input/Output

	Name	Data type	Description
→@	ID	int	

Script

```
create proc SelectDepartment @ID int
as
          begin
                    select *
                    from Department
                    where DeptID=@ID
          end
```

2.35. Procedure: dbo.SelectExam

Input/Output

	Name	Data type	Description
→@	id	int	

Script

```
create proc SelectExam @id int
as
	begin
		select * from Exam
		where ExamID = @id
	end
```

2.36. Procedure: dbo.SelectExamQuestion

Input/Output

	Name	Data type	Description
→@	Examid	int	
→@	Qid	int	

Script

```
create proc SelectExamQuestion @Examid int, @Qid int
as
		begin
			select * from ExamQuestions
			where ExamID = @Examid and QID = @Qid
		end
```

2.37. Procedure: dbo.SelectInstructor

Input/Output

	Name	Data type	Description
→@	ID	int	

Script

```
create proc SelectInstructor @ID int
as
          begin
                    select *
                    from Instructor i , Person p
                    where i.InsID = @ID and p.ID=i.PersonID
          end
```

2.38. Procedure: dbo.SelectPerson

Input/Output

	Name	Data type	Description
→@	id	int	

Script

```
create proc SelectPerson @id int
as
	begin
		select * from Person
		where ID = @id
	end
```

2.39. Procedure: dbo.SelectStudent

Input/Output

	Name	Data type	Description
→@	ID	int	

Script

```
CREATE proc SelectStudent @ID int
as
          begin
                    select *
                    from Student s , Person p
                    where s.StID = @ID and p.ID=s.PersonID
          end
```

2.40. Procedure: dbo.SelectTopic

Input/Output

	Name	Data type	Description
→@	ID	int	

Script

```
create proc SelectTopic @ID int
as
          begin
                    select *
                    from Topics
                    where TopicID = @ID
          end
```

2.41. Procedure: dbo.StudentCourseDelete

Input/Output

	Name	Data type	Description
→@	stid	int	
→@	cid	int	

Script

```
create proc StudentCourseDelete(@stid int , @cid int )
as
          begin
                    delete from StudeStudentCourse
                    where StID = @stid and CrsID= @cid
          end
```

2.42. Procedure: dbo.StudentCourseInsert

Input/Output

	Name	Data type	Description
→@	stid	int	
→@	cid	int	
→@	grade	real	

Script

```
create proc StudentCourseInsert(@stid int , @cid int , @grade float(2))
as
          begin
                    insert into StudeStudentCourse(StID,CrsID,Grade)
                    values(@stid, @cid, @grade)
          end
```

2.43. Procedure: dbo.StudentCourseSelect

Input/Output

	Name	Data type	Description
→@	stid	int	
→@	cid	int	

Script

```
create proc StudentCourseSelect(@stid int , @cid int )
as
          begin
                    select * from StudeStudentCourse
                    where StID = @stid and CrsID= @cid
          end
```

2.44. Procedure: dbo.StudentExamAnsDelete

Input/Output

	Name	Data type	Description
→@	StID	int	
→@	ExamID	int	
→@	QID	int	

Script

```
create proc StudentExamAnsDelete(@StID int, @ExamID int, @QID int)
as
          begin
                    delete from StudentExamAns
                    where QID = @QID and StID = @StID and ExamID = @ExamID
          end
```

2.45. Procedure: dbo.StudentExamAnsInsert

Input/Output

	Name	Data type	Description
→@	StID	int	
→@	ExamID	int	
→@	QID	int	
→@	StudentChoiceID	int	
→@	IsCorrect	int	

Script

```
create proc StudentExamAnsInsert(@StID int, @ExamID int, @QID int , @StudentChoiceID int, @IsCorrect int)
as
          begin
                    insert into StudentExamAns(StID, ExamID,QID,StudentChoiceID,IsCorrect)
                    values(@StID , @ExamID , @QID  , @StudentChoiceID , @IsCorrect)
          end
```

2.46. Procedure: dbo.StudentExamAnsSelect

Input/Output

	Name	Data type	Description
→@	StID	int	
→@	ExamID	int	

Script

```
create proc StudentExamAnsSelect(@StID int, @ExamID int )
as
          begin
                    select * from StudentExamAns
                    where StID = @StID and ExamID = @ExamID
          end
```

2.47. Procedure: dbo.studentGrades

Input/Output

	Name	Data type	Description
→@	stId	int	

Script

```
CREATE proc [dbo].[studentGrades] @stId int
as
select (p.Fname+' '+p.Lname) as 'Student Name', c.CrsName, round((sc.Grade/19)*100,2) as [Total Grade (%)]
from Student s inner join StudentCourse sc
on s.StID = sc.StID
inner join Courses c
on c.CrsID = sc.CrsID
inner join Person p
on p.ID = s.PersonID
where s.StID = @stId
```

2.48. Procedure: dbo.updateCourse

Input/Output

	Name	Data type	Description
→@	crsid	int	
→@	crsName	varchar(50)	
→@	insid	int	
→@	deptid	int	

Script

```
create proc updateCourse @crsid int, @crsName varchar(50), @insid int, @deptid int
as
            begin
                        update Courses
                        set CrsName = @crsName, InsID = @insid, DeptID = @deptid
                        where CrsID=@crsid
            end
```

2.49. Procedure: dbo.updateDepartment

Input/Output

	Name	Data type	Description
→@	deptid	int	
→@	deptname	varchar(50)	
→@	deptdesc	varchar(255)	
→@	mgrid	int	

Script

```
create proc updateDepartment @deptid int, @deptname varchar(50), @deptdesc varchar(255),@mgrid int
as
            begin
                        update Department
                        set Dept_Name = @deptname, DeptDesc = @deptdesc, MgrID = @mgrid
                        where DeptID=@deptid
            end
```

2.50. Procedure: dbo.UpdateExamQuestions

Input/Output

	Name	Data type	Description
→@	Examid	int	
→@	Qid	int	

Script

```
create proc UpdateExamQuestions @Examid int, @Qid int
as
          begin
                    update ExamQuestions
                    set ExamID = @Examid, QID = @Qid
          end
```

2.51. Procedure: dbo.updatePerson

Input/Output

	Name	Data type	Description
→@	id	int	
→@	address	varchar(50)	
→@	phone	varchar(13)	
→@	fname	varchar(50)	
→@	lname	varchar(50)	
→@	password	varchar(50)	
→@	userRole	varchar(50)	
→@	email	varchar(50)	
→@	username	varchar(50)	
→@	deptId	int	

Script

```
create proc updatePerson @id int, @address varchar(50), @phone varchar(13), @fname varchar(50), @lname varchar(50), @password
varchar(50), @userRole varchar(50), @email varchar(50), @username varchar(50), @deptId int
as
          begin
                    update Person
                    set Address = @address, Phone = @phone, Fname = @fname, Lname = @lname, Password = @password, UserRole
= @userRole, Email = @email, Username = @username, DeptID = @deptId
                    where ID=@id
          end
```

2.52. Procedure: dbo.UpdateStudent

Input/Output

	Name	Data type	Description
→@	Stid	int	
→@	fin	real	

Script

```
create proc UpdateStudent @Stid int, @fin real
as
          begin
                    update Student
                    set FinalEvaluation=@fin
                    where @Stid=StID
          end
```