Information Technology Institute

Branch Minia

Examination System SQL Server

Examination System SQL Server

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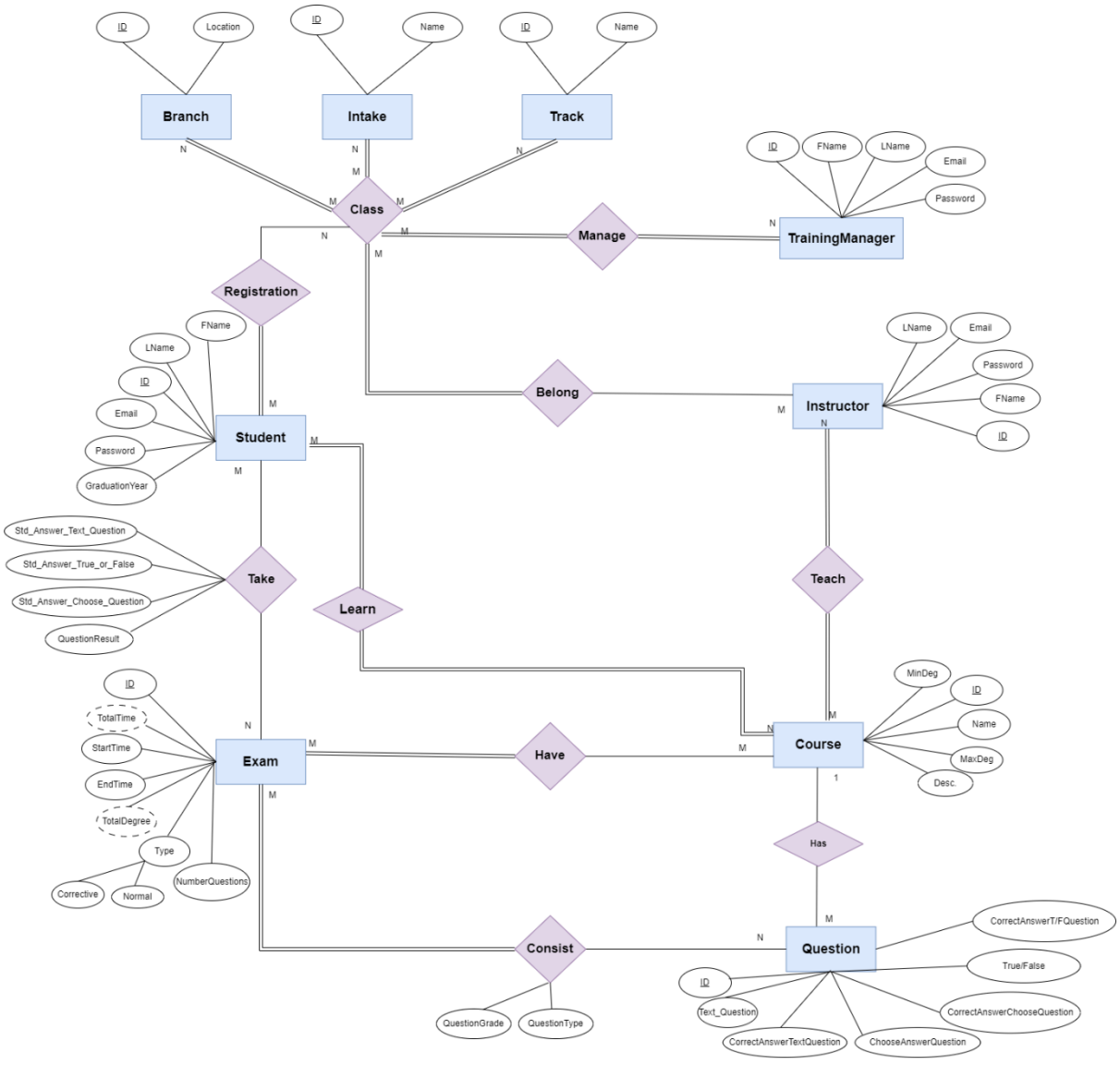
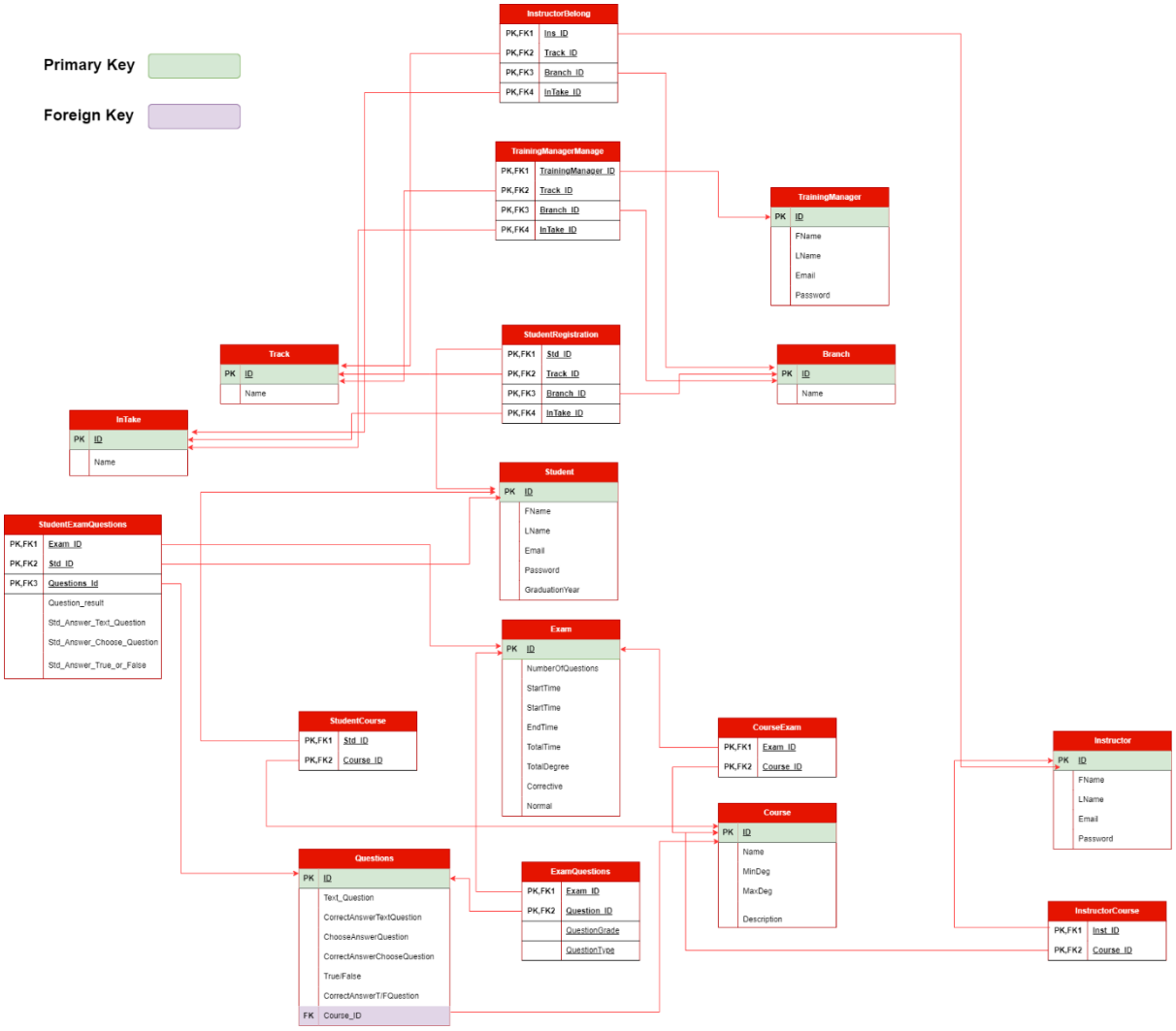
1.Project Abstract

The Examination System Database is a comprehensive solution designed to streamline the management of academic assessments within an educational institution. This system encompasses various features, including a dynamic question pool, support for diverse question types, and meticulous result tracking.Key functionalities include the ability for instructors to construct exams by selecting questions from the pool, each with designated degrees to ensure adherence to course requirements. The system accommodates Multiple Choice, True & False, and Text Questions, employing advanced text functions and regular expressions for evaluation.Administrators, identified as Training Managers, can manage branches, tracks, and intakes, adding students with personalized details. A secure login system is implemented for Training Managers, Instructors, and Students, ensuring controlled access.Instructors can tailor exams for their courses, defining details such as type, intake, branch, track, start and end times, and allowance options. The system maintains a comprehensive record of exams, including those associated with specific years, courses, and instructors.Furthermore, the system facilitates the selection of eligible students for each exam, with defined dates and timeframes for completion. Student responses are diligently recorded, allowing for the calculation of correct answers and final results in the respective courses.To ensure the robustness of the system, thorough testing with inserted test data in all tables is recommended. The Examination System Database stands as an efficient and organized tool for managing the complexities of academic assessments in an educational setting. Using only tools: SQL Server.

2.ERD


Branch
ID
Location
Intake
ID
Name
Track
ID
Name
Class
Manage
TrainingManager
ID
FName
LName
Email
Password
Registration
Student
FName
LName
ID
Email
Password
GraduationYear
Belong
Instructor
LName
Email
Password
FName
ID
Take
Std_Answer_Text_Question
Std_Answer_True_or_False
Std_Answer_Choose_Question
QuestionResult
Learn
Teach
Exam
ID
TotalTime
StartTime
EndTime
TotalDegree
Type
Corrective
Normal
NumberQuestions
Have
Course
MinDeg
ID
Name
MaxDeg
Desc.
Has
Consist
Question
CorrectAnswerT/FQuestion
True/False
ID
Text_Question
CorrectAnswerChooseQuestion
CorrectAnswerTextQuestion
ChooseAnswerQuestion
QuestionGrade
QuestionType

3.Mapping


Primary Key
Foreign Key
InstructorBelong
PK,FK1 Ins_ID
PK,FK2 Track_ID
PK,FK3 Branch_ID
PK,FK4 InTake_ID
TrainingManagerManage
PK,FK1 TrainingManager_ID
PK,FK2 Track_ID
PK,FK3 Branch_ID
PK,FK4 InTake_ID
TrainingManager
PK ID
FName
LName
Email
Password
StudentRegistration
PK,FK1 Std_ID
PK,FK2 Track_ID
PK,FK3 Branch_ID
PK,FK4 InTake_ID
Track
PK ID
Name
Branch
PK ID
Name
InTake
PK ID
Name
Student
PK ID
FName
LName
Email
Password
GraduationYear
StudentExamQuestions
PK,FK1 Exam_ID
PK,FK2 Std_ID
PK,FK3 Questions_Id
Question_result
Std_Answer_Text_Question
Std_Answer_Choose_Question
Std_Answer_True_or_False
Exam
PK ID
NumberOfQuestions
StartTime
StartTime
EndTime
TotalTime
TotalDegree
Corrective
Normal
StudentCourse
PK,FK1 Std_ID
PK,FK2 Course_ID
CourseExam
PK,FK1 Exam_ID
PK,FK2 Course_ID
Instructor
PK ID
FName
LName
Email
Password
Course
PK ID
Name
MinDeg
MaxDeg
Description
Questions
PK ID
Text_Question
CorrectAnswerTextQuestion
ChooseAnswerQuestion
CorrectAnswerChooseQuestion
True/False
CorrectAnswerT/FQuestion
FK Course_ID
ExamQuestions
PK,FK1 Exam_ID
PK,FK2 Question_ID
QuestionGrade
QuestionType
InstructorCourse
PK,FK1 Inst_ID
PK,FK2 Course_ID

Mapping

PK=Red

FK=Blue

Branch

ID	Name

Intake

ID	Name

Track

ID	Name

Student

ID	FName	LName	Email	Password	GraduationYear

Instructor

ID	FName	LName	Email	Password

TrainingManager

ID	FName	LName	Email	Password

Course

ID	Name	MinDegree	MaxDegree	Description

Exam

ID
Name
StartTime
EndTime
TotalTime
TotalDegree
Normal
Corrective
NumberQuestions

Question

ID
Text_Question
CorrectAnswerTextQuestion
ChooseAnswerQuestion
CorrectAnswerChooseQuestion
True/False
CorrectAnswerT/FQuestion
Course_ID

StudentCourse(Composite Primary Key)

ID	Course_ID

StudentRegistration (Composite Primary Key)

Student_ID	Branch_ID	Track_ID	Intake_ID

TrainingManagerManage (Composite Primary Key)

TrainingManager_ID	Branch_ID	Track_ID	Intake_ID

InstructorBelong (Composite Primary Key)

Instructor_ID	Branch_ID	Track_ID	Intake_ID

InstructorCourse (Composite Primary Key)

Instructor_ID	Course_ID

CourseExam (Composite Primary Key)

Exam_ID	Course_ID

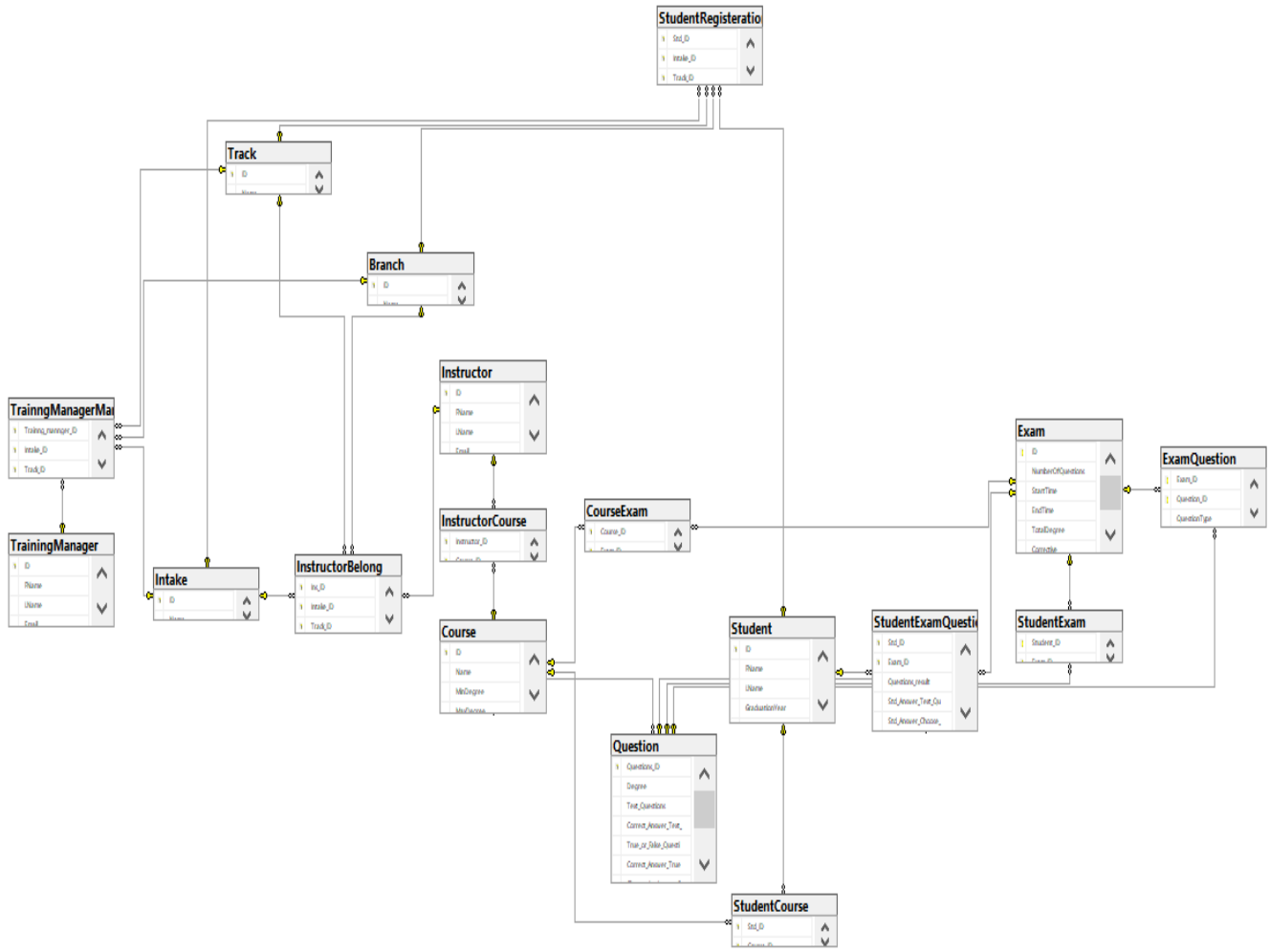
ExamQuestions (Composite Primary Key)

Exam_ID	Question_ID	QuestionGrade	QuestionType

StudentExamQuestion (Composite Primary Key)

Student_ID
Exam_ID
Question_ID
Questions_result
Std_Answer_Text_Question
Std_Answer_Choose_Question
Std_Answer_True_or_False

4.Digram


StudentRegisteratio
Std_ID
Intake_ID
Track_ID
Track
ID
Branch
ID
Instructor
ID
Name
UName
Email
TrainngManagerMa
Training_manager_ID
Intake_ID
Track_ID
TrainingManager
ID
Name
UName
Email
Intake
ID
InstructorBelong
Ins_ID
Intake_ID
Track_ID
InstructorCourse
Instructor_ID
Course_ID
CourseExam
Course_ID
Exam
ID
NumberOfQuestions
StartTime
EndTime
TotalDegree
CorrectAns
ExamQuestion
Exam_ID
Question_ID
QuestionType
Course
ID
Name
MinDegree
MaxDegree
Student
ID
FName
LName
GraduationYear
StudentExamQuesti
Std_ID
Exam_ID
Questions_result
Std_Answer_Text_Qu
Std_Answer_Choose_
StudentExam
Student_ID
Exam_ID
Question
Questions_ID
Degree
Text_Questions
Correct_Answer_Text_
True_or_False_Questi
Correct_Answer_True
StudentCourse
Std_ID
Course_ID

5.Table

- *[dbo].[Branch]*
- *[dbo].[Course]*
- *[dbo].[CourseExam]*
- *[dbo].[Exam]*
- *[dbo].[ExamQuestion]*
- *[dbo].[Instructor]*
- *[dbo].[InstructorBelong]*
- *[dbo].[InstructorCourse]*
- *[dbo].[Intake]*
- *[dbo].[Question]*
- *[dbo].[Student]*
- *[dbo].[StudentCourse]*
- *[dbo].[StudentExam]*
- *[dbo].[StudentExamQuestions]*
- *[dbo].[StudentRegisteration]*
- *[dbo].[Track]*
- *[dbo].[TrainingManager]*
- *[dbo].[TrainngManagerManage]*

6.Stored Procedure

6.1 Training Manager Table

6.1.1 Branch

- AddOrUpdateOrDeleteBranch

6.1.2 Intake

- AddOrUpdateOrDeleteIntake

6.1.3 Track

- AddOrUpdateOrDeleteTrack

6.1.4 Instructor

- AddOrUpdateOrDeleteInstructor

6.1.5 Course

- AddOrUpdateOrDeleteCourse

6.1.6 Question

- AddOrUpdateOrDeleteQuestion

6.1.7 Student

- AddOrUpdateOrDeleteStudent

6.1.8 Retrieve Info For Training Manager

- Retrieve_Info_TrainingManager

6.2 Instructor Table

6.2.1 Assign Exam

- Instructor Assign Exam To Students

6.2.2 Create Exam Manually

- Instructor Create Exam Manually

6.2.3 Create Exam Random

- Instructor Create Exam Random Questions

6.2.4 Edite Grade of Question, Delete Question, Delete Exam

- Instructor Other Exam Procs

6.2.5 Add Or Update Or Delete Instructor Course

- Proc_Instractor_Course

6.2.6 Add Or Update Or Delete Instructor Belong

- Proc_Instructor_Belong

6.2.7 Retrieve Info For Instructor

- Retrive Instractor Info

6.3 Student Table

6.3.1 Add Or Update Or Delete Student Registration

- Proc_Student_Regis

6.3.2 Show Student Course Exam And Take In Specific Time

- Student Take Exam

6.3.3 Retrieve Info For Student

- Retrive_Info_For_Student

6.4 Exam Table

6.4.1 Get Info Or Update Or Delete Exam

- UpdateOrGetOrDelete

6.4.2 Correct Exam For Student

- CorrectExamForStudent

6.4.3 Get Total Degree For Student Exam

- GetTotalDegreeForStudentExam

6.4.4 Retrieve Info For Student

- RetrievSomeInfoForExam

7.Index

7.1 Course Table

- IndexInCourseTable

7.2 Instructor Table

- IndexInInstructorTable

7.3 Question Table

- IndexInQuestionTable

7.4 Student Table

- IndexInStudentTable

7.5 Student Course Table

- IndexInStudentCourseTable

7.6 Student Exam Question Table

- IndexInStudentExamQuestionsTable

7.7 Exam Question Table

- IndexInExamQuestionsTable

8.Trigger

8.1 Prevent Drop Any Table From System

- PreventDropTables

8.2 Prevent Updates Student ID Related Exist In StudentCousre Table

- PreventUpdatesStudent ID

9.View

9.1 Training Manager

- Training Manager

9.2 Student

- Student Views

10.Query For Testing

10.1 Training Manager

- Test_Quary_ForTrainningManger

10.2 Instructor

- Test_Quary_ForInstractor

10.3 Student

- Test_Quary_ForStudent

11.User Account

Name	Password
manager	manager
instructor	instructor
student	student
itiadmin	itiadmin

12. Permission

12.1 Training Manager

- [dbo].[AddCourse]
- [dbo].[UpdateCourse]
- [dbo].[DeleteCourse]
- [dbo].[AddInstructor]
- [dbo].[UpdateInstructor]
- [dbo].[DeleteInstructorByID]
- [dbo].[AddQuestion]
- [dbo].[UpdateQuestion]
- [dbo].[DeleteQuestion]
- [dbo].[AddStudent]
- [dbo].[UpdateStudent]
- [dbo].[DeleteStudent]
- [dbo].[AddStudentRegistration]
- [dbo].[UpdateStudentRegistration]
- [dbo].[DeleteStudentRegistration]
- [dbo].[AddInstructorCourse]

- [dbo].[UpdateInstructorCourse]
- [dbo].[DeleteInstructorCourse]
- [dbo].[AddInstructorBelong]
- [dbo].[UpdateInstractorBelong]
- [dbo].[DeleteInstructorBelong]
- [dbo].[GetAllExams]
- [dbo].[GetExamsByDateRange]
- [dbo].[GetExamsWithCourseInfo]
- [dbo].[ManagerTrackBranchIntake_proc]
- [dbo].[show_BranchTrack_proc]
- [dbo].[show_BranchIntake_proc]
- [dbo].[AddTracks]
- [dbo].[UpdateTrackNames]
- [dbo].[DeleteTrack]
- [dbo].[AddIntake]
- [dbo].[UpdateIntakeNames]
- [dbo].[DeleteIntake]
- [dbo].[AddOneOrMoreBranche]
- [dbo].[UpdateBranchNames]
- [dbo].[DeleteBranch]
- [dbo].[ExamResultsView]
- [dbo].[track_branch_intack_view]
- [dbo].[show_instrucrors_courseS_view]
- [dbo].[show_TrainingManagerInfo_view]
- [dbo].[show_StudentAnswerQuestion_view]
- [dbo].[show_Student_view]
- [dbo].[show_Istructor_view]
- [dbo].[show_Cources_view]
- [dbo].[show_Exam_view]
- [dbo].[show_Question_view]
- [dbo].[show_StudentExamQuestions_view]
- [dbo].[show_TrainingManager_view]
- [dbo].[show_Track_view]
- [dbo].[show_Branch_view]

- [dbo].[show_Intake_view]

12.2 Instructor

- [dbo].[GenerateRandomQuestionsCourseExam_Pro]
- [dbo].[ShowExamQuestions_Proc]
- [dbo].[AddGradeToQuestion_Proc]
- [dbo].[SetManualQuestionsCourseExam_Proc]
- [dbo].[ShowQuestionPoolForInstructorCourse]
- [dbo].[AddQuestionToExamManually_Proc]
- [dbo].[EditGradeOfQuestion_Proc]
- [dbo].[DeleteQuestion_Proc]
- [dbo].[AssignExamToStudent]
- [dbo].[DeleteAssignedStudentExam]
- [dbo].[DeleteCourseExam_Proc]
- [dbo].[CorrectExamForStudent]
- [dbo].[GetTotalDegreeForStudentExam]
- [dbo].[UpdateExam]
- [dbo].[DeleteExam]
- [dbo].[instrucrorscourses_PROC]
- [dbo].[GetExamsByCourse]
- [dbo].[GetExamDetailsWithCourseInfo]
- [dbo].[GetDetailedExamInfo]

12.3 Student

- [dbo].[ShowStudentCourseExams_Proc]
- [dbo].[studentcourses_proc]
- [dbo].[GetTotalDegreeForStudentExam]
- [dbo].[TakeAndShowExamOnSpecificTime]
- [dbo].[show_Intake_view]
- [dbo].[show_Branch_view]
- [dbo].[show_Intake_view]
- [dbo].[track_branch_intack_view]

13.Brief description for all object in DB

Stored Procedures:

Stored Procedure	Description
dbo.AddOneOrMoreBranche	Add one or more branch
dbo.UpdateBranchNames	Update the Branch name
dbo.DeleteBranch	Delete specific Branch
dbo.AddTracks	Add one or more Track
dbo.UpdateTrackNames	Update the Track name
dbo.DeleteTrack	Delete specific Track
dbo.AddIntake	Add one or more Intake
dbo.UpdateIntakeNames	update the intake name
dbo.DeleteIntake	Delete specific Intake
dbo.AddCourse	Add Course
dbo.UpdateCourse	Update Course
dbo.DeleteCourse	Delete Course
dbo.AddInstructor	Add new Instructor
dbo.UpdateInstructor	Update Instructor
dbo.DeleteInstructorByID	Delete Instructor
dbo.AddQuestion	Add new question
dbo.UpdateQuestion	Update Question
dbo.DeleteQuestion	Delete Question
dbo.AddStudent	Add new Student
dbo.UpdateStudent	Update Student
dbo.DeleteStudent	Delete specific Student

dbo.ManagerTrackBranchIntake_proc	Show Info by TrainingManger _ID
dbo.show_BranchIntake_proc	Show intake In this Branch
dbo.ShowBranch_IntakesAndTracks_Proc	Show intakes, tracks in this Branch
dbo.ShowBranchStudents_Proc	Show students in specific branch
dbo.ShowBranchInstructors_Proc	Show Instructors in specific branch
dbo.ShowTrackStudents_Proc	Show students in specific track
dbo.ShowTrackInstrucors_Proc	Show instructors in specific track
dbo.ShowStudentsInSpecificBranchIntakeTrack_Proc	Show Students in specific Branch Intake Track
dbo.ShowInstructorsInSpecificBranchIntakeTrack_Proc	Show Instructors in specific Branch Intake Track
dbo.CourseTrackBranchIntake_proC	Show Course Track Branch Intake By Exam ID
dbo.GetExamDetails	Read Procedure to Get Exam Details
dbo.UpdateExam	Update Procedure to Modify Exam Details
dbo.DeleteExam	Delete Procedure to Remove an Exam
dbo.CorrectExamForStudent	Correct Exam For Student
dbo.GetTotalDegreeForStudentExam	Get Total Degree For Student Exam
dbo.GetAllExams	Getting All Exams:

dbo.GetExamsByCourse	Getting Exams for a Specific Course
dbo.GetExamsByDateRange	Getting Exams within a Date Range
dbo.GetExamDetailsWithCourseInfo	Getting Exam Details along with Course Information
dbo.GetExamsWithCourseInfo	Retrieving Exams with Course Information
dbo.AssignExamToStudent	Assign Exam To Student
dbo.DeleteAssignedStudentExam	Delete Assigned Student Exam
dbo.SetManualQuestionsCourseExam_Proc	Instructor select questions for the exam manually
dbo.ShowQuestionPoolForInstructorCourse	Show questions available for that exam (that belongs to a specific course)
dbo.AddQuestionToExamManually_Proc	Add questions to the pre created exam in step 1 from pool displayed in step 2
dbo.GenerateRandomQuestionsCourseExam_Proc	Instructor creates an exam with random questions auto selected from the question pool (related to his course)
dbo.ShowExamQuestions_Proc	Displaying the auto generated exam questions to assign a degree to each of them

dbo.AddGradeToQuestion_Proc	Assign grade for each question of the exam
dbo.EditGradeOfQuestion_Proc	Edit Question Grade
dbo.DeleteQuestion_Proc	Delete question
dbo.DeleteCourseExam_Proc	Delete Exam
dbo.AddInstructorCourse	Add Instructor Course
dbo.UpdateInstructorCourse	Update Instructor Course
dbo.DeleteInstructorCourse	Delete Instructor Course
dbo.AddInstructorBelong	Add Instructor to Branch Intake Track
dbo.UpdateInstractorBelong	Update Instructor in Branch Intake Track
dbo.DeleteInstructorBelong	Delete Instructor from Branch Intake Track
dbo.instrucrorscourses_PROC	Show Course teach by Instructor ID
dbo.AddStudentRegistration	Add Student in Branch, Intake, Track
dbo.Up dbo.dateStudentRegistration	Update Student in Branch, Intake, Track
dbo.DeleteStudentRegistration	Delete Student from Registration

Views:

Views	Description
dbo.show_Exam_view	Show All Exams
dbo.ExamResultsView	Show Exam Results
dbo.show_Question_view	Show All Question

dbo.track_branch_intack_view	Show track branch intake
dbo.show_Branch_view	Show All Branches
dbo.show_Track_view	Show All Traks
dbo.show_Intake_view	Show All Intakes

Index:

Index	Description
dbo.IX_QuestionGrade	Sort grade of question ASC
dbo.IX_Course_Name	Sort Course Name ASC
dbo.IX_Instructor_Email	Sort all emails ASC
dbo.IX_Instructor_FullName	Sort first names ASC
dbo.IX_Question_CourseId	Sort Course id ASC
dbo.IX_Student_Email	Sort all emails ASC
dbo.IX_Student_FullName	Sort all names ASC
dbo.IX_Student_FullName_Email	Sort all names and emails ASC
dbo.IX_StudentCourse_Std_ID_Course_ID	Sort student id and course id ASC in table Student course
dbo.IX_StudentExamQuestions_Std_ID_Exam_ID	Sort student id and exam id ASC in table Student Exam Question
dbo.IX_Questions_Result	Sort question result ASC

Trigger:

Trigger	Description
dbo.ddlt_PreventDDLDropTable	Trigger To prevent drop any table from system
dbo.Trg_PreventStudentIDUpdate	Trigger to prevent updates to Student ID in Student table if related records exist in Student Course table