**Description for all objects in DB**

***Training Manger:***

**Procedures for training manger:**

1-addBranch\_proc:

proc to add new branch by training manager by using Branch name

2-updateBranch\_proc:

proc to update branch by training manager by Brn\_Id , Brn\_Name

3-addTrack\_proc:

proc to add track by training manager by Track\_Name , Dept\_Id

4-updateTrack\_proc:

proc to update track by training manager using Track\_Name , Dept\_Id

5-addIntake\_proc:

proc to add Intake by training manager by Intake\_Value

6-addStudent\_proc:

proc to add student by training manager

7-addCourse\_proc:

to add new course by training manager to intake

8-updateCourse\_proc:

to update Course by training manager

9-showIntaketoStudent\_proc==>to show intake by training manager to students

10-showBranchtonlyStudent\_proc==>to show branch by training manager to specific student

11-showTracktoOneStudent\_proc==>proc give track and student info by NationalID

12-GetStudentInfo\_proc==>to show student info

13-showTracktoStudent\_proc==>to show track by training manager to students

14-showBranchtoStudent\_proc==>-proc to show Branch for students

**Triggers for training manger:**

\_trgForAddIntake:

Trigger for add new Intake

\_trgForAddstudent:

Trigger for add new student

\_trgForAddBranch:

Trigger for add new branch

\_trgForAddTrack:

Trigger for add new Track

**Views for training manger:**

\_courseInDepartmentInfo\_v:

view Department and track

\_showStudents\_v:

show students and courses they take

\_courseInfo\_v:

show courses

\_showInistractor\_v:

show Instructor with course

\_show Instructor with course

\_showDepartment\_v:

show Departments

**Functions for Question**

* GetOptionsOfSpecificQ
  + For Get All Options Of Specific Question if the type is Multiple Choice .
  + The Function takes Question Id Parameter .
  + Return table of Correct & Wrong Options .

**Stored Procedure For Exam & Courses**

* sp\_GetStudentFinalResultForAllCourses
  + Stored for get the final result of Specific student in all courses he assigned from **GetFinalResult View .**
  + Takes StudentName Parameter .
* sp\_GetStdntResultInSpecificCrs
  + Stored for get the final result of Specific student in specific courses he assigned from **GetFinalResult View .**
  + Takes Parameters (StudentName , CourseName) .
* GetAllowanceOptionsForSpecificExam
  + Stored for get Allowance options of specific Exam from

**AllowanceOptions\_VW View**.

* + Takes Parameters (ExamName) .
* CalculateFinal
  + Calculate Total Degrees of the exam which student examined.
  + Takes Parameters (ExamId , StdNationalId) .
  + Return Total degrees of exam which student examined.

**Views For Exam & Courses**

* GetFinalResult
  + View for display StdName with FinalResult Of the courses they examined.
* ExamDetails
  + Display the ExamNames with the Intake name , Branch name ,

Track name , depertment name , year , Starttime and End Time .

* AllowanceOptions\_VW
  + Display Allowance Options for exams .
* VW\_QuestionsInExam
  + Display all Questions in the exams .

**Triggers For Exam & Courses**

* ExamCorrection
  + Fire when the student answer question in exam and he mark the answer and set IsCorrect if true or false.

**Triggers**

1. **On Course Table**
   * **Purpose**: Ensure that MaxDegree is always greater than MinDegree.
2. **On Instructor\_Course\_Intake Table**
   * **Purpose**: Prevent multiple instructors for the same course, intake, and year.
3. **On Question\_Exam Table**
   * **Purpose**: Ensure the total degrees of questions do not exceed the MaxDegree of the associated exam.
4. **On TrackIntakeExamBranch Table**
   * **Purpose**: Verify that ExamStartTime is earlier than ExamEndTime.
5. **On StdBranchTrackIntake Table**
   * **Purpose**: Validate the integrity of references in the StdBranchTrackIntake table.

**Indexes**

**Instructor Table**

1. **Username Index**
   * **Purpose**: Improves search performance for usernames.
2. **Salary Index**
   * **Purpose**: Enhances query performance when filtering or sorting by salary.

**Student Table**

1. **Username Index**
   * **Purpose**: Optimizes search performance for usernames.
2. **Birth Date Index**
   * **Purpose**: Enhances query performance for birth date filters.

**Course Table**

1. **Course Name Index**
   * **Purpose**: Improves search performance on course names.

**Branch Table**

1. **Branch Name Index**
   * **Purpose**: Enhances search performance for branch names.

**Department Table**

1. **Department Name Index**
   * **Purpose**: Optimizes search performance on department names.

**Track Table**

1. **Track Name Index**
   * **Purpose**: Improves search performance on track names.
2. **Department ID Index**
   * **Purpose**: Enhances query performance for filtering by department ID.

**Exam Table**

1. **Exam Type Index**
   * **Purpose**: Improves query performance for filtering by exam type.
2. **Course Code Index**
   * **Purpose**: Enhances query performance for filtering by course code.
3. **Instructor ID Index**
   * **Purpose**: Optimizes query performance for filtering by instructor ID.

**Instructor\_Course\_Intake Table**

1. **Composite Index**
   * **Purpose**: Optimizes queries involving course, instructor, and intake.

**TrackIntakeExamBranch Table**

1. **Composite Index**
   * **Purpose**: Enhances queries involving intake, track, branch, and exam.

**Question Table**

1. **Question Type Index**
   * **Purpose**: Improves search performance on question types.

**CorrectChoice Table**

1. **Correct Answer Index**
   * **Purpose**: Optimizes queries filtering by correct answers.

**WrongChoice Table**

1. **Wrong Answer Index**
   * **Purpose**: Enhances query performance for filtering by wrong answers.

**TextQuestion Table**

1. **Text Answer Index**
   * **Purpose**: Improves query performance for filtering by text answers.

**Question\_Exam Table**

1. **Relationship Index**
   * **Purpose**: Enhances query performance for question-exam relationships.

**Answer Table**

1. **Question ID Index**
   * **Purpose**: Optimizes queries filtering by question ID.
2. **Student ID Index**
   * **Purpose**: Enhances query performance for filtering by student ID.
3. **Exam ID Index**
   * **Purpose**: Improves query performance for filtering by exam ID.

**StdBranchTrackIntake Table**

1. **Composite Index**
   * **Purpose**: Optimizes queries involving student, intake, branch, and track.

**Role Table**

1. **Role Name Index**
   * **Purpose**: Improves search performance on role names.

**Permission Table**

1. **Permission Name Index**
   * **Purpose**: Optimizes search performance on permission names.

**RolePermissions Table**

1. **Role and Permission IDs Index**
   * **Purpose**: Enhances queries joining or filtering by role and permission IDs.