

# ITI-Examination System DB

## Mapping

- **Departments:**

- DepartmentID (Primary Key, INT, Identity)
- DepartmentName (VARCHAR)
- ManagerID (Foreign Key referencing Instructors)

- **Branches:**

- BranchID (Primary Key, INT, Identity)
- BranchName (VARCHAR)
- BranchLocation(varchar)
- BranchPhone(varchar)
- ManagerID (Foreign Key referencing Instructors)

- **BranchDepartment**

- BranchID (Foreign key, referencing Branch)
- DepartmentID (Foreign key, referencing Department)
- Primary (BranchID, DepartmentID)

- **Tracks:**

- TrackID (Primary Key, INT, Identity)
- TrackName (VARCHAR)
- DepartmentID (Foreign Key, referencing Departments)

- **Instructors:**

- InstructorID (Primary Key, INT, Identity)
- InstructorFname (VARCHAR)
- InstructorLname (VARCHAR)
- InstructorEmail (VARCHAR)
- Password(VARCHAR)
- InstructorPhoneNumber (CHAR)
- Address (VARCHAR)
- HiringDate (DATE)
- DepartmentID (Foreign Key referencing Departments)

- **InstructorsTracks:**

- Inst\_ID (Foreign Key, references Instructors)
- Track\_ID (Foreign Key, references Tracks)
- Primary Key (Inst\_ID, Track\_ID)

- **Students:**

- StudentID (Primary Key, INT, Identity)
- StudentFname (VARCHAR)
- StudentLname (VARCHAR)
- StudentEmail (VARCHAR)
- Password (VARCHAR)
- StudentPhoneNumber (CHAR)
- DepartmentID (Foreign Key, referencing Departments)
- BranchID (Foreign Key, referencing Branches)
- TrackID (Foreign Key, referencing Tracks)

- **Courses:**

- CourseID (Primary Key, INT, Identity)
- CourseName (VARCHAR)
- Description (VARCHAR)
- Hours (INT)

- **CourseTracks:** (Many-to-Many relationship between Courses and Tracks)

- CourseID (Foreign Key referencing Courses)
- TrackID (Foreign Key referencing Tracks)
- Primary (CourseID, TrackID)

- **CourseInstructors:** (Many-to-Many relationship between Courses and Instructors)

- CourseID (Foreign Key referencing Courses)
- InstructorID (Foreign Key referencing Instructors)
- Primary (CourseID, InstructorID)

- **CourseStudents:** (Many-to-Many relationship between Courses and Students)
  - CourseID (Foreign Key referencing Courses)
  - StudentID (Foreign Key referencing Students)
  - Degree (TINYINT)
  - Primary (CourseID, StudentID)
  
- **Topic:**
  - TopicID(int, primary key, identity)
  - TopicName(varchar)
  - CourseID(Foreign key references Course)
  
- **Questions:**
  - QuestionID (Primary Key, INT, Identity)
  - CourseID (Foreign Key referencing Courses)
  - QuestionType (foreign key referenceing QuestionType)
  - QuestionBody (TEXT)
  
- **Question Type:**
  - TypeId (primary key , int , identity)
  - Type (varchar)

- **Choices:** (for Multiple Choice Questions)
  - ChoiceID (int)
  - **QuestoinID (Foreign Key Referencing Questions)**
  - ChoiceText(TEXT)
  - IsCorrect(bool)
  - **Primary (ChoiceID, QuestionID)**
- **Exams:**
  - **ExamID (Primary Key, INT, Identity)**
  - **InstructorID (Foreign Key referencing Instructors)**
  - **ExamType (foreign key, referencing ExamType)**
  - **Courseld (foreign Key, referencing Coures)**
  - **BranchID (Foreign Key, referencing Branches)**
  - **TrackID (Foreign Key, referencing Tracks)**
  - Date (DATETIME)
  - Duration (INT, in minutes)
- **ExamType**
  - **T\_id (Primary Key, int, Identity)**
  - TypeText(varchar)

- **ExamQuestions:** (Many-to-Many relationship between Exams and Questions)
  - ExamID (Foreign Key referencing Exams)
  - QuestionID (Foreign Key referencing Questions)
  - QuestionMark (TINYINT)
  - Primary key (ExamID, QuestionID)
- **StudentAnswers:** (Many-to-Many relationship between Students, Exams, Questions and Answers)
  - StudentID (Foreign Key referencing Students)
  - ExamID (Foreign Key referencing StudentExams)
  - QuestionID (Foreign Key referencing Questions)
  - StudentAnswer (Foreign Key referencing Choices)
  - IsCorrect (BIT, Derived)
  - Primary Key (StudentID, ExamID, QuestionID, StudentAnswer)
- **StudentExams:** (Many-to-Many relationship between Students and Exams)
  - ExamID (Foreign Key referencing Exams)
  - StudentID (Foreign Key referencing Students)
  - Degree (TINYINT, Derived)
  - Status(varchar)
  - Primary (ExamID, StudentID)