Tatiana Ensslin

CSE 581

**Lab 9: Tables**

1. Create the following tables with appropriate data types and constraints:

|  |  |  |
| --- | --- | --- |
| ***Table Name: Users*** |  |  |
| **Column Name** | **Column Type** | **Notes** |
| NTID | text, max length of 20 | Primary Key |
| FirstName | text, max length of 50 | Required |
| MiddleInitial | text, max length of 1 | Optional |
| LastName | text, max length of 50 | Required |
| EmailAddress | text, max length of 100 | Optional |
| Password | text, max length of 50 | Optional |

CREATE TABLE Users

(

NTID varchar(20) NOT NULL PRIMARY KEY,

FirstName varchar(50) NOT NULL,

MiddleName varchar(1),

LastName varchar(50) NOT NULL,

EmailAddress varchar(100),

Password varchar(50)

);

|  |  |  |
| --- | --- | --- |
| ***Table Name: Courses*** |  |  |
| **Column Name** | **Column Type** | **Notes** |
| CourseId | number | Primary Key, auto generated, starts at 1 |
| CourseCode | text, max length of 10 | Required |
| CourseTitle | text, max length of 50 | Required |
| Faculty | text, max length of 20 | Optional, references Users |
| OpenSeats | number | Required |

CREATE TABLE Courses

(

CourseID int IDENTITY(1,1) NOT NULL PRIMARY KEY,

CourseCode varchar(10) NOT NULL,

CourseTitle varchar(50) NOT NULL,

Faculty varchar(20) FOREIGN KEY REFERENCES Users(NTID),

OpenSeats int NOT NULL

);

|  |  |  |
| --- | --- | --- |
| ***Table: LetterGrades*** |  |  |
| **Column Name** | **Column Type** | **Notes** |
| LetterGradeId | number | Primary Key, auto generated, starts at 1 |
| LetterGrade | text, max length of 2 | Required |
| Description | text, max length of 50 | Optional |

CREATE TABLE LetterGrades

(

LetterGradeID int IDENTITY(1,1) NOT NULL PRIMARY KEY,

LetterGrade varchar(2) NOT NULL,

Description varchar(50)

);

|  |  |  |
| --- | --- | --- |
| ***Table Name: CourseGrade*** |  |  |
| **Column Name** | **Column Type** | **Notes** |
| GradingScaleId | number | Primary Key, auto generated, starts at 1 |
| LetterGradeId | number | Required, references LetterGrades |
| CourseId | number | Required, references Courses |
| GradeValue | number | Required, >= 0 |

CREATE TABLE CourseGrade

(

GradingScaleID int IDENTITY(1,1) NOT NULL PRIMARY KEY,

LetterGradeID int NOT NULL FOREIGN KEY REFERENCES LetterGrades(LetterGradeID),

CourseId int NOT NULL FOREIGN KEY REFERENCES Courses(CourseId),

GradeValue int NOT NULL CHECK (GradeValue >=0)

);

|  |  |  |
| --- | --- | --- |
| ***Table Name: CourseEnrollment*** | | |
| **Column Name** | **Column Type** | **Notes** |
| EnrollmentId | number | primary key, auto generated, starts at 1 |
| StudentId | text, max length 20 | Required, references Users |
| CourseId | number | Required, references Courses |
| FinalGrade | number | Optional, >=0.00, <=100.00 |

CREATE TABLE CourseEnrollment

(

EnrollmentID int IDENTITY(1,1) NOT NULL PRIMARY KEY,

StudentID varchar(20) NOT NULL FOREIGN KEY REFERENCES Users(NTID),

CourseId int NOT NULL FOREIGN KEY REFERENCES Courses(CourseId),

FinalGrade decimal(5,2) CHECK (FinalGrade >= 0.00 AND FinalGrade <=100.0)

);

