Project: Grade management

Use the given database schema(at the bottom of the page), create a WinForm application which has the following functions:

1. Manage Courses, Student, Grade.. look at the database scheme for full entities
2. Make use of some validations for user input: check existed courses, check duplicates
3. Export the grade into PDF or Excel file by Class, Intake, Course

Other requirements:

* Use Entity Framework
* Use Repository Pattern
* Have Unit Test/TDD
* Clean code
* Follow coding conventions

BEGIN TRANSACTION;

CREATE TABLE [YearStudy] (

[Year] bigint NULL

, [Semester] text NULL

, [YearStudyID] text NOT NULL

, CONSTRAINT [sqlite\_autoindex\_YearStudy\_1] PRIMARY KEY ([YearStudyID])

);

CREATE TABLE [StudentStudy] (

[StudentStudyID] text NOT NULL

, [StudentID] text NULL

, [LecturerID] text NULL

, [YearStudyID] text NULL

, [CourseID] text NULL

, [GradeNumber] numeric(53,0) NULL

, [GradeCharacter] text NULL

, CONSTRAINT [sqlite\_autoindex\_StudentStudy\_1] PRIMARY KEY ([StudentStudyID])

);

CREATE TABLE [Student] (

[StudentID] text NOT NULL

, [LastName] text NULL

, [FirstName] text NULL

, [DOB] text NULL

, [Email] text NULL

, [Major] text NULL

, [Programe] text NULL

, [Intake] numeric(53,0) NULL

, [Class] text NULL

, CONSTRAINT [sqlite\_autoindex\_Student\_1] PRIMARY KEY ([StudentID])

);

CREATE TABLE [Lecturer] (

[LecturerID] text NOT NULL

, [Name] text NULL

, [Email] text NULL

, CONSTRAINT [sqlite\_autoindex\_Lecturer\_1] PRIMARY KEY ([LecturerID])

);

CREATE TABLE [GradeComponent] (

[StudentStudy] text NOT NULL

, [SubGradeName] text NOT NULL

, [Grade] bigint NOT NULL

, CONSTRAINT [sqlite\_autoindex\_GradeComponent\_1] PRIMARY KEY ([StudentStudy],[SubGradeName])

);

CREATE TABLE [Course] (

[CourseID] text NOT NULL

, [CourseName] text NULL

, [Credit] text NULL

, [FirstDateCreated] text NULL

, CONSTRAINT [sqlite\_autoindex\_Course\_1] PRIMARY KEY ([CourseID])

);

INSERT INTO [Lecturer] ([LecturerID],[Name],[Email]) VALUES (

'binhdq','Do Quoc Binh','binhdq@fpt.edu.vn');

COMMIT;