

Assignment: Student & Course Management (Entity Framework Core)

Objective: - Learn Entity Framework Core Code-First approach. - Implement a simple console-based mini-project to manage Students and Courses. - Practice basic CRUD operations and one-to-many relationship.

Project Description: - Each Student can enroll in multiple Courses. - Courses can belong to one Student. - Implement console-based menu to interact with the system.

Entities and Fields:

1. Student

- StudentId (int, Primary Key)
- FirstName (string)
- LastName (string)
- Courses (List)

```
public class Student
{
    public int StudentId { get; set; }
    public string FirstName { get; set; }
    public string LastName { get; set; }
    public List<Course> Courses { get; set; } = new List<Course>();
}
```

2. Course

- CourseId (int, Primary Key)
- CourseName (string)
- StudentId (int, Foreign Key)
- Student (Student)

```
public class Course
{
    public int CourseId { get; set; }
    public string CourseName { get; set; }
    public int StudentId { get; set; }
    public Student Student { get; set; }
}
```

DbContext:

```
public class SchoolContext : DbContext
{
```

```
public DbSet<Student> Students { get; set; }
public DbSet<Course> Courses { get; set; }

protected override void OnConfiguring(DbContextOptionsBuilder
optionsBuilder)
{
    optionsBuilder.UseSqlServer("Server=(localdb)\\MSSQLLocalDB;Database=StudentC
ourseDb;Trusted_Connection=True;");
}
```

Console Menu Functionalities: 1. Add Student 2. Add Course (assign to Student) 3. View all Students with Courses 4. Update Course Name 5. Delete Course 6. Exit

Instructions for Students: - Use EF Core Code-First approach. - Implement one-to-many relationship: Student → Courses. - Implement all CRUD operations. - Create menu-driven console UI.

Deliverables: 1. Visual Studio Console Project with EF Core. 2. Properly implemented classes and DbContext. 3. Working CRUD operations and menu. 4. Screenshots of running program. 5. Push code to GitHub.

Reference: - Entity Framework Core Documentation: <https://learn.microsoft.com/en-us/ef/core/>