Start Main Menu

Main Application

Application

Calculate grade average for each Student

Display each student, their subjects, and the grade for each subject

Add New Student Module

Assign Grades Module

Option 2

Option 4

Option 3

Option 1

**Variables:**  
manager : StudentManager

**Methods:**  
CalculateAverages()  
DisplayStudentRecords()

Choose menu option

**StudentManager**  
student : Dictionary<string, Student>

AddStudent(string, string) : void  
GradeSubject(string, string, double) : void  
CalculateGradeAverage() : void

Option 5

Exit Application

**Student**  
id : string  
name : string  
grades : List<Grade>  
averageGrade : double

Enter Student Id

Begin Add New Student

Add New Student Module

**Variables:**  
id : string  
name : string  
student : Student

**Methods:**  
AddStudent(string, string)  
ValidateName(string) : bool

**No**

Validate Student Id (is it unique)

**Yes**

Enter Student Name

Is name valid?

Add student

**Yes**

**No**

End Add New Student

Notify user of error

**Grade**  
subject : string  
score : double

Begin Assign Grades

Assign Grades Module

Enter Student Id

**Variables**:  
studentId : string  
student : Student  
grade : Grade  
subject : string  
score : double

**Methods:**  
AddGrade(string, double)  
ModifyGrade(Grade, double)

Valid Id?

**No**

**Yes**

Enter Subject

Enter Grade

Ask user if they want to modify the score

Subject already graded?

**Yes**

**No**

Answer

**No**

Add Grade to Student with subject and score

Notify user of error

**Yes**

Modify the score of the Grade for that subject

Display user’s current grades and subjects

End Assign Grades