# Foundations of Coding Full Stack

Module 6 project - Coursera - Microsoft

## Student grade management system

1. To complete this challenge, you will need to create a console application to manage student grades. The system needs to be able to add students, add grades to different students, and calculate average grades for students.
2. Some key features include:
   1. Add new students with names and IDs.
   2. Assign grades for different subjects.
   3. Calculate the average grade for each student.
   4. Display student records with their grades.

## Project Objectives

Manage student grade records efficiently.

Add and track students and their grades.

Calculate and generate a report for each student.

## Project requirements

### Functional requirements

Add a new student with a unique ID and name.

Assign grades for multiple subjects per student.

Calculate and return the average grade for each student.

Display student record with name, ID, subjects and grades.

### Non-Functional requirements

Usability: intuitive interface

Performance: handle operations for hundreds of students

Data integrity: prevent duplicate student IDs, ensure that each student has grades for all subjects.

Security: input validation (name checks).

### Technical requirements

Programming Language: C#

Persistence: in-memory

Structure:

Methods for adding students, assigning grades, calculating averages.

Loop to iterate through students to calculate the average grade.

Loop to iterate through subjects for completeness.

Control structure to validate input, handle missing grades.

## Design outline

## Pseudocode

1. Start function
2. Add student name, Id, number of subjects
3. Enter marks for each subject
4. If mark is entered, switch statement to assign grade for the subject
5. If mark is not entered, display error
6. Calculate the average grade for the student
7. Switch statement to assign average grade
8. Display student record with name, id, subjects, average grade.
9. End function