# **Student Score Processing System**

You have been hired by a school to create a system that manages and analyzes student scores. This system should be able to:

* Classify students based on whether they pass or fail,
* Display lists of students by performance,
* Calculate statistics such as average score and top performer.

### **Requirements**

#### **1. Define the Student Class**

* Create a Student class with the following properties:
  + **Name**: the student's name (string).
  + **Score**: the student’s score, an integer out of 100.

#### **2. Implement the Scoring System Using Delegates**

* **Define a Delegate**:
  + Create a delegate, ScoreCriteria, that takes a Student object and returns a bool to represent whether a student meets a particular score criterion.
* **Create Scoring Criteria**:
  + Use the ScoreCriteria delegate to create methods for:
    - **Passing Students**: A criterion that returns true for students with a score above a certain threshold.
    - **Failing Students**: A criterion that returns true for students with scores below the threshold.
* **Implement ScoreProcessor Class**:
  + Define a ScoreProcessor class to process and analyze student scores:
    - **Filter Students by Criteria**: A method that accepts a list of students and a ScoreCriteria delegate, returning a list of students who meet the criteria.
    - **Calculate Average Score**: A method that accepts a Func<List<Student>, double> delegate to calculate and return the average score of all students.

#### **3. Add Extension Methods for List<Student>**

* **PrintStudentList**:
  + Create an extension method PrintStudentList for the List<Student> class that prints each student's name and score from the list.
* **TopScorer**:
  + Create an extension method TopScorer for the List<Student> class that returns the student with the highest score from the list.

#### **4. Program Execution**

* **Initialize Data**:
  + Create a list of Student objects with different names and scores.
* **Filter and Display Students**:
  + Use the Filter method to get lists of passing and failing students.
  + Display each group of students with the PrintStudentList extension method.
* **Calculate and Display Average Score**:
  + Use the average score calculation method to find and display the average score of all students.
* **Identify and Display the Top Scorer**:
  + Use the TopScorer extension method to find and display the student with the highest score.