#include <iostream>

#include <cstdlib>

#include <cstring>

#include <iomanip>

using namespace std;

char getGrade(int score) {

    if (score >= 80 && score <= 100) return 'A';

    else if (score >= 70 && score <= 79) return 'B';

    else if (score >= 60 && score <= 69) return 'C';

    else if (score >= 50 && score <= 59) return 'D';

    else return 'F';

}

int main() {

    srand(static\_cast<unsigned int>(time(0)));

    int n = rand() % 16 + 5;

    cout << "   Number of Students: " << n << endl;

    int\* scores = new int[n];

    for (int i = 0; i < n; i++) {

        scores[i] = rand() % 101;

    }

    cout << left << setw(10) << "Student" <<  setw(10) << "Score" << "Grade" << endl;

    cout << "------------------------------------------------" << endl;

    int countA = 0, countB = 0, countC = 0, countD = 0, countF = 0;

    for (int i = 0; i < n; i++) {

        char grade = getGrade(scores[i]);

        cout << left << setw(10) << (i + 1)

             << setw(10) << scores[i]

             << grade << endl;

        switch (grade) {

            case 'A': countA++; break;

            case 'B': countB++; break;

            case 'C': countC++; break;

            case 'D': countD++; break;

            case 'F': countF++; break;

        }

    }

    cout << "\nstudent in class gread" << endl;

    cout << "A: " << countA << endl;

    cout << "B: " << countB << endl;

    cout << "C: " << countC << endl;

    cout << "D: " << countD << endl;

    cout << "F: " << countF << endl;

    delete[] scores;

}



