



كلية تكنولوجيا الصناعة والطاقة

Information Technology
Department
2nd Year



جامعة برج العرب التكنولوجية
BORG AL ARAB TECHNOLOGICAL UNIVERSITY
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Course: Programming Essentials in C++
Semester: 1st term 2025/2026.

Lecturers: Dr. Nehal Elazaly, Dr. Ghada Fathy

Assignment 2: C++ programming

Model Answers

Assignment 2

```
using namespace std;

int main() {
    int numStudents;
    cout << "Enter number of students: ";
    cin >> numStudents;

    int passed = 0, failed = 0;    // counters
    double totalAverage = 0.0;    // to calculate class average

    for (int i = 1; i <= numStudents; i++) {
        string name;
        double m1, m2, m3;

        cout << "\nEnter name of student " << i << ": ";
        cin >> name;

        cout << "Enter 3 marks: ";
        cin >> m1 >> m2 >> m3;

        double average = (m1 + m2 + m3) / 3.0;
        totalAverage += average;

        cout << fixed << setprecision(2);
        cout << "Average = " << average << " → ";

        if (average >= 90)
            cout << "Excellent";
        else if (average >= 75)
            cout << "Very Good";
        else if (average >= 60)
            cout << "Good";
        else if (average >= 50) {
            cout << "Pass";
            passed++;    // increment pass counter
        } else {
            cout << "Fail";
            failed++;    // increment fail counter
        }

        // If passed is not updated above, update here for other categories
        if (average >= 50)
            passed++;
        cout << endl;
    }

    // Compute class average
    double classAverage = totalAverage / numStudents;

    cout << "\nTotal Passed = " << passed;
    cout << "\nTotal Failed = " << failed;
    cout << "\nClass Average = " << fixed << setprecision(2) << classAverage << endl;

    return 0;
}
```