Midterm Skills Exam 2025	
Set A: Student Average Grade Calculator	
Course Code: CPE 007	**Program:** Computer Engineering
Course Title: Programming Logic and Design	**Date Performed: 10/09/2025**
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6. Output

```cpp
#include <iostream>
#include <iomanip>
#include <cctype>
#include <string>

#define studentsLimit 10

using namespace std;
int main()
{
    int numStudents;

    string name[studentsLimit];
    string studentNum[studentsLimit];
    int grades[studentsLimit][3];
    double avg[studentsLimit];
    string topStudent;
    double highestAvg = -1;

    cout << "Enter number of students: ";
    cin >> numStudents;
    if (numStudents < 1 || numStudents > studentsLimit) {
        cout << "Student Limit Exceeded. Restart program." << endl;
        return 0;
    }

```

```
27
28      for (int i = 0; i < numStudents; i++) {
29          cout << endl;
30          cout << "Enter details for student " << (i + 1) << ":\n";
31
32          cout << "Name: ";
33          cin.ignore();
34          getline(cin, name[i]);
35
36          cout << "Student Number: ";
37          getline(cin, studentNum[i]);
38
39          cout << "Enter 3 grades:\n";
40          int total = 0;
41
42          for (int j = 0; j < 3; j++) {
43              cout << "Grade " << (j + 1) << ": ";
44              cin >> grades[i][j];
45              total += grades[i][j];
46          }
47
48          avg[i] = total / 3.0;
49
50          if (avg[i] > highestAvg) {
51              highestAvg = avg[i];
52              topStudent = name[i];
53          }
54      }
55
```

```
56      cout << endl;
57      cout << "-------------------------------------------------------------------------------\n";
58      cout << "                      STUDENT GRADE REPORT\n";
59      cout << "-------------------------------------------------------------------------------\n";
60      cout << left << setw(20) << "Name" << setw(20) << "Student No." << setw(20) << "Grades" << setw(25) << "Average" << endl;
61      cout <<"-------------------------------------------------------------------------------\n";
62
63      for (int i = 0; i < numStudents; i++) {
64          cout << left << setw(15) << name[i]
65               << setw(20) << studentNum[i]
66               << setw(10);
67
68          for (int j = 0; j < 3; j++) {
69              cout << grades[i][j] << " ";
70          }
71
72          cout << setw(20) << fixed << setprecision(2) << avg[i] << endl;
73      }
74
75      cout << "-------------------------------------------------------------------------------\n";
76      cout << "Top Student: " << topStudent << " (Average: " << fixed << setprecision(2) << highestAvg << ")\n";
77      cout << "-------------------------------------------------------------------------------\n";
78
79      return 0;
80  }
81
```

```
Enter number of students: 3

Enter details for student 1:
Name: Alvin Santos
Student Number: 2021-1103
Enter 3 grades:
Grade 1: 87
Grade 2: 88
Grade 3: 84

Enter details for student 2:
Name: Mark Benos
Student Number: 2023-1070
Enter 3 grades:
Grade 1: 89
Grade 2: 91
Grade 3: 92

Enter details for student 3:
Name: Viggo Aguilar
Student Number: 2022-1203
Enter 3 grades:
Grade 1: 91
Grade 2: 90
Grade 3: 93
```

```
--------------------------------------------------------------------------------
                            STUDENT GRADE REPORT
--------------------------------------------------------------------------------
Name                Student No.         Grades              Average
--------------------------------------------------------------------------------
Alvin Santos   2021-1103           87         88 84 86.33
Mark Benos     2023-1070           89         91 92 90.67
Viggo Aguilar  2022-1203           91         90 93 91.33
--------------------------------------------------------------------------------
Top Student: Viggo Aguilar (Average: 91.33)
--------------------------------------------------------------------------------


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Process exited after 81.42 seconds with return value 0
Press any key to continue . . .
```

7. Supplementary Activity

8. Conclusion

Concluding this activity, I mastered the ways of using strings, loops, and uses of arrays during the exams. With the use of for loops, it allowed me to place more conditions for the program to look for the desired inputs like the amount of students, how the for loop reads the inputs for executing blocks of code like processing averages, sorting values, and outputting the sorted values. With the previous lessons, such as the use of strings, allowed the input of names, doubles

for more precise calculations along with the iomanip library that I used earlier in previous activities. The use of setw from the iomanip allowed for a more organized output of information that is readable. Other methods are also possible such as "/t" but I prefer the more consistent display by setw function. Overall, this activity expanded my understanding in this programming language and applied my learned lessons to more complex problems.