Seatwork 4.1	
Switch Case	
Course Code: CPE007	**Program:** Computer Engineering
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6. Output

```
#include <iostream>
using namespace std;

int main() {

  int Phys_Grad, Bio_Grad, Math_Grad;
  int Avg;

      cout << "Input Physics Grade: ";
          cin >> Phys_Grad;
        cout << endl;
        cout << "Input Biology: ";
          cin >> Bio_Grad;
        cout << endl;
        cout << "Input Math: ";
          cin >> Math_Grad;
        cout << endl;

        Avg = (Phys_Grad + Bio_Grad + Math_Grad) / 3;

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


        switch(Avg/10) {
            case 9:
              cout << "Average Grade is: " << Avg << "%"<< endl;
              cout << "Grade Level: A" << endl;
              break;

            case 8:
              cout << "Average Grade is: " << Avg << "%"<< endl;
              cout << "Grade Level: B" << endl;
              break;
```

```
34
35              case 7:{
36                  cout << "Average Grade is: " << Avg << "%"<< endl;
37                  cout << "Grade Level: C" << endl;
38                  break;
39
40              case 6:
41                  cout << "Average Grade is: " << Avg << "%"<< endl;
42                  cout << "Grade Level: D" << endl;
43                  break;
44
45              case 5:
46                  cout << "Average Grade is: " << Avg << "%"<< endl;
47                  cout << "Grade Level: E" << endl;
48                  break;
49
50              case 4:
51                  cout << "Average Grade is: " << Avg << "%"<< endl;
52                  cout << "Grade Level: E" << endl;
53                  break;
54
55              default:
56                  cout << "Average Grade is: " << Avg << "%"<< endl;
57                  cout << "Grade Level: F" << endl;
58                  break;
59          }
60      }
61      return 0;
62  }
```

At the start of the code I initialized the 3 grades that are Physics, Biology and Math. Then I initialized an integer for the value of the Average of all 3 subjects and set them all to 0. After that I proceeded to output statements that would tell the user to input the grade of the student and the code would set each of the values to their respective integers. Once all 3 subjects had an input value I proceeded with getting the average of the 3 subjects, of which I used for the condition statement for the switch case control structure but also to show later on the average grade of all 3 subjects. Then using the switch case control structure I sorted out the grades using the condition *(Avg/10)* and then outputted both the average grade and the grade level of the student.

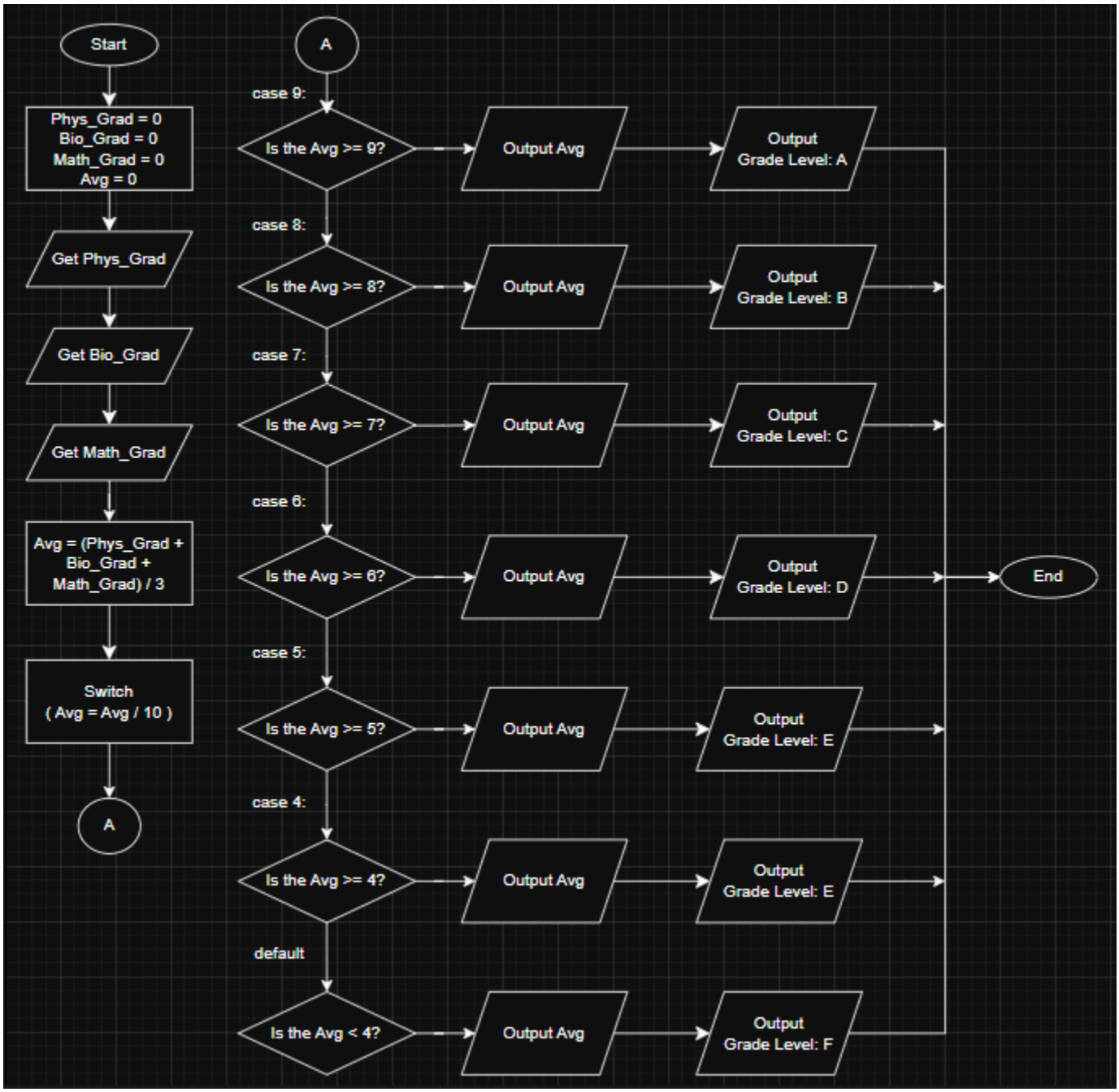
Output:

```
Input Physics Grade: 90

Input Biology: 80

Input Math: 86

------------------
Average Grade is: 85%
Grade Level: B

--------------------------------
Process exited after 10.02 seconds with return value 0
Press any key to continue . . .
```

Pseudo Code:

```
START

        INITIALIZE Phys_Grad to 0
        INITIALIZE Bio_Grad to 0
        INITIALIZE Math_Grad to 0
        INITIALIZE Avg to 0

        INPUT Phys_Grad

        INPUT Bio_Grad

        INPUT Math_Grad

        PROCESS Avg = (Phys_Grad + Bio_Grad + Math_Grad) / 3

        SWITCH condition OF (Avg / 10)
        CASE conditions OF
        9 IF the Avg >= 9
                OUTPUT Avg
                OUTPUT "Grade Level: A"
        8 IF the Avg >= 8
                OUTPUT Avg
                OUTPUT "Grade Level: B"
        7 IF the Avg >= 7
                OUTPUT Avg
                OUTPUT "Grade Level: C"
        6 IF the Avg >= 6
                OUTPUT Avg
                OUTPUT "Grade Level: D"
        5 IF the Avg >= 5
                OUTPUT Avg
                OUTPUT "Grade Level: E"
        4 IF the Avg >= 4
                OUTPUT Avg
                OUTPUT "Grade Level: E"
        DEFAULT IF the Avg < 4
                OUTPUT Avg
                OUTPUT "Grade Level: F"
        END
END
```

Flow Chart:



7. Supplementary Activity

8. Conclusion

This activity has allowed me to understand the switch case code structure more in depth compared to before the activity. The activity also tested my prior knowledge on switch case code structure and allowed me to understand new ways of using the switch condition value. It has also refreshened my knowledge on writing pseudo code and making flow charts.

9. Assessment Rubric