

Activity No. 4.1	
Assignment 4.1: Switch Case	
Course Code: CPE007	Program: Computer Engineering
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6. Output	
<p>1. Using switch statement Write a C++ program to input marks of five subjects Physics, Biology and Math. Calculate percentage and grade according to following:</p> <p>Percentage >= 90% : Grade A Percentage >= 80% : Grade B Percentage >= 70% : Grade C Percentage >= 60% : Grade D Percentage >= 40% : Grade E Percentage < 40% : Grade F</p> <hr/> <p>The output should be similar to the one below:</p> <p>Physics : 80</p> <p>Biology : 80</p> <p>Math : 80</p> <hr/> <p>Average is : ____</p> <p>Grade Level: ____</p> <p>2. Aside from the code, create a Pseudo code and Flow chart. Use the Activity template for this activity. Please take note that wrong headers of the activity template will result to deductions</p>	

```

1  #include <iostream>
2  int main () {
3      float Physics;
4      float Biology;
5      float Math;
6      int ave = 0;
7      float total;
8      float percent;
9      char grade;
10
11
12      std::cout << "Enter Physics Grade: " ;
13      std::cin >> Physics;
14
15      std::cout << "Enter Biology Grade: " ;
16      std::cin >> Biology;
17
18      std::cout << "Enter Math Grade: " ;
19      std::cin >> Math;
20      std::cout << "_____ " << std::endl;
21
22      total = Physics + Biology + Math;
23      percent = (total / 300) * 100;
24
25      int category = static_cast<int>(percent / 10);
26
27      switch (category) {
28          case 1:
29          case 2:
30              grade = 'A' ;
31              break;
32          case 3:
33              grade = 'B' ;
34              break;
35          case 4:
36              grade = 'C' ;
37              break;
38          case 5:
39              grade = 'D' ;
40              break;
41          case 6:
42          case 7:
43              grade = 'E' ;
44              break;
45          default:
46              grade = 'F' ;
47              break;
48      }
49
50      std::cout << "\nPhysics : " << Physics << std::endl;
51      std::cout << "Biology : " << Biology << std::endl;
52      std::cout << "Math : " << Math << std::endl;
53      std::cout << "_____ " << std::endl;
54      std::cout << "Average is : " << percent << std::endl;
55      std::cout << "Grade Level: " << grade << std::endl;
56
57      return 0;
58  }

```

```

Enter Physics Grade: 80
Enter Biology Grade: 80
Enter Math Grade: 80
-----

Physics : 80
Biology : 80
Math    : 80
-----

Average is : 80
Grade Level: F

-----

Process exited after 3.543 seconds with return value 0
Press any key to continue . . . |

```

Pseudo Code:

START

INPUT Physics, Biology, Math, total and percent as floating-point numbers

INPUT ave as an integer , equals to zero

INPUT grade as a character

DISPLAY "Enter Physics Grade: "

DISPLAY "Enter Biology Grade: "

DISPLAY "Enter Math Grade: "

CALCULATE total = Physics + Biology + Math

CALCULATE percent as $(\text{total} / 300) * 100$

CALCULATE category by converting percent / 10 to an integer

SWITCH (category)

Case 1 or 2

SET grade A

Case 3

SET grade B

Case 4

SET grade C

Case 5

SET grade D

Case 6 or 7

SET grade E

DEFAULT

Set grade F

DISPLAY "Physics "

DISPLAY "Biology "

DISPLAY "Math "

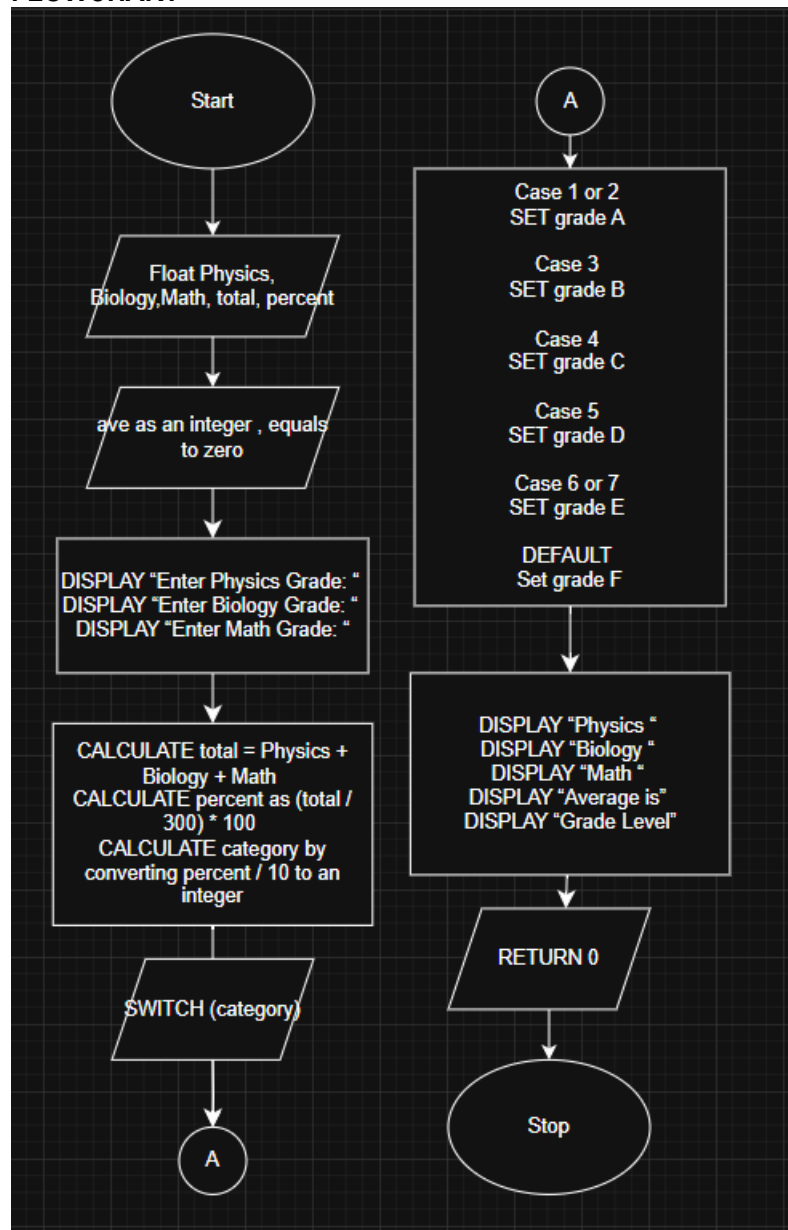
DISPLAY "Average is"

DISPLAY "Grade Level"

RETURN 0

END

FLOWCHART



7. Supplementary Activity

8. Conclusion

I learned in this activity, how to use switch, with float, integers. I calculated the grades, I floated the data, so it can hold numbers. I had some trouble on using the Switch.

9. Assessment Rubric