

Activity No. 4.1

Assignment 4.1: Switch Case

Course Code: CPE007	Program: Computer Engineering
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6. Output

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:

Percentage \geq 90% : Grade A

Percentage \geq 80% : Grade B

Percentage \geq 70% : Grade C

Percentage \geq 60% : Grade D

Percentage \geq 40% : Grade E

Percentage $<$ 40% : Grade F

The output should be similar to the one below:

Physics : 80

Biology : 80

Math : 80

Average is : _____

Grade Level: _____

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

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

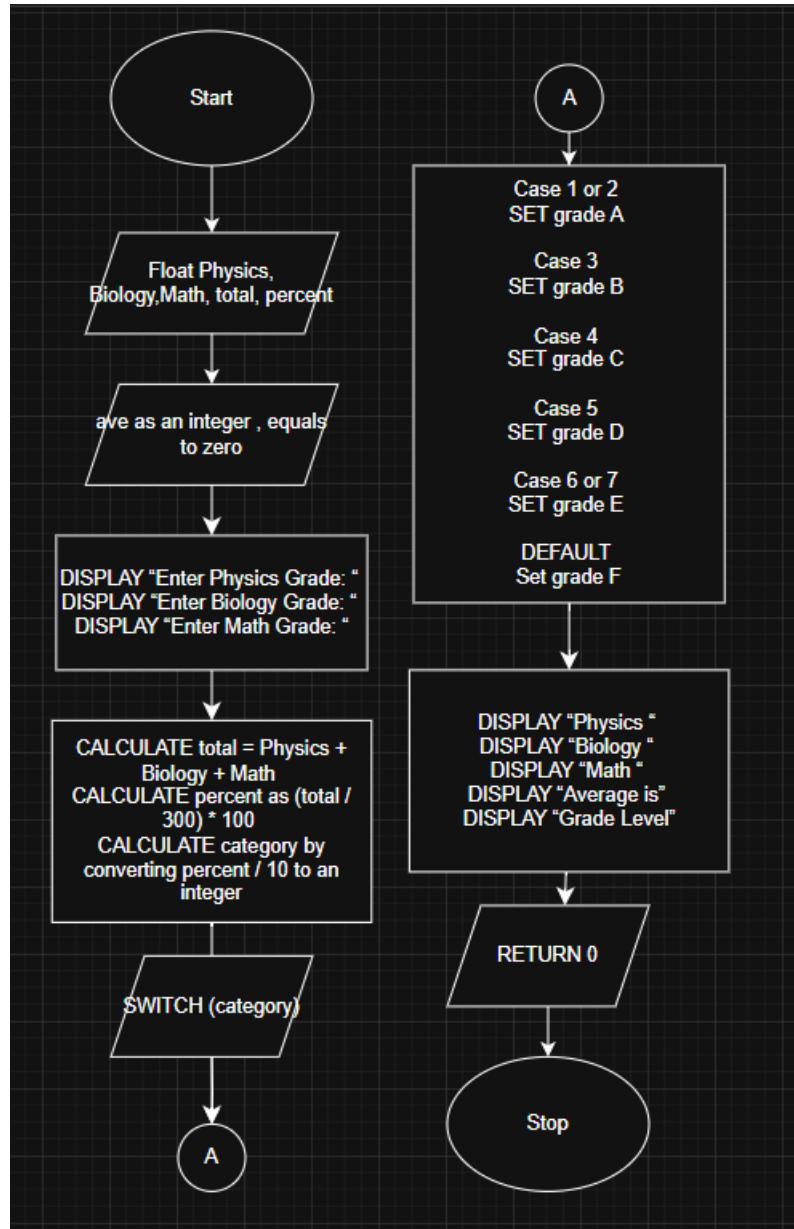
DISPLAY "Average is"

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