Activity No. 2.2	
Control Structures (part 1)	
Course Code: CPE007	**Program:** Computer Engineering
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6. Output

Exercises

1.

main.cpp

```cpp
#include <iostream>
using namespace std;
int main() {
    int total, counter, grade, average;
    total = 0;
    counter = 1;

    while (counter <= 10)
    {
        cout << "Enter the grade: ";
        cin >> grade;
        total = total + grade;
        counter = counter + 1;
    }
    average = total / 10;
    cout << "Class average is " << average << endl;
    return 0;
}
```

Console

```
Enter the grade: 66
Enter the grade: 71
Enter the grade: 85
Enter the grade: 90
Enter the grade: 77
Enter the grade: 84
Enter the grade: 82
Enter the grade: 88
Enter the grade: 73
Enter the grade: 69
Class average is 78
```

7. Supplementary Activity

Activities

1.

main.cpp

```cpp
#include <iostream>
using namespace std;
int main()
{
    int number;
    cout << "Enter a number: ";
    cin >> number;

    if (number % 2 == 0)
    {
        cout << number << " is even." << endl;
    }
    else
    {
        cout << number << " is odd." << endl;
    }
    return 0;
}
```

Console

```
Enter a number: 144
144 is even.
Enter a number: 333
333 is odd.
Enter a number: 99999999999999999999999999999999999999999999999
2147483647 is odd.
Enter a number: -99999999999999999999999999999999999999999999999
-2147483648 is even.
```

2.

main.cpp

```cpp
#include <iostream>
using namespace std;
int main()
{
    int age;
    char isStudent;
    float fare = 9.0;
    float discount = 0.0;

    cout << "Enter your age: ";
    cin >> age;

    cout << "Are you a student? (y/n): ";
    cin >> isStudent;

    if (age >= 60)
    {
        discount = fare * 0.10;
    }
    else if (isStudent == 'y')
    {
        discount = fare * 0.08;
    }

    float resultFare = fare - discount;
    cout << "Your fare after discount is: " << resultFare << " pesos" << endl;

    return 0;
}
```

Console

```
Enter your age: 18
Are you a student? (y/n): y
Your fare after discount is: 8.28 pesos
Enter your age: 27
Are you a student? (y/n): n
Your fare after discount is: 9 pesos
Enter your age: 61
Are you a student? (y/n): n
Your fare after discount is: 8.1 pesos
Enter your age: 61
Are you a student? (y/n): y
Your fare after discount is: 8.1 pesos
```

3.

main.cpp

```cpp
#include <iostream>
using namespace std;
int main()
{
    int grade;
    int total = 0;
    int count = 0;

    cout << "Enter grades (-1 to stop): ";
    cin >> grade;

    while (grade != -1)
    {
        total += grade;
        count++;

        cout << "Enter grade (-1 to stop): ";
        cin >> grade;
    }

    if (count != 0)
    {
        float average = static_cast<float>(total) / count;
        cout << "Class average is: " << average << endl;
    }
    else
    {
        cout << "No grades were entered." << endl;
    }

    return 0;
}
```

Console

```
Enter grades (-1 to stop): -1
No grades were entered.
Enter grades (-1 to stop): 72
Enter grade (-1 to stop): 59
Enter grade (-1 to stop): 61
Enter grade (-1 to stop): 67
Enter grade (-1 to stop): 74
Enter grade (-1 to stop): 84
Enter grade (-1 to stop): 83
Enter grade (-1 to stop): 70
Enter grade (-1 to stop): 65
Enter grade (-1 to stop): 64
Enter grade (-1 to stop): -1
Class average is: 69.9
```

8. Conclusion

Concluding this activity, I learned how to write conditions and conditional statements with the if, else, and while selection structures. And in the later parts of this activity, I learned how to apply counter controlled and sentinel controlled repetition in code. I also learned chaining other variables into cascaded statements through the else statement. Overall, this activity brought me possibilities for writing more complex programs.

9. Assessment Rubric