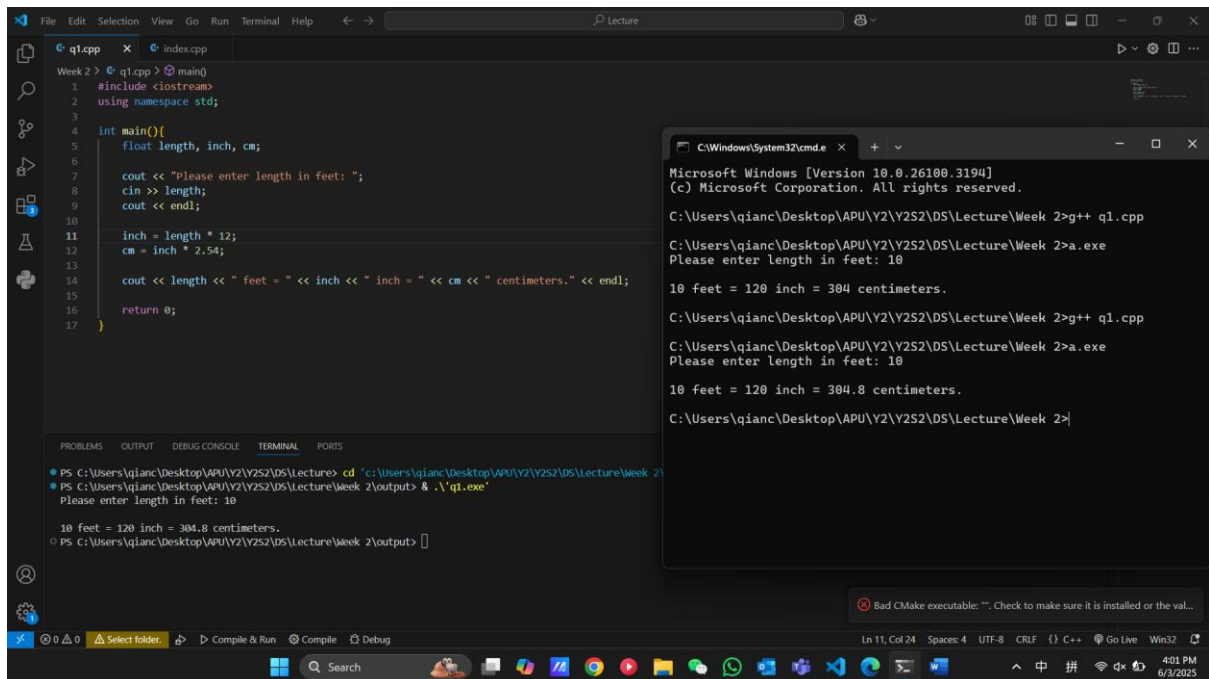


## Chap 2

### Class Activity 1



```
File Edit Selection View Go Run Terminal Help
q1.cpp x index.cpp
Week 2 > q1.cpp > main()
1 #include <iostream>
2 using namespace std;
3
4 int main()
5 {
6     float length, inch, cm;
7
8     cout << "Please enter length in feet: ";
9     cin >> length;
10    cout << endl;
11
12    inch = length * 12;
13    cm = inch * 2.54;
14
15    cout << length << " feet = " << inch << " inch = " << cm << " centimeters." << endl;
16
17    return 0;
18 }

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS
PS C:\Users\qianc\Desktop\APU\Y2\Y2S2\DS\Lecture\Week 2> cd 'c:\Users\qianc\Desktop\APU\Y2\Y2S2\DS\Lecture\Week 2' & .\q1.exe
Please enter length in feet: 10

10 feet = 120 inch = 304.8 centimeters.
PS C:\Users\qianc\Desktop\APU\Y2\Y2S2\DS\Lecture\Week 2\output>

C:\Windows\System32\cmd.exe
Microsoft Windows [Version 10.0.26100.3194]
(c) Microsoft Corporation. All rights reserved.

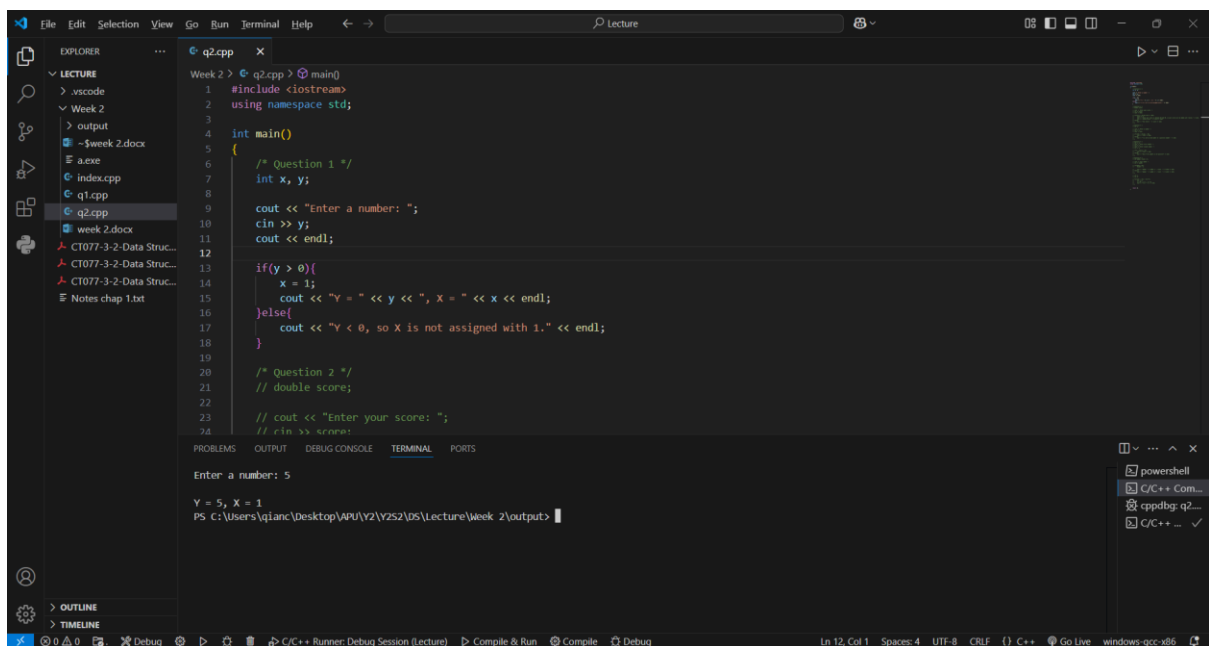
C:\Users\qianc\Desktop\APU\Y2\Y2S2\DS\Lecture\Week 2>g++ q1.cpp
C:\Users\qianc\Desktop\APU\Y2\Y2S2\DS\Lecture\Week 2>a.exe
Please enter length in feet: 10

10 feet = 120 inch = 304.8 centimeters.
C:\Users\qianc\Desktop\APU\Y2\Y2S2\DS\Lecture\Week 2>g++ q1.cpp
C:\Users\qianc\Desktop\APU\Y2\Y2S2\DS\Lecture\Week 2>a.exe
Please enter length in feet: 10

10 feet = 120 inch = 304.8 centimeters.
C:\Users\qianc\Desktop\APU\Y2\Y2S2\DS\Lecture\Week 2>

Bad CMake executable: "... Check to make sure it is installed or the val...
```

### Class Activity 2



```
File Edit Selection View Go Run Terminal Help
q2.cpp x
Week 2 > q2.cpp > main()
1 #include <iostream>
2 using namespace std;
3
4 int main()
5 {
6     /* Question 1 */
7     int x, y;
8
9     cout << "Enter a number: ";
10    cin >> y;
11    cout << endl;
12
13    if(y > 0){
14        x = 1;
15        cout << "Y = " << y << ", X = " << x << endl;
16    }else{
17        cout << "Y < 0, so X is not assigned with 1." << endl;
18    }
19
20    /* Question 2 */
21    // double score;
22
23    // cout << "Enter your score: ";
24    // cin >> score;
25 }

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS
Enter a number: 5

Y = 5, X = 1
PS C:\Users\qianc\Desktop\APU\Y2\Y2S2\DS\Lecture\Week 2\output>

C/C++ Runner: Debug Session (Lecture)
C/C++ Com...
cpdbg: q2...
C/C++ ...
```

```
Week 2 > q2.cpp > main()
4 int main()
13 // if(y > 0){
14 // cout << "Enter your score: ";
15 // }
16
17 /* Question 2 */
18 double score;
19
20 cout << "Enter your score: ";
21 cin >> score;
22 cout << endl;
23
24 if(score >= 80 && score <= 90){
25     score += 5;
26     cout << "Since your score is between 80 and 90, so your score will be added with 5 marks." << endl;
27     cout << "Latest Score: " << score << endl;
28 }else{
29     cout << "Your Score: " << score << endl;
30 }
31
32 /* Question 3 */
33 // int x;
34 // cout << "Enter a number: ";
35
36
37
38
39
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85
86
87
88
89
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96
97
98
99
100
```

Enter your score: 85

Since your score is between 80 and 90, so your score will be added with 5 marks.

Latest Score: 90

PS C:\Users\qianc\Desktop\APU\Y2\Y2S2\DS\Lecture\Week 2\output>

Compiled successfully!

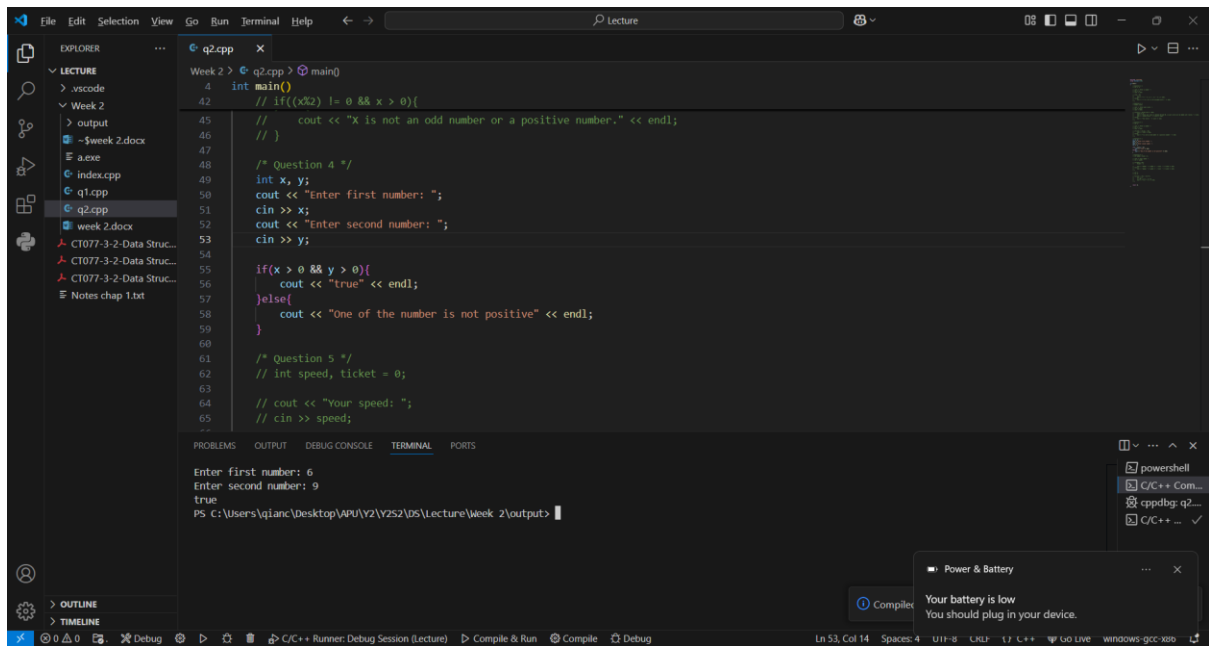
```
Week 2 > q2.cpp > main()
4 int main()
13 // if(y > 0){
14 // cout << "Enter your score: ";
15 // }
16
17 /* Question 2 */
18 double score;
19
20 cout << "Enter your score: ";
21 cin >> score;
22 cout << endl;
23
24 if(score >= 80 && score <= 90){
25     score += 5;
26     cout << "Since your score is between 80 and 90, so your score will be added with 5 marks." << endl;
27     cout << "Latest Score: " << score << endl;
28 }else{
29     cout << "Your Score: " << score << endl;
30 }
31
32 /* Question 3 */
33 // int x;
34 // cout << "Enter a number: ";
35
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99
100
```

Enter a number: 39

true

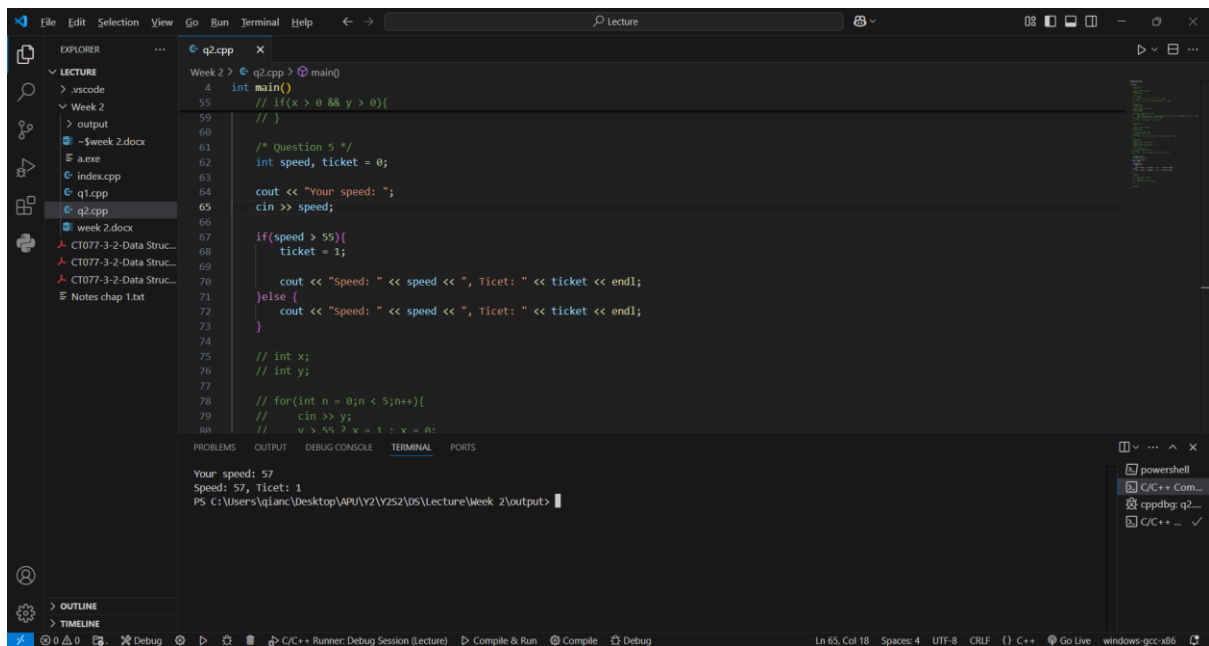
PS C:\Users\qianc\Desktop\APU\Y2\Y2S2\DS\Lecture\Week 2\output>

Compiled successfully!



```
Week 2 > q2.cpp > main()
4  int main()
42 // if((x%2) != 0 && x > 0){
45 //     cout << "x is not an odd number or a positive number." << endl;
46 // }
47
48 /* Question 4 */
49 int x, y;
50 cout << "Enter first number: ";
51 cin >> x;
52 cout << "Enter second number: ";
53 cin >> y;
54
55 if(x > 0 && y > 0){
56     cout << "true" << endl;
57 }else{
58     cout << "One of the number is not positive" << endl;
59 }
60
61 /* Question 5 */
62 // int speed, ticket = 0;
63
64 // cout << "Your speed: ";
65 // cin >> speed;
```

Enter first number: 6  
Enter second number: 9  
true  
PS C:\Users\qianc\Desktop\APU\Y2\Y2S2\DS\Lecture\Week 2\output>



```
Week 2 > q2.cpp > main()
4  int main()
55 // if((x > 0 && y > 0){
59 // }
60
61 /* Question 5 */
62 int speed, ticket = 0;
63
64 cout << "Your speed: ";
65 cin >> speed;
66
67 if(speed > 55){
68     ticket = 1;
69
70     cout << "Speed: " << speed << ", Ticket: " << ticket << endl;
71 }else {
72     cout << "Speed: " << speed << ", Ticket: " << ticket << endl;
73 }
74
75 // int x;
76 // int y;
77
78 // for(int n = 0; n < 5; n++){
79 //     cin >> y;
80 //     w = 1; w = 1 + w + 1;
```

Your speed: 57  
Speed: 57, Ticket: 1  
PS C:\Users\qianc\Desktop\APU\Y2\Y2S2\DS\Lecture\Week 2\output>

## Class Activity 3

The image displays two screenshots of a C++ IDE, likely Visual Studio Code, showing the execution of a program. The top screenshot shows the source code for 'Class Activity 3.cpp', which includes a while loop, a for loop, and a do-while loop. The bottom screenshot shows the same code after compilation and execution, with the output displayed in the terminal window.

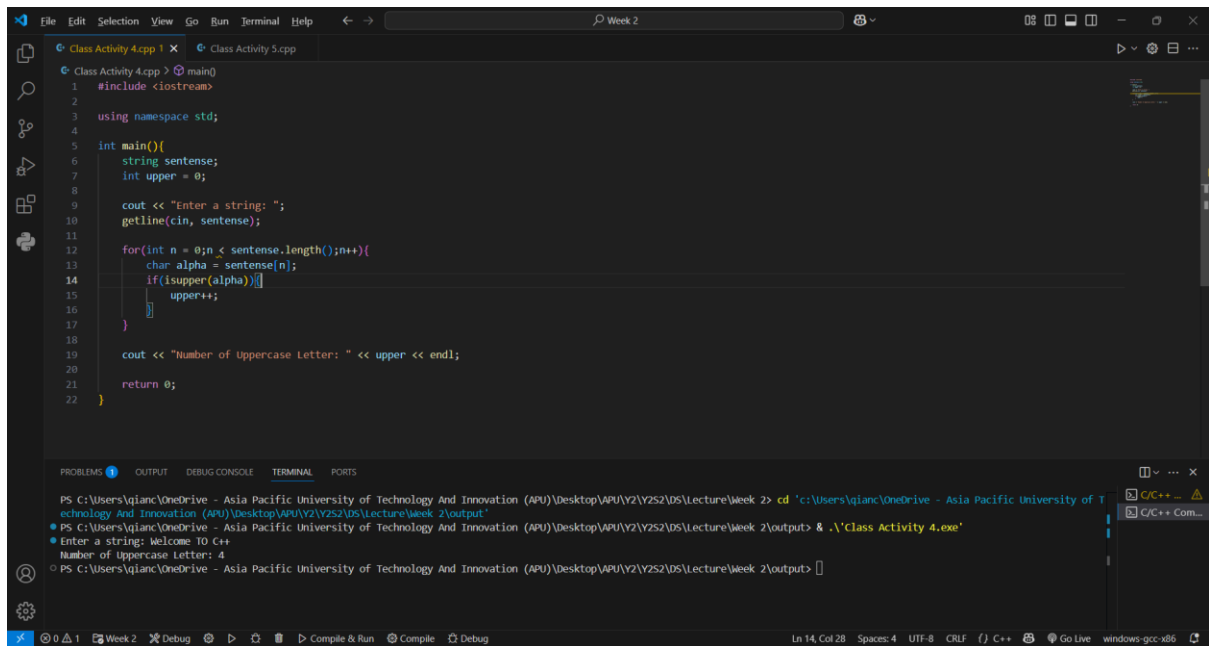
**Top Screenshot: Source Code**

```
1 // Class Activity 3.cpp
2 // Author: [Name]
3 // Date: [Date]
4
5 int main()
6 {
7     // While Loop
8     cout << "While Loop:" << endl;
9     int number = 100;
10    while(number > 10){
11        cout << number << endl;
12        number = number - 5;
13    }
14
15    // For Loop
16    cout << "For Loop:" << endl;
17    for(int num=100;num>10;num-=5){
18        cout << num << endl;
19    }
20
21    // Do...while Loop
22    cout << "Do...while Loop:" << endl;
23    number = 100;
24    do{
25        cout << number << endl;
26        number = number - 5;
27    }while(number > 10);
28
29    return 0;
30 }
```

**Bottom Screenshot: Output**

```
15 For Loop:
16 100
17 95
18 90
19 85
20 80
21 75
22 70
23 65
24 60
25 55
26 50
27 45
28 40
29 35
30 30
31 25
32 20
33 15
34
35 Do...while Loop:
36 100
37 95
38 90
39 85
40 80
41 75
42 70
43 65
44 60
45 55
46 50
47 45
48 40
49 35
50 30
51 25
```

## Class Activity 4



The screenshot shows a C++ IDE with a file named 'Class Activity 4.cpp'. The code defines a `main` function that reads a string from the user and counts the number of uppercase letters. The terminal output shows the program was compiled and executed, with the input 'Welcome to C++' and the output 'Number of Uppercase Letter: 4'.

```
1 #include <iostream>
2
3 using namespace std;
4
5 int main()
6 {
7     string sentence;
8     int upper = 0;
9
10    cout << "Enter a string: ";
11    getline(cin, sentence);
12
13    for(int n = 0; n < sentence.length(); n++){
14        char alpha = sentence[n];
15        if(isupper(alpha))
16            upper++;
17    }
18
19    cout << "Number of Uppercase Letter: " << upper << endl;
20
21    return 0;
22 }
```

Terminal Output:

```
PS C:\Users\qianc\OneDrive - Asia Pacific University of Technology And Innovation (APU)\Desktop\APU\Y2\Y2S2\DS\Lecture\Week 2> cd 'c:\Users\qianc\OneDrive - Asia Pacific University of Technology And Innovation (APU)\Desktop\APU\Y2\Y2S2\DS\Lecture\Week 2\output'
PS C:\Users\qianc\OneDrive - Asia Pacific University of Technology And Innovation (APU)\Desktop\APU\Y2\Y2S2\DS\Lecture\Week 2\output> g++ -std=c++11 -o 'C:\Users\qianc\OneDrive - Asia Pacific University of Technology And Innovation (APU)\Desktop\APU\Y2\Y2S2\DS\Lecture\Week 2\output\Class Activity 4.exe'
PS C:\Users\qianc\OneDrive - Asia Pacific University of Technology And Innovation (APU)\Desktop\APU\Y2\Y2S2\DS\Lecture\Week 2\output> .\Class Activity 4.exe
Enter a string: Welcome to C++
Number of Uppercase Letter: 4
```

## Class Activity 5

The image shows a C++ IDE with two panels. The top panel displays the source code for 'Class Activity 5.cpp', which includes a prime number checking function and a main function that prints primes between 50 and 150. The bottom panel shows the terminal output of the program, which lists the prime numbers in that range.

```
1 #include <iostream>
2
3 using namespace std;
4
5 bool isPrime(int num) {
6     if (num < 2) return false;
7     for (int i = 2; i * i <= num; i++) {
8         if (num % i == 0) return false;
9     }
10    return true;
11 }
12
13 void printPrimes(int start, int end) {
14     cout << "Prime Numbers between " << start << " and " << end << ":\n";
15     cout << "===== \n";
16
17     for (int num = start; num <= end; num++) {
18         if (isPrime(num)) {
19             cout << num << " ";
20         }
21     }
22
23     cout << "\n===== \n";
24 }
25
26 int main() {
27     int start, end;
28
29     cout << "Start value: ";
30     cin >> start;
31     cout << "End value: ";
32     cin >> end;
33
34     printPrimes(start, end);
35
36     return 0;
37 }
```

Compiled successfully!

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS

```
PS C:\Users\qiang\OneDrive - Asia Pacific University of Technology And Innovation (APU)\Desktop\APU\Y2\Y2S2\DS\Lecture\Week 2> cd 'c:\Users\qiang\OneDrive - Asia Pacific University of Technology And Innovation (APU)\Desktop\APU\Y2\Y2S2\DS\Lecture\Week 2\output'
PS C:\Users\qiang\OneDrive - Asia Pacific University of Technology And Innovation (APU)\Desktop\APU\Y2\Y2S2\DS\Lecture\Week 2\output> g++ & .\Class Activity 5.exe
Start value: 50
End value: 150
Prime Numbers between 50 and 150:
=====
53 59 61 67 71 73 79 83 89 97 101 103 107 109 113 127 131 137 139 149
=====
```