Experiment 1:

Write a program non-recursive and recursive program to calculate Fibonacci numbers and analyse their time and space complexity.

Code:

```
// C++ program to count Fibonacci numbers in given range
#include <bits/stdc++.h>
using namespace std;

// Returns count of fibonacci numbers in [low, high]
int countFibs(int low, int high)
{
        // Initialize first three Fibonacci Numbers
        int f1 = 0, f2 = 1, f3 = 1;

        // Count fibonacci numbers in given range
        int result = 0;

        while (f1 <= high)
        {
                if (f1 >= low)
                result++;
                f1 = f2;
                f2 = f3;
                f3 = f1 + f2;
        }

        return result;
        }

        // Driver program
        int main()
        {
        int low = 10, high = 100;
        cout << "Count of Fibonacci Numbers is "<< countFibs(low, high);
        return 0;
        }
```

Output: Count of Fibonacci Numbers is 5