fibonacci.py

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# PROGRAM ID:  fibonacci.py / Fibonacci Number Sequence Generator
# AUTHOR:  student name
# INSTALLATION:  MIDDLE TENNESSEE STATE UNIVERSITY
# REMARKS:  Leonardo of Pisa, who is also called Leonardo Fibonacci,
# originated the following sequence of numbers in the year 1202:
# 0, 1, 1, 2, 3, 5, 8, 13, 21,...  In this sequence, each number is
# the sum of the preceding two and is denoted by F
# (F for Fibonacci and n for number).             n
#
# Formally, this sequence is defined as
#
#                   F    = 0
#                    1
#
#                   F    = 1
#                    2
#
#                   F    = F    + F     where n>=1
#                    n+2    n+1    n
#
# This program prints the first NUMBER_TO_PRINT Fibonacci numbers.
#
#    .    1    .    2    .    3    .    4    .    5    .    6    .    7
#2345678901234567890123456789012345678901234567890123456789012345678901234567890

NUMBER_TO_PRINT = 20       # How many Fibonacci numbers to print

def main():
    # Variables used:
    #   current: Current Fibonacci number being calculated
    #   first_previous: Previous Fibonacci number in sequence
    #   second_previous: 2nd Previous Fibonacci number in sequence

    # Initialize
    print("Fibonacci Number Sequence\n")
    second_previous = 0
    first_previous  = 1

    print(second_previous)
    print(first_previous)

    # Generate and print remaining Fibonacci numbers
    for counter in range(2,NUMBER_TO_PRINT):
        current = first_previous + second_previous
        print(current)
        second_previous = first_previous
        first_previous = current


main()
```

fibonacci.cpp

```
// PROGRAM ID:  fibonacci.cpp / Fibonacci Number Sequence Generator
// REMARKS:  Leonardo of Pisa, who is also called Leonardo Fibonacci,
// originated the following sequence of numbers in the year 1202:
// 0, 1, 1, 2, 3, 5, 8, 13, 21,...  In this sequence, each number is
// the sum of the preceding two and is denoted by F
// (F for Fibonacci and n for number).             n
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// Formally, this sequence is defined as
//
//                   F    = 0
//                    1
//
//                   F    = 1
//                    2
//
//                   F    = F    + F     where n>=1
//                    n+2    n+1    n
//
// This program prints the first NUMBER_TO_PRINT Fibonacci numbers.
//   .    1    .    2    .    3    .    4    .    5    .    6    .    7    .
//345678901234567890123456789012345678901234567890123456789012345678901234567890123456789012345

#include <iostream>
using namespace std;

const int NUMBER_TO_PRINT=20; // How many Fibonacci numbers to print

int main()
{
    int current;          // Current Fibonacci number being calculated
    int firstPrevious;    // Previous Fibonacci number in sequence
    int secondPrevious;   // 2nd Previous Fibonacci number in sequence
    int counter;          // Count of how many numbers printed

    // Initialize
    cout <<  "Fibonacci Number Sequence \n\n";
    secondPrevious = 0;
    firstPrevious  = 1;
    cout << secondPrevious << endl << firstPrevious << endl;
    counter = 2;

    // Generate and print remaining Fibonacci numbers
    while (counter < NUMBER_TO_PRINT)
    {
        current = firstPrevious + secondPrevious;
        cout << current << endl;
        counter++;
        secondPrevious = firstPrevious;
        firstPrevious = current;
    }

    return 0;
} // end main
```