ASSIGNMENT III

Write a program in any programming language of your choice to prompt the user to define the starting value of a Fibonacci sequence, i.e., 0 or 1. The program is expected to prompt the user to specify a finite number of Fibonacci sequences to be generated and lastly print out the output. Zip the code together with a report explaining the code and a snapshot of the output and upload on SAKAI taking note of the submission deadline.

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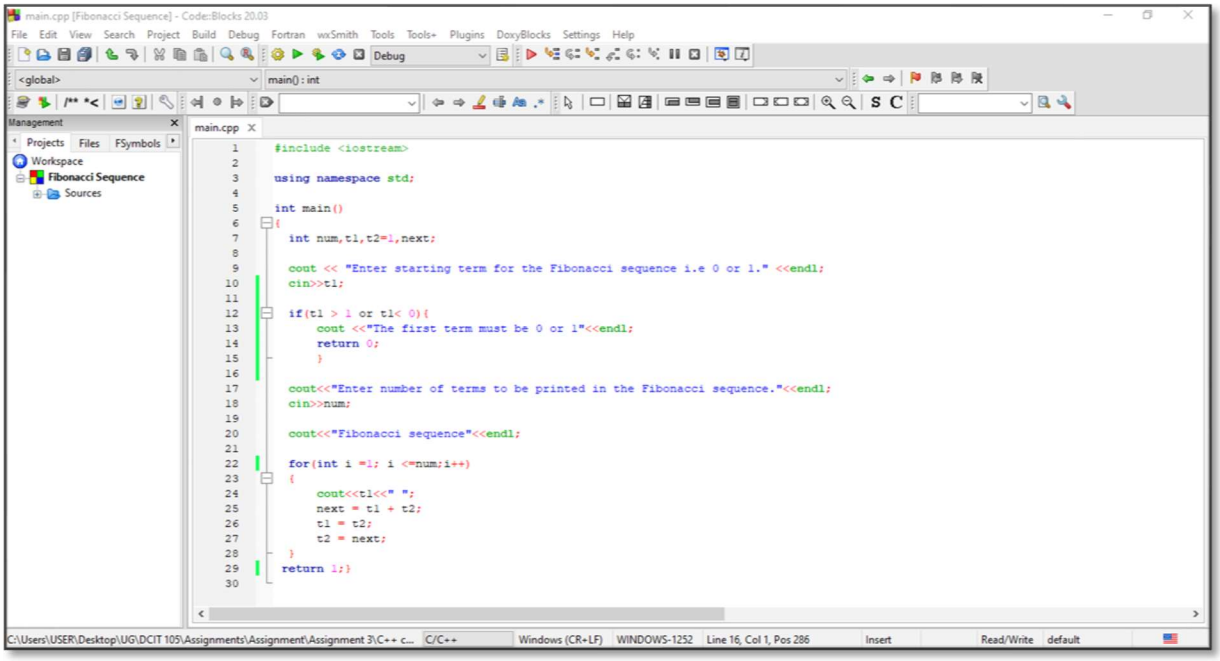
Fibonacci sequence Codes using Code blocks in C++.



How the Codes Works.

Line 1: **'#include <iostream>'** is a header file library that lets us work with input and output objects, such as cout, cin.

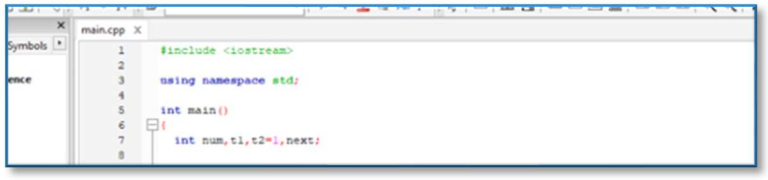
Line 3: **'using namespace std'** means that we can use names for objects and variables from the standard library.

Line 5: defines the entry or the starting point of the C/C++ program code.

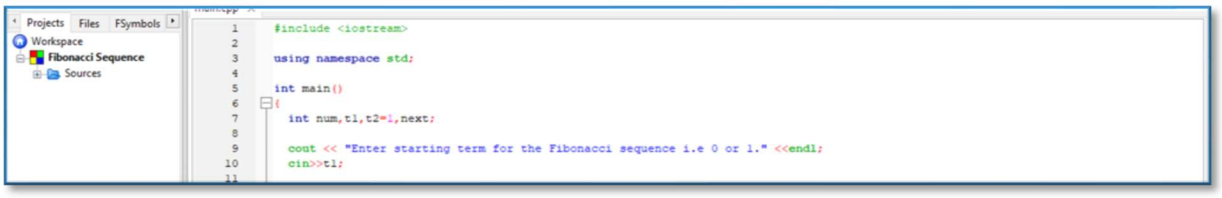
Line 7 of codes are integer variables.

- num represent the number of terms to be generated.
- T1 represent the first term.

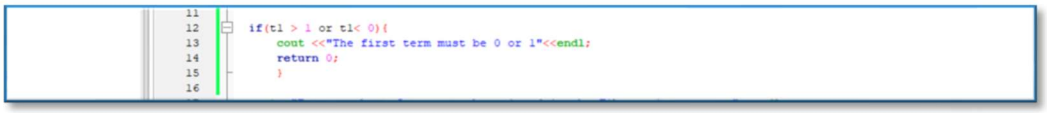
- t2 represent the second term which is 1.
- next represent the next term after the second term.



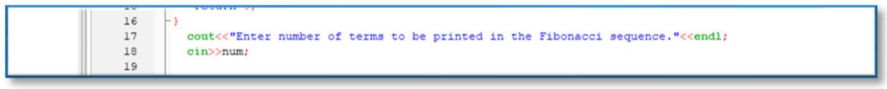
The 9th line of code prompt the user to enter the first term of sequence i.e. 1 or 0 while the 8th line of code store the number input by the user.



Line 12 is a **'if'** conditional code that will detect if the number input by the user is 0 or 1. If the number is less than 0 or greater than 1, the 14 line will prompt the to input the correct number and return 0. This will at as an error message.



Line 17 prompt the user to enter the number of terms to be generated and line 18 will store the number input by the user.



Line 20 serve as a tile when the sequence is printed out.

Line 22 is a for loop with a counter variable **'i'** starting from 1 to **'num'** (the number of terms to be generated).

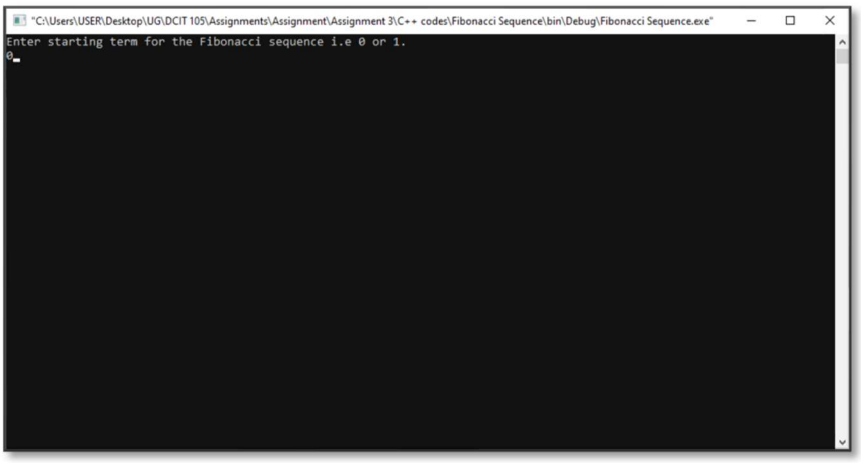
Line 24 will give a space between the terms.

Line 25 calculate the next term which is the '**first term + the second term'** and store it. Since the second term 't2' is 1. Line 26 makes **the first term the second term** and line 27 make the **second term the next term.**

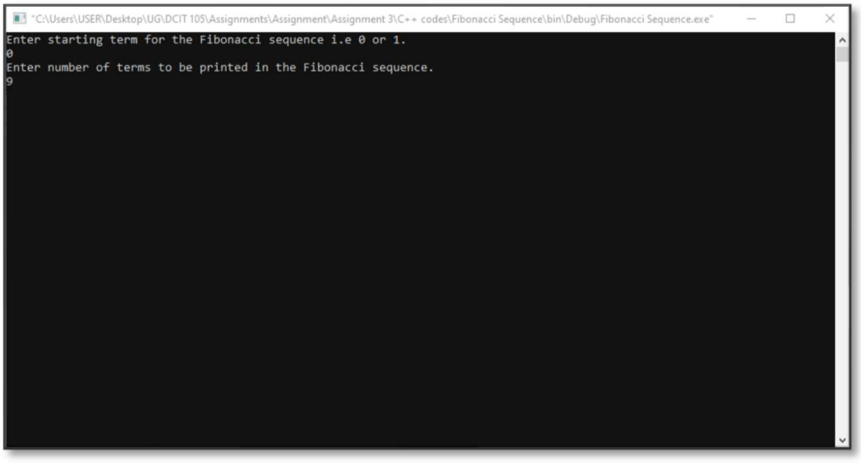
Output of the codes

The user starting with 0.

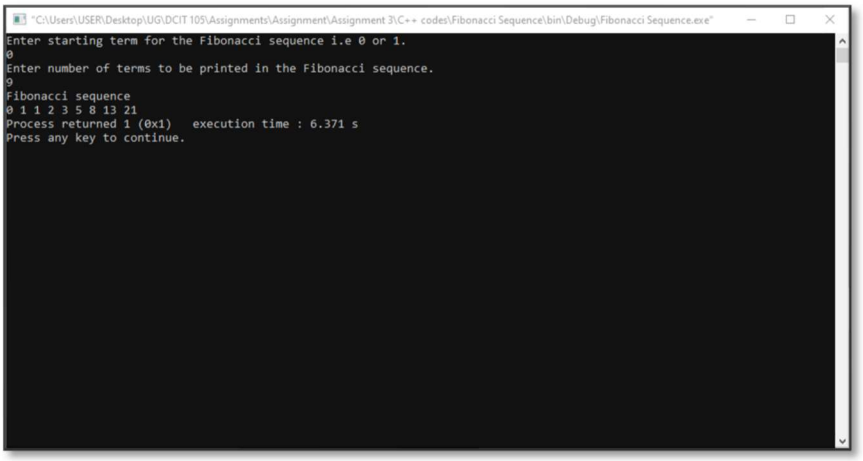
The user input 0 as the first term as shown in the diagram below.



The user is asked to input the number of terms to be generated (The user inputted 9) as shown the diagram below.

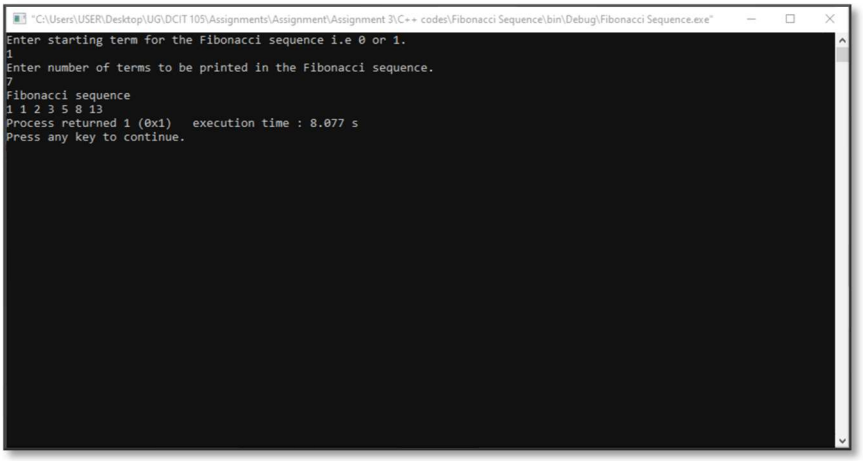


The below diagram shows the Fibonacci Sequence from the 1st term to the 9th term.



The user starts from 1

When the user input 1 as the starting value of the Fibonacci Sequence. The will user will be asking to input the number of terms to be generated, the sequence is now printed out as shown below.



If the user input a value which is not 0 or 1 as the starting value for sequence. The user is prompted to input the correct value since the sequence start with a 0 or 1. This is show in the diagram below.