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1 // COS30008
2 // Created by Nur E Siam
3
4 #include "FibonacciSequenceIterator.h"
5
6 // Constructor for Fibonacci sequence iterator
7 FibonacciSequenceIterator::FibonacciSequenceIterator(const
8     FibonacciSequenceGenerator& aSequenceObject,
9     long long aStart) noexcept
10    : fSequenceObject(aSequenceObject), fIndex(aStart) {}
11
12 // Dereference operator to retrieve the current Fibonacci number
13 const long long& FibonacciSequenceIterator::operator*() const noexcept {
14     return *fSequenceObject;
15 }
16
17 // Pre-increment operator to move to the next Fibonacci number
18 FibonacciSequenceIterator& FibonacciSequenceIterator::operator++() noexcept {
19     fSequenceObject.next();
20     ++fIndex;
21     return *this;
22 }
23
24 // Post-increment operator to move to the next Fibonacci number
25 FibonacciSequenceIterator FibonacciSequenceIterator::operator++(int) noexcept {
26     FibonacciSequenceIterator temp = *this;
27     ++(*this);
28     return temp;
29 }
30
31 // Equality operator to check if two iterators point to the same index
32 bool FibonacciSequenceIterator::operator==(const FibonacciSequenceIterator& aOther) const noexcept {
33     return fIndex == aOther.fIndex;
34 }
35
36 // Inequality operator to check if two iterators point to different indices
37 bool FibonacciSequenceIterator::operator!=(const FibonacciSequenceIterator& aOther) const noexcept {
38     return fIndex != aOther.fIndex;
39 }
40
41 // Get the iterator pointing to the beginning of the sequence
42 FibonacciSequenceIterator FibonacciSequenceIterator::begin() const noexcept {
43     return FibonacciSequenceIterator(fSequenceObject, 1);
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44
45 // Get the iterator pointing to the end of the sequence
46 FibonacciSequenceIterator FibonacciSequenceIterator::end() const noexcept {
47     return FibonacciSequenceIterator(fSequenceObject, 93);
48 }
49
```