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 1: #define BOOST_TEST_DYN_LINK
 2: #define BOOST_TEST_MODULE Main
 3: #include <boost/test/unit_test.hpp>
 4:
 5: #include "CircularBuffer.hpp"
 6:
 7: // Tests various aspects of the contructor.
 8: BOOST_AUTO_TEST_CASE(Constructor)
 9: {
10:         // Shouldn't fail.
11:         BOOST_REQUIRE_NO_THROW(CircularBuffer(100));
12:
13:         // Should fail.
14:         BOOST_REQUIRE_THROW(CircularBuffer(0), std::exception);
15:         BOOST_REQUIRE_THROW(CircularBuffer(0), std::invalid_argument);
16:         BOOST_REQUIRE_THROW(CircularBuffer(-1), std::invalid_argument);
17: }
18:
19: // Checks the size() method
20: BOOST_AUTO_TEST_CASE(Size)
21: {
22:         CircularBuffer test(1);
23:
24:
25:         BOOST_REQUIRE(test.size() == 0);
26:
27:         test.enqueue(5);
28:
29:
30:         BOOST_REQUIRE(test.size() == 1);
31:
32:         test.dequeue();
33:         BOOST_REQUIRE(test.size() == 0);
34: }
35:
36: // Checks the isEmpty() method
37: BOOST_AUTO_TEST_CASE(isEmpty)
38: {
39:         // True
40:         CircularBuffer test(5);
41:         BOOST_REQUIRE(test.isEmpty() == true);
42:
43:         // False
44:         CircularBuffer test2(5);
45:         test2.enqueue(5);
46:         BOOST_REQUIRE(test2.isEmpty() == false);
47: }
48:
49: // Checks the isFull() method
50: BOOST_AUTO_TEST_CASE(isFull)
51: {
52:         CircularBuffer test(5);
53:         BOOST_REQUIRE(test.isFull() == false);
54:
55:         CircularBuffer test2(1);
56:         test2.enqueue(5);
57:         BOOST_REQUIRE(test2.isFull() == true);
58: }
59:
60: // Test enqueue
61: BOOST_AUTO_TEST_CASE(Enqueue)
62: {
63:         // These test basic enqueuing
64:         CircularBuffer test(5);
65:
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66:         BOOST_REQUIRE_NO_THROW(test.enqueue(1));
67:         BOOST_REQUIRE_NO_THROW(test.enqueue(2));
68:         BOOST_REQUIRE_NO_THROW(test.enqueue(3));
69:         BOOST_REQUIRE_NO_THROW(test.enqueue(4));
70:         BOOST_REQUIRE_NO_THROW(test.enqueue(5));
71:         BOOST_REQUIRE_THROW(test.enqueue(6), std::runtime_error);
72: }
73:
74: // Test dequeue
75: BOOST_AUTO_TEST_CASE(Dequeue)
76: {
77:         CircularBuffer test(5);
78:
79:         test.enqueue(0);
80:         test.enqueue(1);
81:         test.enqueue(2);
82:
83:         BOOST_REQUIRE(test.dequeue() == 0);
84:         BOOST_REQUIRE(test.dequeue() == 1);
85:         BOOST_REQUIRE(test.dequeue() == 2);
86:         BOOST_REQUIRE_THROW(test.dequeue(), std::runtime_error);
87: }
```