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1: // Copyright 2015 <Angel Z'heondre Calcano>
2: // PS2a
3: #define BOOST_TEST_DYN_LINK
4: #define BOOST_TEST_MODULE Main
5: #include <boost/test/unit_test.hpp>
6: #include <iostream>
7: #include <string>
8: #include "LFSR.hpp"
9:
10: BOOST_AUTO_TEST_CASE(fiveBitsTapAtTwo) {
11:     LFSR l("00111", 2);
12:
13:     BOOST_REQUIRE(l.step() == 1);
14:     BOOST_REQUIRE(l.step() == 1);
15:     BOOST_REQUIRE(l.step() == 0);
16:     BOOST_REQUIRE(l.step() == 0);
17:     BOOST_REQUIRE(l.step() == 0); // boost finds an error here
18:     BOOST_REQUIRE(l.step() == 1);
19:     BOOST_REQUIRE(l.step() == 1);
20:     BOOST_REQUIRE(l.step() == 0);
21:     LFSR l2("00111", 2);
22:     BOOST_REQUIRE(l2.generate(8) == 198);
23: }
24:
25: BOOST_AUTO_TEST_CASE(sevenBitsTapAtfive) {
26:     LFSR s("1101010", 5);
27:     BOOST_REQUIRE(s.generate(4) != 102);
28: }
29:
30: BOOST_AUTO_TEST_CASE(sevenBitsTapAtfivea) {
31:     LFSR s("1101010", 5);
32:     BOOST_REQUIRE(s.step() == 0);
33:     BOOST_REQUIRE(s.step() == 1);
34:     BOOST_REQUIRE(s.step() == 1);
35:     BOOST_REQUIRE(s.step() == 1);
36:     BOOST_REQUIRE(s.step() == 1);
37:     std::stringstream sng;
38:     sng << s;
39:     BOOST_CHECK_EQUAL(sng.str(), "1001111");
40: }
41:
42: BOOST_AUTO_TEST_CASE(elevenbitsatseven) {
43:     LFSR l("11101000111", 7);
44:     BOOST_REQUIRE(l.step() == 1);
45:     BOOST_REQUIRE(l.step() == 0);
46:     BOOST_REQUIRE(l.step() == 1);
47:     BOOST_REQUIRE(l.step() == 0);
48:     BOOST_REQUIRE(l.step() == 1);
49:     LFSR l2("11101000111", 7);
50: }
```