Test Cases

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4-Bit/2-Disclosure Unlocker

1.1 Test cases involving an already unlocked device. The spin() should return true and no changes should be made as this indicates that the device is already unlocked.
   1.1.1. All true: TTTT.
   1.1.2. All false: FFFF.

1.2 Test cases involving a device that has all the bits the same except for one.
   1.2.1. Involving mostly true bits.
           1.2.1.1. TTTF.
           1.2.1.2. TTFT.
           1.2.1.3. TFTT.
           1.2.1.4. FTTT.

   1.2.2. Involving mostly false bits.
           1.2.2.1. FFFT.
           1.2.2.2. FFTF.
           1.2.2.3. FTFF.
           1.2.2.4. TFFF.

1.3 Test cases involving a device that has two bits that are true and two bits that are false.
   1.3.1. Test cases involving an alternating set of bits.
           1.3.1.1. Starting with true: TFTF.
           1.3.1.2. Starting with false: FTFT.
   1.3.2. Test cases involving two of the same bits on the end and two different ones in the middle.
           1.3.2.1. Starting with true: TFFT.
           1.3.2.2. Starting with false: FTTF.
   1.3.3. Test cases starting with one and ending with the other.
           1.3.3.1. Starting with true: TTFF.
           1.3.3.2. Starting with false: FFTT.

1.4. We want to verify that the FourBitTwoDisclosureDeviceUnlocker class actually halts. To check this, MAX_SPIN_COUNT will be set to fifty.

1.5. We want to see what happens with various peek() patterns.
   1.5.1. Correct peek() patterns: should all pass with close to the same number of spin() calls.
           1.5.1.1. Our standard peek pattern (first and second): [??--].
           1.5.1.2. The second and third bits: [-??-].
           1.5.1.3. The third and fourth bits: [--??].
           1.5.1.4. The first and fourth bits: [?--?].

1.5.1.5. The first and third bits: [?-?-].
1.5.1.6. The second and fourth bits: [-?-?].
1.5.2. Incorrect peek() patterns
1.5.2.1. Trying to peek at all of the bits at once: [????]. All but the tests where the Device is already unlocked should fail.
1.5.2.2. Trying to not look at any of the bits at all: [----]. All but the tests where the Device is already unlocked should fail.
1.5.2.3. Trying to peek at three of the bits at once: [???-]. All but the tests where the Device is already unlocked should fail.
1.5.2.4. Trying to only peek at one bit: [?---]. Behavior here is unspecified (when we ran this test, they all passed).