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import static org.junit.Assert.*;

import org.junit.Before;
import org.junit.Test;

public class RandomWithParityTest {

    private RandomWithParity p;

    @Before
    public void setUp() {
        p = new UnfilteredRandom();
    }

    @Test
    public void minRange() {
        int actual = p.generateNumber(1);
        assertTrue("Random number is 0 or 1", (actual == 0) || (actual == 1));
    }

    @Test
    public void repeatedMinRange() {
        int actual;
        for (int i = 0; i < 30; i++) {
            actual = p.generateNumber(1);
            assertTrue("Random number is 0 or 1", (actual == 0)
                || (actual == 1));
        }
    }

    @Test
    public void increasingRanges() {
        int actual;
        for (int i = 0; i < 30; i++) {
            actual = p.generateNumber(1 + 2 * i);
            assertEquals("Random number is even", 0, actual % 2);
            actual = p.generateNumber(2 + 2 * i);
            assertEquals("Random number is even", 1, actual % 2);
        }
    }

    @Test
    public void maxRange() {
        int actual = p.generateNumber(Integer.MAX_VALUE);
        assertEquals("Maximum range", 0, actual % 2);
    }

    @Test(timeout = 100)
    public void largeRange() {
        p.generateNumber(100000);
        assertTrue("Large range", true);
    }
}
```