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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() {
        this.p = new UnfilteredRandom();
    }

    @Test
    public void minRange() {
        int actual = this.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 = this.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 = this.p.generateNumber(1+2*i);
            assertTrue ("Random number is even" ,
                (actual % 2 == 0));
            actual = this.p.generateNumber(2+2*i);
            assertTrue ("Random number is even" ,
                (actual % 2 == 1));
        }
    }

    @Test
    public void maxRange(){
        int actual = this.p.generateNumber(Integer.MAX_VALUE-1);
        assertTrue ("Maximum range" , actual % 2 == 0);
    }

    @Test(timeout=100)
    public void largeRange(){
        int actual = this.p.generateNumber(100000);
        actual--; //avoid unused variable warning
        assertTrue ("Large range" , true);
    }
}
```