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import static org.junit.Assert.*;

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

public abstract class RandomWithParityTest {

    protected RandomWithParity p;

    @Before
    public abstract void setUp();

    @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);
    }
}
```