

# Testing Word Count

Given "WordMapper" and "SumReducer" for the famous "Word Count" example, below is the associated MRUnit Test.

```
import java.util.ArrayList;
import java.util.List;

import org.apache.hadoop.io.IntWritable;
import org.apache.hadoop.io.LongWritable;
import org.apache.hadoop.io.Text;
import org.apache.hadoop.mrunit.MapDriver;
import org.apache.hadoop.mrunit.MapReduceDriver;
import org.apache.hadoop.mrunit.ReduceDriver;
import org.junit.Before;
import org.junit.Test;

public class TestWordCount {
    MapReduceDriver<LongWritable, Text, Text, IntWritable, Text, IntWritable> mapReduceDriver;
    MapDriver<LongWritable, Text, Text, IntWritable> mapDriver;
    ReduceDriver<Text, IntWritable, Text, IntWritable> reduceDriver;

    @Before
    public void setUp() {
        WordMapper mapper = new WordMapper();
        SumReducer reducer = new SumReducer();
        mapDriver = new MapDriver<LongWritable, Text, Text, IntWritable>();
        mapDriver.setMapper(mapper);
        reduceDriver = new ReduceDriver<Text, IntWritable, Text, IntWritable>();
        reduceDriver.setReducer(reducer);
        mapReduceDriver = new MapReduceDriver<LongWritable, Text, Text, IntWritable, Text, IntWritable>();
        mapReduceDriver.setMapper(mapper);
        mapReduceDriver.setReducer(reducer);
    }

    @Test
    public void testMapper() {
        mapDriver.withInput(new LongWritable(1), new Text("cat cat dog"));
        mapDriver.withOutput(new Text("cat"), new IntWritable(1));
        mapDriver.withOutput(new Text("cat"), new IntWritable(1));
        mapDriver.withOutput(new Text("dog"), new IntWritable(1));
        mapDriver.runTest();
    }

    @Test
    public void testReducer() {
        List<IntWritable> values = new ArrayList<IntWritable>();
        values.add(new IntWritable(1));
        values.add(new IntWritable(1));
        reduceDriver.withInput(new Text("cat"), values);
        reduceDriver.withOutput(new Text("cat"), new IntWritable(2));
        reduceDriver.runTest();
    }

    @Test
    public void testMapReduce() {
        mapReduceDriver.withInput(new LongWritable(1), new Text("cat cat dog"));
        mapReduceDriver.addOutput(new Text("cat"), new IntWritable(2));
        mapReduceDriver.addOutput(new Text("dog"), new IntWritable(1));
        mapReduceDriver.runTest();
    }
}
```