

```

import org.junit.Assert;
import org.junit.Test;

public class DataSystemTest {
    DataSystem dataSystem;

    public DataSystemTest(){
        dataSystem = new DataSystem();
        dataSystem.readMagazines("src/MagazineLists/test.txt");
    }

    @Test
    public void testDateGetters() {
        Assert.assertEquals(dataSystem.getMagazineList(),
            dataSystem.getMagazinesByDate(0, 8));
        Assert.assertNotSame(dataSystem.getMagazineList(),
            dataSystem.getMagazinesByDate(4, 8));
        Assert.assertNotSame(dataSystem.getMagazineList(),
            dataSystem.getMagazinesByDate(8, 100));
        Assert.assertNotSame(dataSystem.getMagazineList(),
            dataSystem.getMagazinesByDate(0, 4));
        Assert.assertNotSame(dataSystem.getMagazineList(),
            dataSystem.getMagazinesByDate(-8, -1));
    }

    @Test
    public void testPublisherGetters(){
        Assert.assertEquals(dataSystem.getMagazineList(),
            dataSystem.getMagazinesByPublisher("Publisher"));
        Assert.assertEquals(dataSystem.getMagazineList(),
            dataSystem.getMagazinesByPublisher("publisher"));
    }

    @Test
    public void testTitleGetters(){
        Assert.assertEquals(dataSystem.getMagazineList(),
            dataSystem.getMagazinesByTitle("Title"));
        Assert.assertEquals(dataSystem.getMagazineList(),
            dataSystem.getMagazinesByTitle("title"));
    }
}

```