```java
import org.junit.jupiter.api.Test;

class AssociationTest {

    String llave = "llave";
    int value = 0;


    Association<String, Integer> assoc = new Association<>(llave, value);

    @Test
    void process() {
        assoc.setValue(15);
        System.out.println(assoc.toString()+",hashcode:"+assoc.hashCode());
    }
}
```

```
"C:\Program Files\Java\jdk-14.0.2\bin\java.exe" ...

<Association: llave=15>,hashcode:103054672


Process finished with exit code 0
```

```java
import org.junit.jupiter.api.Test;


class BinaryTreeTest {

    BinaryTree<String> bt = new BinaryTree<String>();
    String A = "Hola";
    String a = "Adios";

    String B = "Nombre";
    String b = "Apellido";

    @Test
    void process() {
    bt.put(A,a);
    bt.put(B,b);

    System.out.println("value de Hola: "+bt.get("Hola"));
    System.out.println("value de Nombre: "+bt.get("Nombre"));

    bt.printInorder();

    }
}
```

```
"C:\Program Files\Java\jdk-14.0.2\bin\java.exe" ...

value de Hola: Adios
value de Nombre: Apellido
Hola , Adios
Nombre , Apellido
```

```java
import org.junit.jupiter.api.Test;

class FactoryTest {

    Factory f = new Factory();

    @Test
    void process() {

        f.getImp("SplayTree");
        f.getImp("RedBlackTree");
        f.getImp("BinaryTree");

    }

}
```

```
"C:\Program Files\Java\jdk-14.0.2\bin\java.exe" ...

Process finished with exit code 0
```

```java
import org.junit.jupiter.api.Test;

class NodeTest {

    String llave = "llave";
    int value = 0;
    Node n = new Node(llave,value);

    @Test
    void process() {

        System.out.println("value:"+n.getValue()+" trad:"+n.getTrad());

    }

}
```

```
"C:\Program Files\Java\jdk-14.0.2\bin\java.exe" ...

value:llave trad:0

Process finished with exit code 0
```

```java
import org.junit.jupiter.api.Test;

class RedBlackBSTTest {

    RedBlackBST rb = new RedBlackBST();

    String A = "Hola";
    String a = "Adios";

    String B = "Nombre";
    String b = "Apellido";

    @Test
    void process() {
        rb.put(A,a);
        rb.put(B,b);

        System.out.println("value de Hola: "+rb.get("Hola"));
        System.out.println("value de Nombre: "+rb.get("Nombre"));

        System.out.println(rb.contains("Hola"));
        System.out.println(rb.contains("ejemplo"));

    }
}
```

```
"C:\Program Files\Java\jdk-14.0.2\bin\java.exe" ...

value de Hola: Adios
value de Nombre: Apellido
true
false
```

```java
import org.junit.jupiter.api.Test;


class SplayTreeTest {

    SplayTree st = new SplayTree();

    String A = "Hola";
    String a = "Adios";

    String B = "Nombre";
    String b = "Apellido";

    @Test
    void process() {
        st.put(A,a);
        st.put(B,b);

        System.out.println("value de Hola: "+st.get("Hola"));
        System.out.println("value de Nombre: "+st.get("Nombre"));

        System.out.println(st.contains("Hola"));
        System.out.println(st.contains("ejemplo"));

    }

}
```

```
"C:\Program Files\Java\jdk-14.0.2\bin\java.exe" ...

value de Hola: Adios
value de Nombre: Apellido
true
false
```