

BINARY SEARCH TREE

I. Java Implementation

insert

```
@Assertion(value = { @Case(
pre = "(repOK(root))",
post = "repOK(root)" })
public void insert( int x )
{
    root = myins( x, root );
}
```

repOK

```
boolean repOK(BinaryNode t, Range range) {
    if(t == null) {
        return true;
    }
    if(!range.inRange(t.element)) {
        return false;
    }
    boolean ret=true;
    ret = ret && repOK(t.left,range.setUpper(t.element));
    ret = ret && repOK(t.right,range.setLower(t.element));
    return ret;
}
```

inRange

```
public boolean inRange(int value) {
    boolean ret=true;
    if(!isPositiveInfinity) {
        ret = value < upper;
    }
    if(!isNegativeInfinity) {
        ret = ret && (value > lower);
    }
    return ret;
}
```