BoxOfPencils.java

```
* A container that can hold at most one Pencil. Thus, a Pencil can only be
 * added if the box is empty.
 * @mathmodel contents : set of Pencils
 * @initially contents is empty
 * @constraint |contents| <= 1
public interface BoxOfPencils {
        /**
         * Reports the size of the box. Since the number of elements in the box is
         * at most 1, the method returns either 0 or 1.
         * @ensures size = |contents|
         * @return the number of Pencils in the box
       public int size();
        * Tests whether or not the box contains the particular Pencil.
         * @param target
                      a Pencil to be found in the box
         * @ensures contains <==> target in contents
         * @return true if and only if the box contains the target
       public boolean contains(Pencil target);
        /**
         * Adds a Pencil to the box. This method is only effective if the box is
         * empty. Otherwise, the box remains unchanged.
         * @param item
                     a Pencil to be added to the box
         * @alters contents
         * @ensures #contents is empty ==> item in contents <br />
                    #contents is not empty ==> contents = #contents
         * /
        public void insert(Pencil item);
        * Removes an arbitrary Pencil from the box. Since the box can contain at
         * most one Pencil, there is no ambiguity about which Pencil is removed.
         * @requires |contents| > 0
         * @alters contents
         * @ensures removeAny not in box <br />
                   removeAny union box = \#box
         * @return a Pencil from the box
        public Pencil removeAny();
}
```