Java Collection: TreeSet Exercises

1. Write a Java program to create a new tree set, add some colors (string) and print out the tree set.

```
import java.util.*;




class ques1
{
	public static void main(String args[])
	{
		TreeSet<String> ts = new TreeSet<String>();


		ts.add("Schinchan");
		ts.add("Kiteretsu");


		ts.add("Doraemon");


		ts.add("Perman");


		ts.add("Ninja Hattori");


		System.out.println(ts);
```

```
        }
}
```

```
C:\Users\Aakash\Desktop\4.Java\Java Assignment 5\TreeSet>javac ques1.java

C:\Users\Aakash\Desktop\4.Java\Java Assignment 5\TreeSet>java ques1
[Doraemon, Kiteretsu, Ninja Hattori, Perman, Schinchan]
```

2. Write a Java program to iterate through all elements in a tree set.

```
import java.util.*;

class ques2

{

        public static void main(String args[])

        {

                TreeSet<String> ts = new TreeSet<String>();



                ts.add("Schinchan");

                ts.add("Kiteretsu");



                ts.add("Doraemon");



                ts.add("Perman");
```

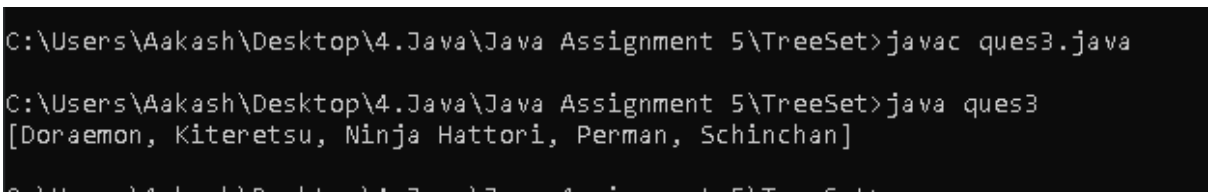
```
                ts.add("Ninja Hattori");
                Iterator i = ts.iterator();
                while(i.hasNext())
                {
                        System.out.println(i.next());
                }
        }
}
```

```
C:\Users\Aakash\Desktop\4.Java\Java Assignment 5\TreeSet>javac ques2.java

C:\Users\Aakash\Desktop\4.Java\Java Assignment 5\TreeSet>java ques2
Doraemon
Kiteretsu
Ninja Hattori
Perman
Schinchan
```

3. Write a Java program to add all the elements of a specified tree set to another tree set.

```
import java.util.*;



class ques3
{
        public static void main(String args[])
        {
```

```
        TreeSet<String> ts = new TreeSet<String>();


        ts.add("Schinchan");

        ts.add("Kiteretsu");

        ts.add("Doraemon");

        ts.add("Perman");

        ts.add("Ninja Hattori");



        TreeSet<String> ts2 = new TreeSet<String>();


        ts2.addAll(ts);


        System.out.println(ts2);

    }

}
```



4. Write a Java program to create a reverse order view of the elements contained in a given tree set.

```
import java.util.*;



class ques4
{
	public static void main(String args[])
	{
		TreeSet<String> ts = new TreeSet<String>();


		ts.add("Schinchan");
		ts.add("Kiteretsu");
		ts.add("Doraemon");
		ts.add("Perman");
		ts.add("Ninja Hattori");


		Iterator i = ts.descendingIterator();
		while(i.hasNext())
		{
			System.out.println(i.next());
		}
```

```
        }

}
```

```
C:\Users\Aakash\Desktop\4.Java\Java Assignment 5\TreeSet>javac ques4.java

C:\Users\Aakash\Desktop\4.Java\Java Assignment 5\TreeSet>java ques4
Schinchan
Perman
Ninja Hattori
Kiteretsu
Doraemon
```

5. Write a Java program to get the first and last elements in a tree set.

```
import java.util.*;




class ques5

{

        public static void main(String args[])

        {

                TreeSet<String> ts = new TreeSet<String>();



                ts.add("Schinchan");

                ts.add("Kiteretsu");



                ts.add("Doraemon");
```

```
            ts.add("Perman");


            ts.add("Ninja Hattori");


            System.out.println(ts.first());

            System.out.println(ts.last());


        }

}
```

```
C:\Users\Aakash\Desktop\4.Java\Java Assignment 5\TreeSet>java ques5
Doraemon
Schinchan
```

6. Write a Java program to clone a tree set list to another tree set.

```
import java.util.*;

class ques6

{

        public static void main(String args[])

        {

            TreeSet<String> ts = new TreeSet<String>();


            ts.add("Schinchan");

            ts.add("Kiteretsu");
```

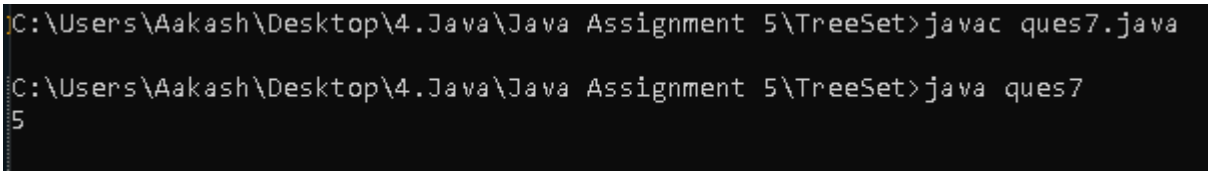
```
            ts.add("Doraemon");

            ts.add("Perman");

            ts.add("Ninja Hattori");

            System.out.println(ts);

            TreeSet<String> ts2 = new TreeSet<>();

            ts2 = (TreeSet)ts.clone();

            System.out.println("Clone : " + ts2);


        }

}
```

```
C:\Users\Aakash\Desktop\4.Java\Java Assignment 5\TreeSet>java ques6
[Doraemon, Kiteretsu, Ninja Hattori, Perman, Schinchan]
Clone : [Doraemon, Kiteretsu, Ninja Hattori, Perman, Schinchan]
```

7. Write a Java program to get the number of elements in a tree set.

```
import java.util.*;

class ques7

{

        public static void main(String args[])

        {

            TreeSet<String> ts = new TreeSet<String>();

            ts.add("Schinchan");
```

```
                ts.add("Kiteretsu");

                ts.add("Doraemon");

                ts.add("Perman");

                ts.add("Ninja Hattori");

                System.out.println(ts.size());

        }

}
```



8. Write a Java program to compare two tree sets.

```
import java.util.*;

class ques8

{

        public static void main(String args[])

        {

                TreeSet<String> ts1 = new TreeSet<>();

                ts1.add("A");

                ts1.add("B");

                ts1.add("C");
```

```
                TreeSet<String> ts2 = new TreeSet<>();

                ts2.add("D");

                ts2.add("B");

                ts2.add("C");

                for(String s : ts2)

                {

                        System.out.print(ts1 + " has " + s);

                        System.out.println(ts1.contains(s) ? " Yes" : " No");

                }

        }

}
```

```
C:\Users\Aakash\Desktop\4.Java\Java Assignment 5\TreeSet>javac ques8.ja

C:\Users\Aakash\Desktop\4.Java\Java Assignment 5\TreeSet>java ques8
[A, B, C] has B Yes
[A, B, C] has C Yes
[A, B, C] has D No
```

9. Write a Java program to find the numbers less than 7 in a tree set.

```
import java.util.*;



class ques9

{

        public static void main(String args[])
```

```
	{
		TreeSet<Integer> ts = new TreeSet<>();
		ts.add(23);
		ts.add(56);
		ts.add(12);
		ts.add(14);
		ts.add(84);
		ts.add(45);
		ts.add(70);
		ts.add(2);
		ts.add(4);
		ts.add(5);
		for(Integer i : ts)
		{
			if(i<7)
				System.out.println(i);
		}

	}
}
```

```
C:\Users\Aakash\Desktop\4.Java\Java Assignment 5\TreeSet>javac ques9.java

C:\Users\Aakash\Desktop\4.Java\Java Assignment 5\TreeSet>java ques9
2
4
5
```

10. Write a Java program to get the element in a tree set which is greater than or equal to the given element.

```
import java.util.*;

class ques10

{

	public static void main(String args[])

	{

		TreeSet<Integer> ts = new TreeSet<>();

		ts.add(23);

		ts.add(56);

		ts.add(12);

		ts.add(14);

		ts.add(84);

		ts.add(45);

		ts.add(70);

		ts.add(2);

		ts.add(4);

		ts.add(5);
```

```
        Scanner sc = new Scanner(System.in);
        int x = sc.nextInt();
        System.out.println("Number greater than or equal to x are:");
        System.out.println(ts.ceiling(x));
    }
}
```

```
C:\Users\Aakash\Desktop\4.Java\Java Assignment 5\TreeSet>java ques10
46
Number greater than or equal to x are:
56
```

11. Write a Java program to get the element in a tree set which is less than or equal to the given element.

```
import java.util.*;

class ques11
{
    public static void main(String args[])
    {
        TreeSet<Integer> ts = new TreeSet<>();
        ts.add(23);
        ts.add(56);
```

```
        ts.add(12);

        ts.add(14);

        ts.add(84);

        ts.add(45);

        ts.add(70);

        ts.add(2);

        ts.add(4);

        ts.add(5);



        Scanner sc = new Scanner(System.in);

        int x = sc.nextInt();



        System.out.println("Number Less than or equal to x are:");

        System.out.println(ts.floor(x));



    }

}
```

```
C:\Users\Aakash\Desktop\4.Java\Java Assignment 5\TreeSet>java ques1
76
Number Less than or equal to x are:
70
```

12. Write a Java program to get the element in a tree set which is strictly greater than or equal to the given element.

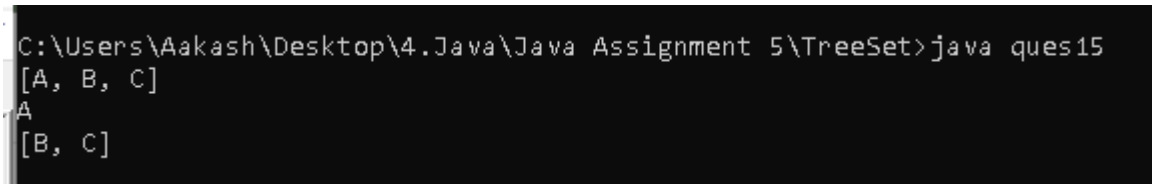
Similar question as above

13. Write a Java program to get an element in a tree set which is strictly less than the given element.

Similar question as above

14. Write a Java program to retrieve and remove the first element of a tree set.

```
import java.util.*;

class ques14

{

	public static void main(String args[])

	{

		TreeSet<String> ts1 = new TreeSet<>();

		ts1.add("A");

		ts1.add("B");

		ts1.add("C");



		System.out.println(ts1);

		System.out.println(ts1.pollFirst());

		System.out.println(ts1);

	}



}
```



15. Write a Java program to retrieve and remove the last element of a tree set.

```
import java.util.*;



class ques15

{

	public static void main(String args[])

	{

		TreeSet<String> ts1 = new TreeSet<>();

		ts1.add("A");

		ts1.add("B");

		ts1.add("C");



		System.out.println(ts1);

		//System.out.println(ts1.pollFirst());

		System.out.println(ts1.pollLast());

		System.out.println(ts1);

	}
```

}

```
C:\Users\Aakash\Desktop\4.Java\Java Assignment 5\TreeSet>java ques15
[A, B, C]
C
[A, B]

C:\Users\Aakash\Desktop\4.Java\Java Assignment 5\TreeSet>
```

16. Write a Java program to remove a given element from a tree set.

```
import java.util.*;

class ques16

{

	public static void main(String args[])

	{

		TreeSet<String> ts1 = new TreeSet<>();

		ts1.add("A");

		ts1.add("B");

		ts1.add("C");



		System.out.println(ts1);

		System.out.println(ts1.remove("A"));

		System.out.println(ts1);

	}

}
```

```
C:\Users\Aakash\Desktop\4.Java\Java Assignment 5\TreeSet>java ques16
[A, B, C]
true
[B, C]

C:\Users\Aakash\Desktop\4.Java\Java Assignment 5\TreeSet>
```