Java Collection: HashSet Exercises

1. Write a Java program to append the specified element to the end of a hash set.

```
import java.util.*;

class ques1

{

	public static void main(String args[])

	{

		HashSet<String> hs = new HashSet<>();



		hs.add("Doraemon");

		hs.add("Schinchan");

		hs.add("Kiteretsu");

		hs.add("Oggy");

		hs.add("Bandu Budbak");



		System.out.println(hs);

	}

}
```

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

C:\Users\Aakash\Desktop\4.Java\Java Assignment 5\HashSet>java ques1
[Doraemon, Bandu Budbak, Schinchan, Kiteretsu, Oggy]
```

2. Write a Java program to iterate through all elements in a hash list.

```
import java.util.*;

class ques2

{

	public static void main(String args[])

	{

		HashSet<String> hs = new HashSet<>();



		hs.add("Data");

		hs.add("Package");

		hs.add("Compiler");

		hs.add("JVM");

		Iterator i = hs.iterator();

		while(i.hasNext())

		{

			System.out.println(i.next());

		}

	}

}
```

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

C:\Users\Aakash\Desktop\4.Java\Java Assignment 5\HashSet>java ques2
JVM
Compiler
Data
Package
```

3. Write a Java program to get the number of elements in a hash set.

```
import java.util.*;

class ques3

{

	public static void main(String args[])

	{

		HashSet<String> hs = new HashSet<>();



		hs.add("Data");

		hs.add("Package");

		hs.add("Compiler");

		hs.add("JVM");

		System.out.println("Length of Set : " + hs.size());

	}

}
```

```
C:\Users\Aakash\Desktop\4.Java\Java Assignment 5\HashSet>javac ques3.java

C:\Users\Aakash\Desktop\4.Java\Java Assignment 5\HashSet>java ques3
Length of Set : 4
```

4. Write a Java program to empty a hash set.

```
import java.util.*;

class ques4

{

	public static void main(String args[])

	{

		HashSet<String> hs = new HashSet<>();

		hs.add("Data");

		hs.add("Package");

		hs.add("Compiler");

		hs.add("JVM");

		System.out.println(hs);

		hs.removeAll(hs);

		System.out.println(hs);



	}

}
```

```
C:\Users\Aakash\Desktop\4.Java\Java Assignment 5\HashSet>java ques4
[JVM, Compiler, Data, Package]
[]

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

5. Write a Java program to test if a hash set is empty or not.

```
import java.util.*;

class ques5

{

	public static void main(String args[])

	{

		HashSet<String> hs = new HashSet<>();

		hs.add("Data");

		hs.add("Package");

		hs.add("Compiler");

		hs.add("JVM");



		System.out.println(hs);

		hs.removeAll(hs);

		System.out.println("Is my List Empty ? : " + hs.isEmpty());



	}

}
```

```
C:\Users\Aakash\Desktop\4.Java\Java Assignment 5\HashSet>javac ques5.java

C:\Users\Aakash\Desktop\4.Java\Java Assignment 5\HashSet>java ques5
[JVM, Compiler, Data, Package]
Is my List Empty ? : true

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

6. Write a Java program to clone a hash set to another hash set.

```
import java.util.*;

class ques6

{

	public static void main(String args[])

	{

		HashSet hs = new HashSet<>();

		hs.add("Sometimes");

		hs.add("I");

		hs.add("Think");

		hs.add("About");

		hs.add("You");



		System.out.println("Original Set : "+hs);



		HashSet<String> hs2 = new HashSet<>();



		hs2 = (HashSet)hs.clone();
```

```
            System.out.println("Cloned Set : "+hs);

        }

}
```

```
C:\Users\Aakash\Desktop\4.Java\Java Assignment 5\HashSet>javac ques6.java
Note: ques6.java uses unchecked or unsafe operations.
Note: Recompile with -Xlint:unchecked for details.

C:\Users\Aakash\Desktop\4.Java\Java Assignment 5\HashSet>java ques6
Original Set : [Think, Sometimes, I, You, About]
Cloned Set : [Think, Sometimes, I, You, About]
```

7. Write a Java program to convert a hash set to an array.

```
import java.util.*;

class ques7

{

        public static void main(String args[])

        {

                HashSet hs = new HashSet<>();

                hs.add("Sometimes");

                hs.add("I");

                hs.add("Think");

                hs.add("About");

                hs.add("You");
```

```
            System.out.println("Original Set : "+hs);

            HashSet<String> hs2 = new HashSet<>();

            ArrayList<String> ar = new ArrayList<>(hs);

            System.out.println("ArrayList : "+ar);

        }

}
```

```
C:\Users\Aakash\Desktop\4.Java\Java Assignment 5\HashSet>java ques7
Original Set : [Think, Sometimes, I, You, About]
ArrayList : [Think, Sometimes, I, You, About]
```

8. Write a Java program to convert a hash set to a tree set.

```
import java.util.*;



class ques8

{

        public static void main(String args[])

        {

            HashSet hs = new HashSet<>();

            hs.add("Sometimes");

            hs.add("I");

            hs.add("Think");

            hs.add("About");
```

```
            hs.add("You");

            System.out.println("Original Set : "+hs);

            HashSet<String> hs2 = new HashSet<>();

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

            System.out.println("TreeSet : "+ts);




        }

}
```

```
C:\Users\Aakash\Desktop\4.Java\Java Assignment 5\HashSet>java ques8
Original Set : [Think, Sometimes, I, You, About]
TreeSet : [About, I, Sometimes, Think, You]
```

9. Write a Java program to convert a hash set to a List/ArrayList.

Repeated Question

10. Write a Java program to compare two hash sets.

```
import java.util.*;



class ques10

{

        public static void main(String args[])

        {
```

```
HashSet<String> hs = new HashSet<>();


hs.add("Doraemon");

hs.add("Schinchan");

hs.add("Kiteretsu");

hs.add("Oggy");

hs.add("Bandu Budbak");


System.out.println(hs);


HashSet<String> hs2 = new HashSet<>();


hs2.add("Doraemon");

hs2.add("Schinchan");

hs2.add("Kiteretsu");

hs2.add("Oggy");

hs2.add("Blah");


for(String s:hs2)

{

        System.out.println((hs.contains(s) ? "Yes" : "No") + s );
```

```
        }
    }
}
```

```
C:\Users\Aakash\Desktop\4.Java\Java Assignment 5\HashSet>java ques10
[Doraemon, Bandu Budbak, Schinchan, Kiteretsu, Oggy]
YesDoraemon
YesSchinchan
YesKiteretsu
NoBlah
YesOggy
```

11. Write a Java program to compare two sets and retain elements which are the same on both sets.

```
import java.util.*;


class ques11
{
    public static void main(String args[])
    {
        HashSet<String> hs = new HashSet<>();


        hs.add("Doraemon");
        hs.add("Schinchan");
        hs.add("Kiteretsu");
        hs.add("Oggy");
        hs.add("Bandu Budbak");
```

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

            HashSet<String> hs2 = new HashSet<>();

            hs2.add("Doraemon");
            hs2.add("Schinchan");
            hs2.add("Noddy");
            hs2.add("Oggy");
            hs2.add("Blah");

            hs.retainAll(hs2);

            System.out.println(hs);
        }
}
```

```
C:\Users\Aakash\Desktop\4.Java\Java Assignment 5\HashSet>javac ques11.java

C:\Users\Aakash\Desktop\4.Java\Java Assignment 5\HashSet>java ques11
[Doraemon, Bandu Budbak, Schinchan, Kiteretsu, Oggy]
[Doraemon, Schinchan, Oggy]
```

12. Write a Java program to remove all of the elements from a hash set.

```
import java.util.*;

class ques12

{

	public static void main(String args[])

	{

		HashSet hs = new HashSet<>();

		hs.add("Sometimes");

		hs.add("I");

		hs.add("Think");

		hs.add("About");

		hs.add("You");



		System.out.println("Original Set : "+hs);

		hs.removeAll(hs);

		System.out.println("EmptySet : "+hs);

	}

}
```

```
C:\Users\Aakash\Desktop\4.Java\Java Assignment 5\HashSet>java ques12
Original Set : [Think, Sometimes, I, You, About]
EmptySet : []
```