Video Name: Collections

Topics:

- Set
- Map
- do while loop
- iterated for loop

Java Class(es): collections package, SetDemo, MapDemo

Set

- Set is unordered collection, no duplicates.
- Set is an interface - provides standard set of functions like add, clear, contains, etc.
- Must select the implementation (can't instantiate an interface)
- HashSet accessed in order based on hash code
- TreeSet accessed in order, e.g., alphabetical
- To use TreeSet, object being stored must implement Comparable (so order is known)

Typically best to declare an instance variable as Set (rather than a specific implementation). Then it’s possible to change the selected implementation by just changing the line of code that initializes the variable.

```java
private Set<String> animals;
public SetDemo() {
    animals = new TreeSet<String>();
}
```

Map

- Map of key/value pairs
- Should specify type of both the key and the value
- To print the entire collection, must get the list of keys (using keySet) and then use the keys to access the data
- Have both HashMap and TreeMap implementations

Using Hash vs Tree implementation

- If need in order, use Tree
- Hash is usually faster for random access (although balanced tree can also be pretty good)