

Basics of java collection api

readymade ds: "java collection"
aka readymade ds in java
how to use them?
performance consideration?

Collection

List: allow duplicate
LinkedList
Vector
ArrayList
PriorityQueue

Set

HashSet: internally use hashing*
hashing make searching optimal operation
Big O Notation: $O(1)$

neither sorted nor ordered

LinkedHashSet
it maintain the insertion order
TreeSet
put the data into sorted order

Map

HashMap
LinkedHashMap
TreeMap

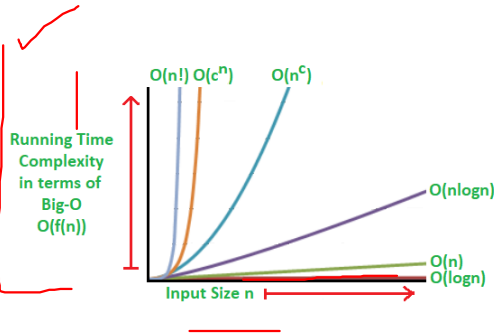
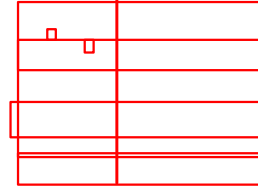
Map is a special collection
K, V
marks of student
name marks

Generics

used with java data structure
it was added in java 5 (2004)

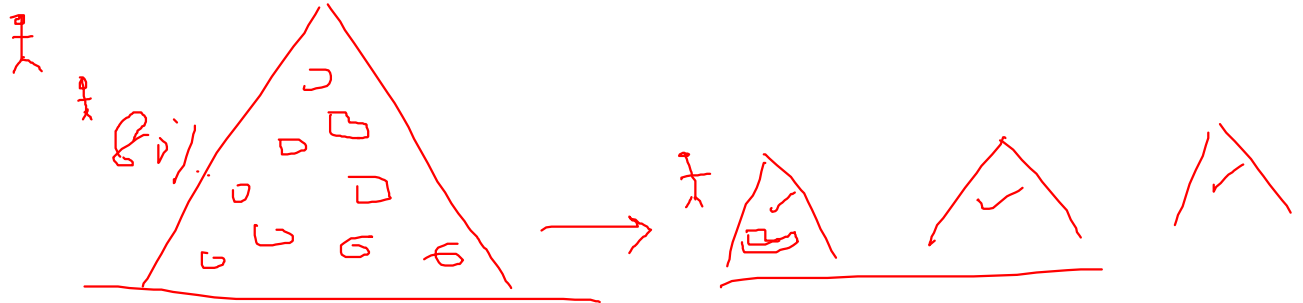
Hashing:

a
all
almost
any
any.
below
could
crow
day
a
all

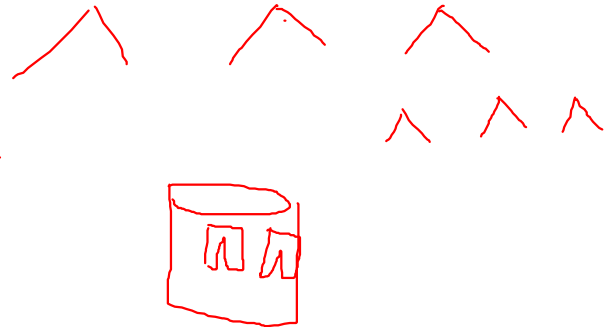
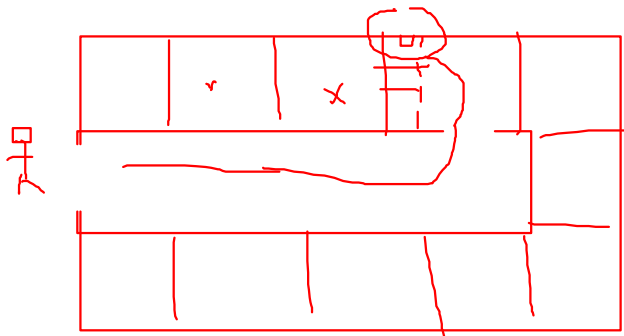


$O(n!), O(c^n), O(n^c)$ - Worst
 $O(n \log n)$ - Bad
 $O(n)$ - Fair
 $O(\log n)$ - Good
 $O(1)$ - Best

Why hashing and what is that
mathematical way to arrange data so that retrieval performance must be best
 $O(1)$



Lee Jeans with 36 w



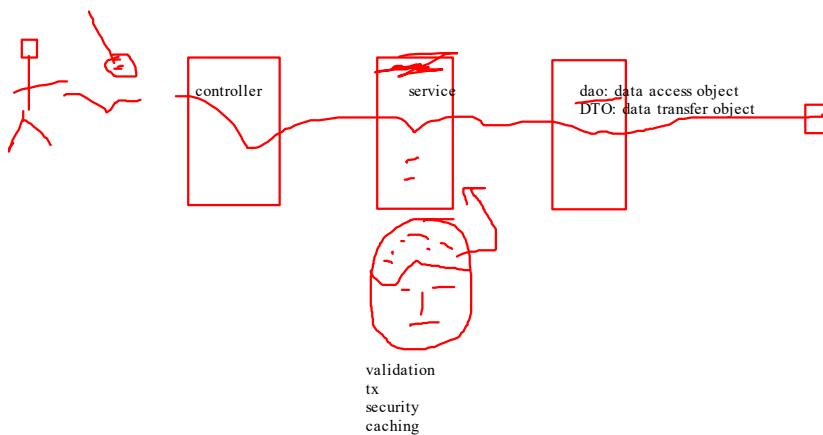
java Object:

equals: if 2 objects are eq they should be from the same bucket

hashcode: if two objects have same hashcode they may be same or not

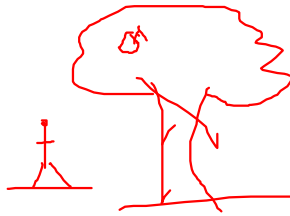
DTO

hashing is a process to divide data into the buckets for



```
interface Cookable {  
    void cook();  
}
```

```
public class C_AnonymousInnerClass {  
    public static void main(String[] args) {  
        Cookable c = new Cookable() {  
            @Override  
            public void cook() {  
                System.out.println("street food");  
            }  
        };  
        Cookable c2 = new Cookable() {  
            @Override  
            public void cook() {  
                System.out.println("street food");  
            }  
        };  
    }  
}
```



hey java cookable is interface
take it and implement it into a class
i dont care about the name of that class
just give me single object of that class