Page 1.

1. What is a skip list?

A skip list is a data structure that uses probability and consists of multiple layers of linked lists where each layer skips over a subset of elements allowing for faster traversal. Skip lists are very efficient for insertion, deletion and searching operations. Each level of the skip list contains fewer and fewer elements as some of the elements on the list are skipped therefore faster traversal each layer.

2. What is a collection, conceptually?

A collection is a group of objects treated like a single structure. Collections are cool because you can do many operations like storing, retrieving, and iterating objects efficiently. Collections can be in many forms like: lists, sets, or maps depending on their purpose.

3. What is a collection in Java, architecturally?

Collections in java is a framework that gives a standard architecture for dealing with groups of objects or collections. Collections provides standardization for methods like list, queue, and set. Collections is also integrated with the iterable interface which handles better for loops and helps with lookups in data structures.

4. What is a generic in Java?

A generic is sort of like a template that allows you to write code that you can easily transition between data types.This is very good because you don't have to experiment for runtime errors and stuff like that every time you need to perform the operation on a new operation.

5. Considering all of the above, what exactly are you implementing?
Considering everything I will be implementing a skip list as a generic that behaves like something similar built into collections. Basically I am making a custom data structure that I and other people can reference. This data structure will allow for efficient storage and retrieval and will have O(log n) operations.

Steps to completing the project

1. Understanding the project
    a. Review skip lists
    b. Look at an example of collections
    c. Review generics

2. Initial Set Up
    a. Set up the package
    b. Set up the SkipListSet, SkipListSetIterator, and SkipListSetItem classes,

3. Set up the SkipListSet class
    a. Set up the basic format of the data structure
    b. Set up add, remove, contains, and clear functions

4. Create and set up the SkipListSetItem class
    a. initialize payload and links
    b. Develop methods for managing links and to deal with comparisons

5. Build the SkipListSetIterator class
    a. Set up the iterator methods

6. Testing
    a. test the function with the large amounts of data
    b. ensure o(log n) functionality