

Collection classes:

Collection class hierarchy is added in Java version 1.5, all these classes are generic classes.

These classes are divided into 3 categories:-

1. List

Features:

- Duplicates are allowed.
- It is ordered collection.
- Indexing is possible in Vector and ArrayList class, hence random access is possible.

2. Set

Features

- Unique values are allowed.
- It is unordered collection.
- We cannot use indexing, hence random access is not possible.

3. Map

Stream functions (Added in java 1.8)

1. Each stream object can be used only once.
2. Intermediate streams will work only if the terminating API is there. These lazily bound

Intermediate stream functions

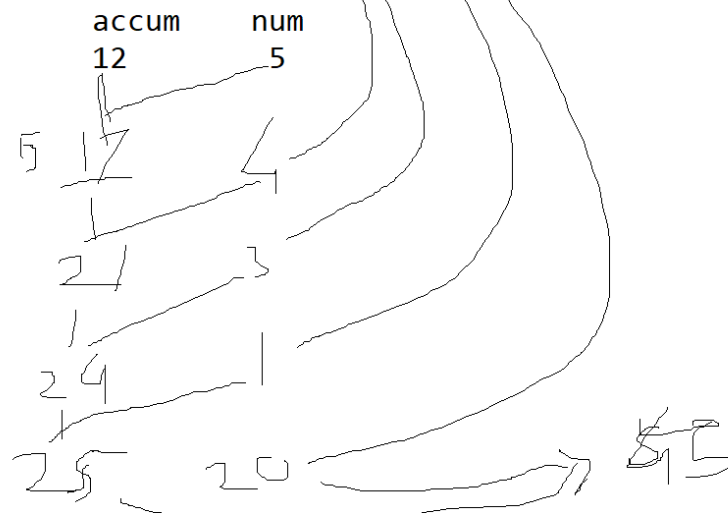
Filter	<code>elst.stream().filter(ob->ob>5).collect(Collectors.toList())</code> -> to get list of values > 5
Map	<code>elst.stream().map(ob->ob*ob).collect(Collectors.toList())</code> → to get list of squares
Reduce	<code>Elst.stream().reduce((accum,num)->accum+num)</code> -> to find addition of all the numbers
flatMap	It will convert 2 D array into 1 D array
max	<code>ob=lst.stream().max(Integer::compareTo);</code>
min	<code>ob=lst.stream().min(Integer::compareTo);</code>

Terminating Stream Function

Collect	To gather all the values and convert into lists or sets
findFirst	It will find first matching value
anyMatch	Will check whether any one of the values in the collection satisfies the condition, if found then returns true, otherwise check all values and if none matches then return false
allMatch	Will check whether all the values in the collection satisfies the condition, it check all values and if all matches then return true, but if it finds the first non matching value then it returns false
ifPresent	It will return true if value found, false otherwise.
forEach	<code>Elst.stream().forEach(System.out::println)</code>

12,5,4,3,1,20

```
lst.stream().reduce((accum,num)->{return accum+num;});
```



map($ob \rightarrow ob * ob$)

16 25 1 9



filter($ob \rightarrow ob > 5$)

13, 19

Accept age from user, check whether age > 18 and age < 60 then it is valid age, else throw checked exception Invalid age, and display error message as "age should be between 18 and 60. Give 3 attempts.