

Collecting Data from Streams to Create Lists and Sets



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Agenda



A collector is a complex object

It is used to reduce a stream

It can be used to gather data in
collections and maps

Called “reduction in a mutable container”



Collecting Data in Collections





The Collector API

- uses the `Stream.collect()`
- that takes a collector

You can create your own collectors

But most of the time you will use Collectors



```
List<Person> people = ...;  
List<Person> peopleFromNewYork = new ArrayList();  
  
people.stream()  
    .filter(p -> p.getCity().equals("New York"))  
    .forEach(p -> peopleFromNewYork.add(p));
```



Adding elements to a list defined outside of the stream

Is a wrong idea!



```
List<Person> people = ...;
```

```
List<Person> peopleFromNewYork =  
    people.stream()  
        .filter(p -> p.getCity().equals("New York"))  
        .collect(Collectors.toList());
```

Getting the list of the people living in New York



```
List<Person> people = ...;
```

```
Set<Person> peopleFromParis =  
    people.stream()  
        .filter(p -> p.getCity().equals("Paris"))  
        .collect(Collectors.toSet());
```

Getting the set of the people living in Paris



```
List<Person> people = ...;
```

```
MyCollection<Person> peopleFromLondon =  
    people.stream()  
        .filter(p -> p.getCity().equals("London"))  
        .collect(Collectors.toCollection(MyCollection::new));
```

Getting the people living in London in a custom collection




```
List<Person> people = ...;
```

```
String names =  
    people.stream()  
        .filter(p -> p.getCity().equals("San Francisco"))  
        .map(p -> p.getName())  
        .collect(Collectors.joining(", "));
```

Joining the names of the people from San Francisco

In a single String separated by commas



Demo



Let us write some code!

Let us gather our data in lists and sets

And sort it at the same time



Module Wrap Up



What did you learn?

How to collect a stream!

In a Collection, a List or a Set

In an Array (not a collector)

In a String

