

# Java Collections Framework

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## What is Collections Framework ?

The Java *collections framework* standardizes the way in which groups of objects are handled by your programs.

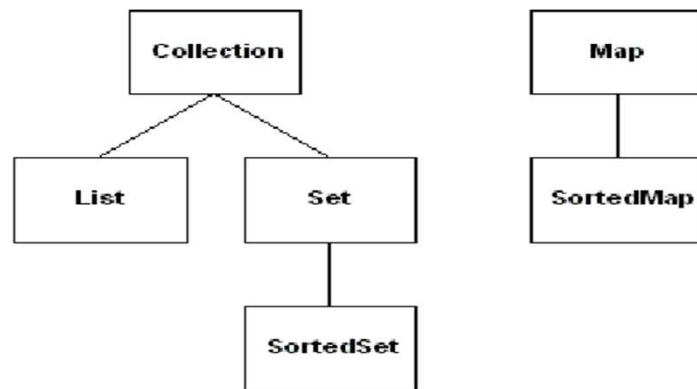
It is a well-designed set of interfaces and classes for storing and manipulating groups of data as a single unit, a *collection*.

The framework provides a convenient API to many of the abstract data types familiar from computer science data structure curriculum: maps, sets, lists, trees, arrays, hashtables, and other collections.

Because of their object-oriented design, the Java classes in the Collections Framework encapsulate both the data structures and the algorithms associated with these abstractions.

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## Collections Interfaces



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## Collections Interfaces

- The Collection interface is a group of objects, with duplicates allowed.
- The Set interface extends Collection but forbids duplicates.
- The List interface extends Collection, allows duplicates, and introduces positional indexing.
- The Map interface extends neither Set nor Collection. It introduces Key-Value pairs.

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## Classes associated with collection interfaces

Interface	Implementation	Historical
Set	HashSet	
	TreeSet	
List	ArrayList	Vector
	LinkedList	Stack
Map	HashMap	HashTable
	TreeMap	Properties

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## java.text.SimpleDateFormat

SimpleDateFormat is a concrete class for formatting and parsing dates in a locale-sensitive manner. It allows for formatting (date -> text), parsing (text -> date).

e.g.

```
import java.text.SimpleDateFormat;
import java.util.Date;
public class DateDemo {
    public static void main(String[] args) throws ParseException {
        Date now=new Date();
        SimpleDateFormat myformat=new
        SimpleDateFormat("dd/mm/yyyy");
        System.out.println("Date :: "+myformat.format(now));
    }
}
```

## java.text.SimpleDateFormat

Letter	Date or Time Component	Presentation	Examples
G	Era designator	Text	AD
y	Year	Year	1996; 96
M	Month in year	Month	July; Jul; 07
w	Week in year	Number	27
W	Week in month	Number	2
D	Day in year	Number	189
d	Day in month	Number	10
F	Day of week in month	Number	2
E	Day in week	Text	Tuesday; Tue
a	Am/pm marker	Text	PM
H	Hour in day (0-23)	Number	0
k	Hour in day (1-24)	Number	24
K	Hour in am/pm (0-11)	Number	0
h	Hour in am/pm (1-12)	Number	12
m	Minute in hour	Number	30
s	Second in minute	Number	55
S	Millisecond	Number	978