

Function objects are objects that can be passed as objects or called as functions. In some coding languages these function objects are built into the language and are more of a core feature of the language, such as JavaScript. In Java, the use of function objects is less common, but can still be useful in specific cases. One such common case is comparators. A comparator is a function object that's function is to compare two things and return a value. This is useful because you can have a comparator that sorts things in a nonstandard way, and then pass that comparator to let's say a sort function, and the sort function would sort your data with that comparators compare function instead of the standard one. So let's say you wrote a comparator for sorting names in particular way, it would look something like

```
public static Comparator<String> NameComparator = new Comparator<String>() {  
    public int compare(String s1, String s2) {  
        compare code here  
    }  
};
```

You could then sort an array of strings using that comparing method by calling

`Arrays.sort(arrayOfNames, NameComparator);` You can see that `NameComparator` is passed to `sort()` like an object, but in reality `NameComparator` is just a function. Hence function object.

The code above calls the sort method in `Arrays`, but it also tells that method that the type of comparing that you want it to perform is contained in the `Comparator` object `NameComparator`. As you can see with that example, function objects allow you to reuse code for many different purposes as you can modify functions that other functions utilize. (sort utilizes a compare method, and you can specify a different compare method to use). When writing a method, you may want to consider using a function object in that method if you think that a method you use within that method could be modified at a later time to serve another purpose. EX: The `compareTo` method can be written multiple ways, so if you call that method in your code, even if you only write one specific `compareTo` method, you should recognize that it would be highly beneficial to have `compareTo` be a function object so you can change the way things are compared later on.