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|  | **Java object sorting example**  **(Comparable and Comparator)** |
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|  | It will show the use of **java.lang.Comparable** and **java.util.Comparator** to sort a Java object based on its property value. |
| 1. | Sort an Array |
|  | To sort an Array, use the **Arrays.sort()**. |
|  |  |
|  | 1.png |
|  | Output :::-- |
|  | 3.png |
|  |  |
| 2. | Sort an ArrayList |
|  | To sort an ArrayList, use the **Collections.sort()**. |
|  |  |
|  | 4.png |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  | Output :::-- |
|  | 5.png |
|  |  |
| 3. | Sort an object with Comparable |
|  | Lets create a Fruit class: |
|  |  |
|  | 6.png |
|  | 7.png |
|  |  |
|  |  |
|  | To sort it, you may think of **Arrays.sort()** again, see below example : |
|  | 8.png |
|  | 9.png |
|  |  |
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|  | But, what you expect the **Arrays.sort()** will do? You didn’t even mention what to sort in the Fruit class. So, it will hits the error : |
|  | To sort an Object by its property, you have to make the Object implement the **Comparable** interface and override the **compareTo()** method. Lets see the new Fruit class again. |
|  | 10.png |
|  | 11.png |
|  | 12.png |
|  | The new Fruit class implemented the **Comparable** interface, and overrided the **compareTo()** method to compare its quantity property in ascending order. |
|  | The **compareTo()** method is hard to explain, in integer sorting, just remember   1. this.quantity – compareQuantity is ascending order. 2. compareQuantity – this.quantity is descending order.   To understand more about compareTo() method, read this [Comparable documentation](http://java.sun.com/j2se/1.4.2/docs/api/java/lang/Comparable.html). |
|  | Run it again, now the Fruits array is sort by its quantity in ascending order. |
|  | 13.png |
|  |  |
| 4. | Sort an Object with Comparator |
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|  | How about sorting with Fruit’s “fruitName” or “Quantity”? The Comparable interface is only allow to sort a single property. To sort with multiple properties, you need **Comparator**. See the new updated Fruit class again : |
|  |  |
|  | 14.png |
|  | 15.png |
|  | 16.png |
|  | 17.png |
|  | The Fruit class contains a static **FruitNameComparator** method to compare the “fruitName”. Now the Fruit object is able to sort with either “quantity” or “fruitName” property. Run it again. |
|  |  |
|  | 1. Sort Fruit array based on its “fruitName” property in ascending order. |
|  | 18.png |
|  | Output :::-- |
|  | 19.png |
|  |  |
|  | 2. Sort Fruit array based on its “quantity” property in ascending order. |
|  | 20.png |
|  | Output :::-- |
|  | 21.png |
|  |  |