

Sorting Data



Sorting in Java



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by Christine Alvarado, Mia Minnes, and Leo Porter, 2015.

By the end of this video you will be able to...

- Use pre-defined Java method to sort
- Explain the properties of the built-in sort

Selection Sort: Basic Algorithm

For each **position i** from **0** to **length-2**

Find smallest element in "still unsorted"

Swap it to **position i**

Insertion Sort: Basic Algorithm

For each **position i** from **1** to **length-1**

Find correct location of **i th** element relative to first **$i-1$**

Swap successive pairs to get there

```
import java.util.*;
```

```
public class MyBuiltInSortingTest {
```

```
    public static void main (String[] args) {
```

```
        Random random = new Random();
```

```
        List<Integer> numsToSort = new ArrayList() ;
```

```
        for (int i=0; i < 5; i++) {
```

```
            numsToSort.add( random.nextInt(100) );
```

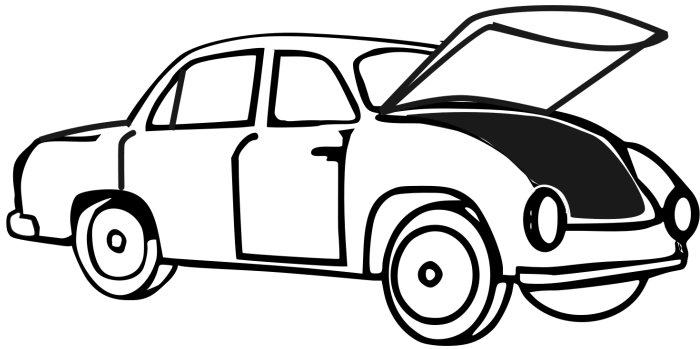
```
        }
```

```
        Collections.sort(numsToSort);
```

```
        System.out.println("New array after builtin sort: " +  
            numsToSort.toString());
```

```
    }
```

```
}
```



Optimized merge sort

- **Fast**
 - in worst case
 - on nearly sorted data
- **Stable**

<https://docs.oracle.com/javase/tutorial/collections/algorithms/>