Tinker Academy

Programming Using Java
(Why Is Sorting Useful?)

Spring 2015

Why Is Sorting Useful?

Sorting Data is useful because it organizes data

```
public class Main {
    public static void main(String[] args) {
        int[] arr = {11,23,15,6,59,7,9,73,92,32,47,39,83,38,72,61,22,48,32,89,42,56,64,98,9,81,32,14,52,32};
    }
}
```

Unsorted Array

What is the smallest number #1, #2, #7?

Why Is Sorting Useful?

Facebook # of Friend Likes

```
public class Main {
    public static void main(String[] args) {
        int[] arr = {11,23,15,6,59,7,9,73,92,32,47,39,83,38,72,61,22,48,32,89,42,56,64,98,9,81,32,14,52,32};
    }
}
```

Unsorted Array

#1 Likes, #2 Likes, #3 Likes?

Why Is Sorting Useful?

Option 1: Scan data each time

```
public class Main {
    public static void main(String[] args) {
        int[] arr = {11,23,15,6,59,7,9,73,92,32,47,39,83,38,72,61,22,48,32,89,42,56,64,98,9,81,32,14,52,32};
    }
}
```

Unsorted Array

Scan over 30 rows, for Facebook more like 1 billion+ (across accounts)

Why Is Sorting Useful?

Option 2: Sort, then scan data each time

```
public class Main {
    public static void main(String[] args) {
        int[] arr = {11,23,15,6,59,7,9,73,92,32,47,39,83,38,72,61,22,48,32,89,42,56,64,98,9,81,32,14,52,32};
    }
}
```

Unsorted Array

Scan over 30 rows ONCE, SORT, then apply sorted data

Why Is Sorting Useful?

Facebook # of Friend Likes After Sorting

```
public class Main {
    public static void main(String[] args) {
        int[] arr = {6,7,9,9,11,14,15,22,23,32,32,32,32,38,39,42,47,48,52,56,59,61,64,72,73,81,83,89,92,98};
    }
}
```

Sorted Array

#1 Likes, #2 Likes, #3 Likes, #7 Likes?