

Lesson 35:

Overloaded Methods

Overloaded Methods

Definition

Overloading is when a program has more than one method with the **same name**.

Overloaded Methods

Example - String method

```
w.substring (4);
```

```
w.substring (2, 5);
```

Both of these methods do the same thing
- return a part of a larger String.

But, they use a different set of parameters.

Overloaded Methods

Overloading - Basic Idea

Each method does the same kind of operation.

Does that operation on different sets of data.

Overloaded Methods

How do you tell the methods apart?

Signature - Number and types of parameters

```
public static int sum(int a[])
```

```
public static int sum (int a, int b)
```

Overloaded Methods

Signature does not include the return type

```
public static int add(int a)
```

```
public static double add(int a)
```

Since the parameters are exactly the same type
Java can't tell these two methods apart.

Overloaded Methods

Now you try it:

Write two overloaded methods `max`.

The first should find the max of two `int` parameters.

The second should find the max of three `int` parameters.

Overloaded Methods

Why would we overload?

We have already used this:

```
System.out.print ( "Howdy" );
```

```
System.out.print (56);
```

More efficient

Overloaded Methods

Polymorphism

Overloading is an example of **polymorphism**

Polymorphism allows values of different data types to be handled using a uniform interface

In English: Lets us have one name to describe many things