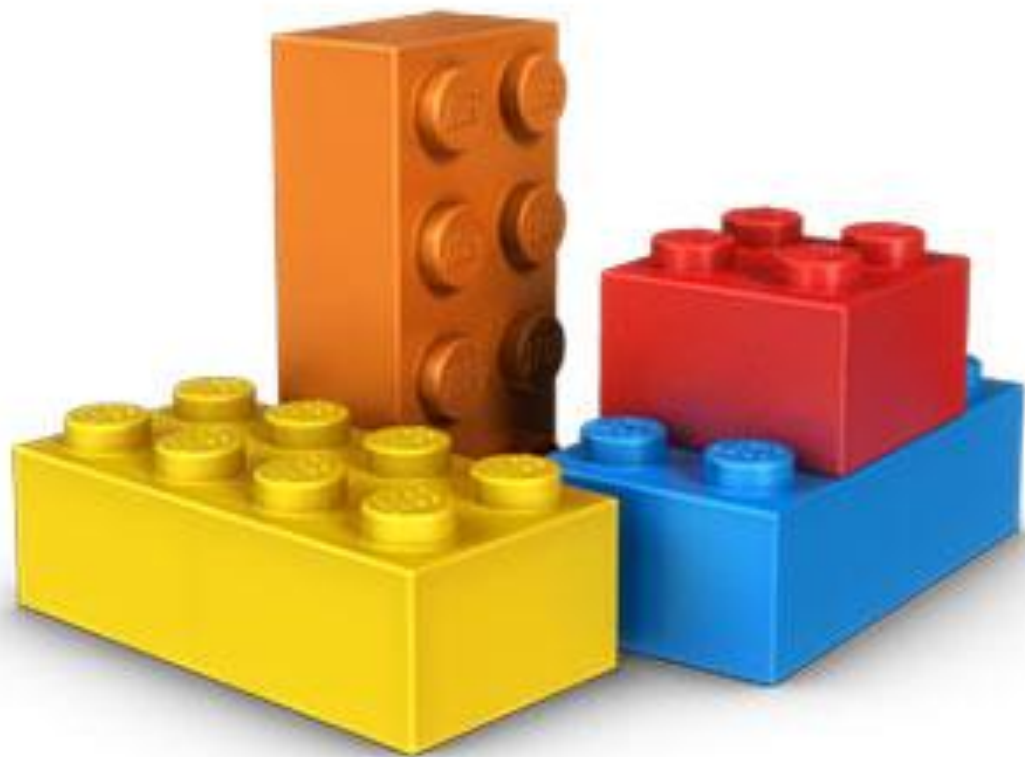


Pieces of a Method

Identification

Method

- A subprogram.
- Used to break a larger program into smaller pieces.





```
public class example
```

```
{
```

```
public static void main (String args[])  
{  
    new example ();  
}
```

Main method

```
public example ()  
{  
    circle ();  
    int r = IO.inputInt ("What is the radius? ");  
    System.out.println ("The area is " + area (r));  
    circle ();  
}
```

Constructor

```
public void circle ()  
{  
    System.out.println ("    **");  
    System.out.println ("    *  *");  
    System.out.println ("    **");  
}
```

Circle Method

```
public double area (int radius)  
{  
    double area = Math.PI * radius * radius;  
    return area;  
}
```

Area Method

```
}
```

Method Signature

- First line of the method
- Very important because it specifies all of the input and output of the method AND it's name

Method Name

- Like a variable name, but for the method
- Method must be named using naming rules
 - No keywords
 - Can't START with a number
 - No spaces
 - No special characters

Method Name

```
public void circle ()
{
    System.out.println ("      **");
    System.out.println ("      *  *");
    System.out.println ("      **");
}

public double area (int radius)
{
    double area = Math.PI * radius * radius;
    return area;
}
```


Return Type

- The value sent OUT of the method.
- The value is sent back using the “return” line
- It must be the same type specified in the method signature.

Return Type

```
public void circle ()  
{  
    System.out.println ("    **");  
    System.out.println ("    *  *");  
    System.out.println ("    **");  
}
```

```
public double area (int radius)  
{  
    double area = Math.PI * radius * radius;  
    return area;  
}
```

Parameter

- A variable sent into a method
- It has a type(possibly a view type) and a name (follows Id's naming rules)
- INPUT of the method

Parameter Names

```
public void circle ()
{
    System.out.println ("      **");
    System.out.println ("      *  *");
    System.out.println ("      **");
}
```

```
public double area (int radius)
{
    double area = Math.PI * radius * radius;
    return area;
}
```

Parameter Types

```
public void circle ()
{
    System.out.println ("      **");
    System.out.println ("      *  *");
    System.out.println ("      **");
}
```

```
public double area (int radius)
{
    double area = Math.PI * radius * radius;
    return area;
}
```

Return Line

```
public void circle ()
{
    System.out.println ("      **");
    System.out.println ("      *  *");
    System.out.println ("      **");
}

public double area (int radius)
{
    double area = Math.PI * radius * radius;
    return area;
}
```

Method Calls

- Outside the method, possibly in the constructor, you use the method name to “activate” the method
- During the method call, you pick the parameters and you catch the returned values

```
public class example
```

```
{
```

```
public static void main (String args[])  
{  
    new example ();  
}
```

Main method

```
public example ()  
{  
    circle ();  
    int r = IO.inputInt ("What is the radius? ");  
    System.out.println ("The area is " + area (r));  
    circle ();  
}
```

Constructor

```
public void circle ()  
{  
    System.out.println ("    **");  
    System.out.println ("    *  *");  
    System.out.println ("    **");  
}
```

Circle Method

```
public double area (int radius)  
{  
    double area = Math.PI * radius * radius;  
    return area;  
}
```

Area Method

```
}
```



```
public example ()
{
    circle ();
    int r = IO.inputInt ("What is the radius? ");
    System.out.println ("The area is " + area (r));
    circle ();
}
```

**

* *

**

What is the radius? 6

The area is 113.09733552923255

**

* *

**

```
public example ()
{
    circle (); ← Method call of circle.
    int r = IO.inputInt ("What is the radius? ");
    System.out.println ("The area is " + area (r));
    circle (); ← Method call of circle.
}
                                     ← Method call of area.
```

```
  **
 *  *
  **
```

What is the radius? 6
The area is 113.09733552923255

```
  **
 *  *
  **
```