



Programming Fundamentals 1

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The **this** Keyword in Java

Why and How we use it

Basic Menu



Shop Menu

- 1) List the Products
- 2) List the current products
- 3) Display average product unit cost
- 4) Display cheapest product
- 5) List products that are more expensive
- 0) Exit

==>> 4

The cheapest product is: Product 2

Press any key to continue...

ShopV2.2 · Menu Driven
Console App



this keyword

❑ Examine a class called **Spot** – it contains many fields

e.g.:

- xCoord, yCoord, diameter

```
class Spot{  
    float xCoord, yCoord;  
    float diameter;  
    int red, green, blue;  
  
    Spot(float xPos, float yPos, float diamtr)  
    {  
        xCoord = xPos;  
        yCoord = yPos;  
        diameter = diamtr;  
    }  
}
```



this keyword

- ❑ One of the Spot constructors takes three parameters:
 - xPos, yPos, diamtr

```
class Spot{  
    float xCoord, yCoord;  
    float diameter;  
    int red, green, blue;  
  
    Spot (float xPos, float yPos, float diamtr)  
    {  
        xCoord = xPos;  
        yCoord = yPos;  
        diameter = diamtr;  
    }  
}
```



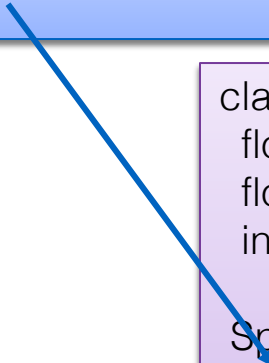
this keyword

- ❑ It would be nice to name the parameters passed into the Spot constructor the **same names as the instance fields**
- ❑ This is called **name overloading**
- ❑ But how will Java know which variable we are referring to?

```
class Spot{  
    float xCoord, yCoord;  
    float diameter;  
    int red, green, blue;  
  
    Spot(float xPos, float yPos, float diamtr)  
    {  
        xCoord = xPos;  
        yCoord = yPos;  
        diameter = diamtr;  
    }  
}
```

this keyword

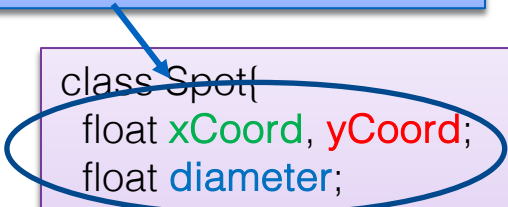
We can use the **this** keyword to distinguish between them



```
class Spot{  
    float xCoord, yCoord;  
    float diameter;  
    int red, green, blue;  
  
    Spot(float xCoord, float yCoord, float diameter)  
    {  
        this.xCoord = xCoord;  
        this.yCoord = yCoord;  
        this.diameter = diameter;  
    }  
}
```

this keyword

this refers to the current object fields.

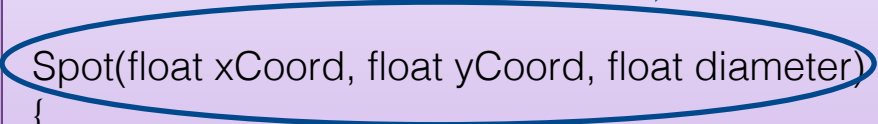
A blue arrow points from the text box above to the 'this' keyword in the code below. The 'this' keyword is circled in blue in the code snippet.

```
class Spot{  
    float xCoord, yCoord;  
    float diameter;  
    int red, green, blue;  
  
    Spot(float xCoord, float yCoord, float diameter)  
    {  
        this.xCoord    = xCoord;  
        this.yCoord    = yCoord;  
        this.diameter  = diameter;  
    }  
}
```

this keyword

These are local fields that are destroyed as soon as the Spot constructor finishes executing

```
class Spot{  
    float xCoord, yCoord;  
    float diameter;  
    int red, green, blue;  
  
    Spot(float xCoord, float yCoord, float diameter)  
    {  
        this.xCoord    = xCoord;  
        this.yCoord    = yCoord;  
        this.diameter  = diameter;  
    }  
}
```

A blue oval highlights the constructor signature `Spot(float xCoord, float yCoord, float diameter)`. A blue arrow points from the text box above to this oval.

this keyword – other examples

To clarify, in the statement:

```
this.x = x;
```

Where **this.x** refers to the object's property / field

and **x** on it's own is the parameter passed in to the method

substitute x for any property/field

This describes **name overloading**

```
void colour (int red, int green, int blue)
{
    this.red = red;
    this.green = green;
    this.blue = blue;
    fill (red, green, blue);
}
```

```
void colour (int gray){
    this.gray = gray;
    fill (this.gray);
}
```

Questions?





References

- ❑ Reas, C. & Fry, B. (2014) Processing – A Programming Handbook for Visual Designers and Artists, 2nd Edition, MIT Press, London.

Thanks.

A simple black-and-white line drawing of a cartoon character with a round head, a smiling face, and a single arm raised in a wave. The character is positioned below the word "Thanks." and is partially enclosed by a horizontal line that underlines the word.