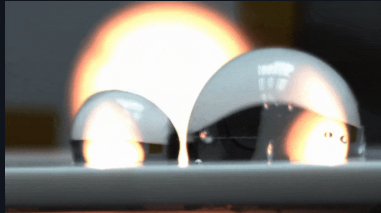


## ■ Intro Object Oriented Programming

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## Agenda

- Concepts
- Data types
- Magic Words?
- Intro P00
  - Scenario
  - Object Oriented Solution
  - Class keyword
  - Objects

### Programming paradigm

1. A high level model to **conceptualize and structure** a computer program implementation

### Implementation

| The process of moving an idea **from concept to reality**

## Data types

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### Primitives

- `byte = 0`
- `short = 0`
- `int = 0`
- `long = 0L`
- `float = 0.0f`
- `double = 0.0d`
- `boolean = false`
- `char = '\u0000'`

### Non-primitives

- `String = null;`
- `int[]`
- `float[]`
- `String[]`

When do we use `new`?

`new`

A Java keyword used to create an instance of a class.

## Magic words?

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What does the keywords in function main mean?

```
1 class Demo {  
2     public static void main(String[] args){  
3         ...  
4     }  
5 }
```

## Scenario

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Our endgoal is to create an object like this:



```
1 <?>[] estuchePlumones = new <?>[4];
```

- What can <?> be?

## Scenario

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```
1 Marker[] estuchePlumones = new Marker[4];
```



What properties (variables) should be in Marker?

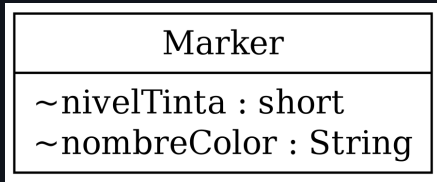
Or asked other way

If Marker was a **database table** which could be it's columns?

## Object Oriented Solution

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We want to bind all our properties (nivelTinta, nombreColor) together as a single entity/object.





## Intro P00

## Object Oriented Solution

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Let's focus on the red section

### Marker

~nivelTinta : short  
~nombreColor : String

- What's our name convention for classes?

```
1 class Marker {  
2     ...  
3 }  
4 class E11IntroPoo{  
5     public static void main (  
6         String[] args  
7     ){...}  
8 }
```

Intro P00

Object Oriented Solution

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Finally let's complete our full class

Marker
~nivelTinta : short ~nombreColor : String

Intro P00

Code up-to-date

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```
1 class Marker {
2     String nombreColor;
3     short nivelTinta;
4 }
5 class E11IntroPoo{
6     public static void main (String[] args){
7         ...
8     }
9 }
```

## Intro P00

### Class keyword

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The `class` keyword allow to create a user-defined data type (just like `int`, `boolean`, `float`...) by giving it's **concrete implementation**.

A template for **creating user-defined objects**.

```
class
```

A type that defines the implementation of a **particular kind of object**.

What was implementation?

## Intro P00

## Objects

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We just **defined the object Marker** in our program.

How do we create a Marker variable?

- Hint 1:

**new**

A Java keyword used to create an instance of a class.

- Hint 2:

```
<type> <nombreVar> = new <type>();
```

Intro P00

Objects

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```
1 class Marker {
2     String nombreColor;
3     short nivelTinta;
4 }
5 class E11IntroPoo {
6     public static void main(String[] args) {
7         Marker marcadorBlanco = new Marker();
8         marcadorBlanco.nombreColor="Blanco";
9         marcadorBlanco.nivelTinta=100;
10    }
11 }
```

Intro P00

Objects

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Let's analyze `marcadorBlanco` in `jdb`!

Intro P00

Objects

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Our endgoal was to create an object like this:



```
1 ...  
2 Marker[] estuchePlumones =  
3     new Marker[4];  
4  
5 estuchePlumones[0] = marcadorBlanco;  
6 ...
```





## References

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<https://www.oracle.com/java/technologies/glossary.html>

[https://object-oriented-python.github.io/3\\_objects.html](https://object-oriented-python.github.io/3_objects.html)

<https://docs.python.org/3/glossary.html>