Intro Object Oriented Programming

Mitsiu Alejandro Carreño Sarabia

Agenda

- Concepts
- Data types
- Magic Words?
- Intro POO
    - 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

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?

_____

What does the keywords in function main mean?

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

Scenario

Our endgoal is to create an object like this:


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

- What can **<?>** be?

Scenario

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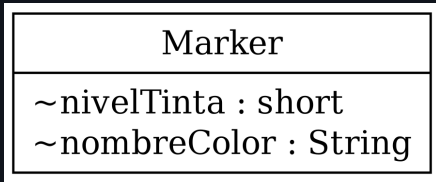

What properties (variables) should be in Marker?

Or asked other way

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

_____

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

Marker
~nivelTinta : short ~nombreColor : String

Object Oriented Solution

Let's focus on the red section

Marker
~nivelTinta : short
~nombreColor : String

- What's our name convetion for classes?

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

Object Oriented Solution

_____

Finally let's complete our full class

Marker
~nivelTinta : short
~nombreColor : String

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

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?

_____

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>();
```

```
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 }
```

_____

Let's analyze marcadorBlanco in jdb!

Our endgoal was to create an object like this:


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

References

_____

https://www.oracle.com/java/technologies/glossary.html
https://object-oriented-python.github.io/3_objects.html
https://docs.python.org/3/glossary.html