OOP Introduction

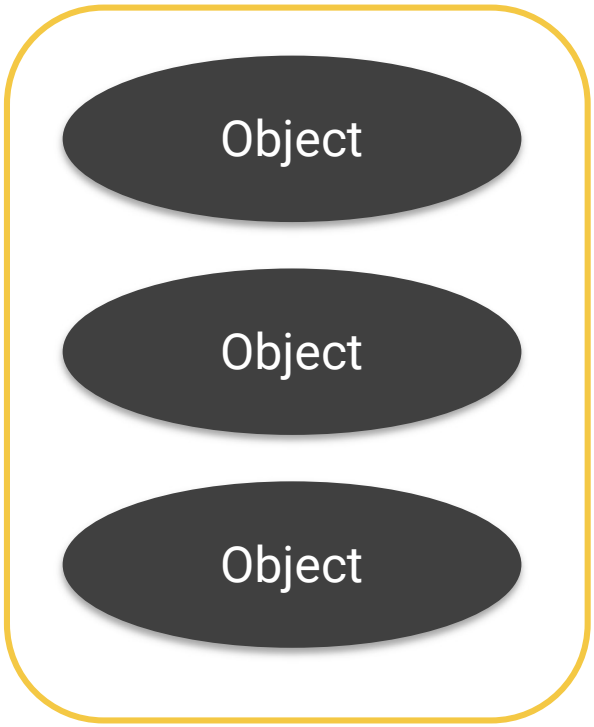
1. What is OOP?
2. Classes and Objects
3. The Main class

What is OOP?

1. What is OOP?

Objected Oriented Programming

(OOP)



Program code

1. What is OOP?

COBOL

C++

Kotlin

Python

Java

Ruby

PHP

Swift

C#

JavaScript

Objective-C

1. What is OOP?

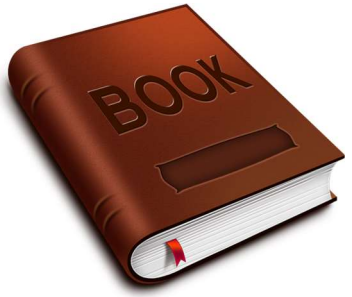
Java code

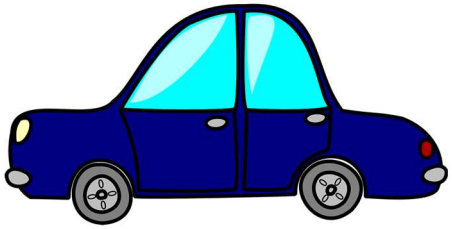
Real life

Book

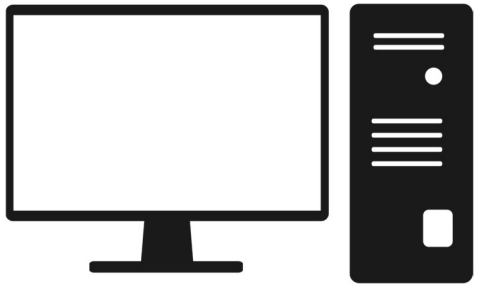
Car

Person





Computer store



Product
name: HP 570 cod: C2376 stock: 10 u price: 699 €

Product
name: Smartphone S8 cod: A1456 stock: 50 u price: 213 €

Product
name: Tablet S12 cod: B5432 stock: 100 u price: 299 €

Computer store

Product

Fields

- name: Smartphone S8
- cod: A1456
- stock: 50 u
- price: 213 €

Renting a car

Car
type: Berlina brand: Ford model: Ka seats: 4 price: 16.99 €/dia rented: true

Car
type: Monovolumen brand: Opel model: Zafira seats: 5 price: 26.99 €/dia rented: false

Car
type: Todoterreno brand: Nissan model: Qashqai seats: 5 price: 34.99 €/dia rented: false

Renting a car

Fields

Methods

Car
type: Monovolumen brand: Opel model: Zafira seats: 5 price: 26.99 €/dia rented: false
rentPrice() setRented()

Variable data types

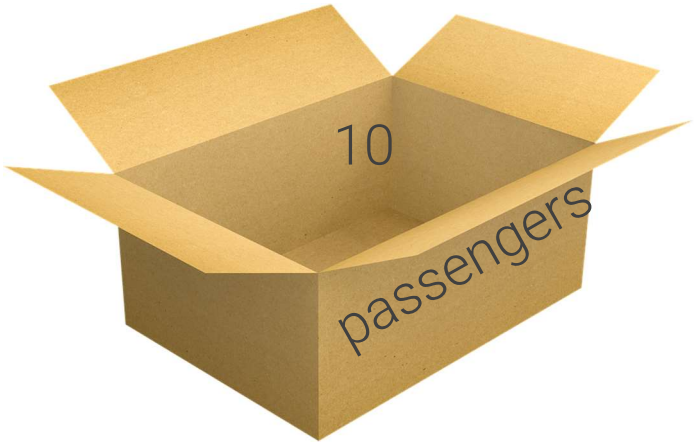
```
int passengers;
double price;

Product pc;
Product tablet;
Car car;
```

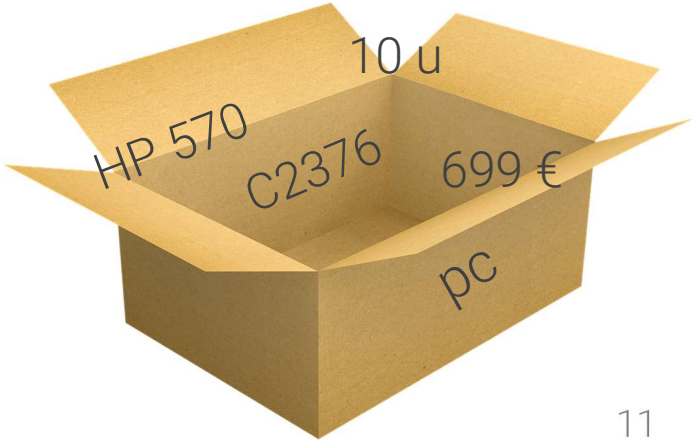
Primitive variables

Object variables

Variable data types



Primitive variables

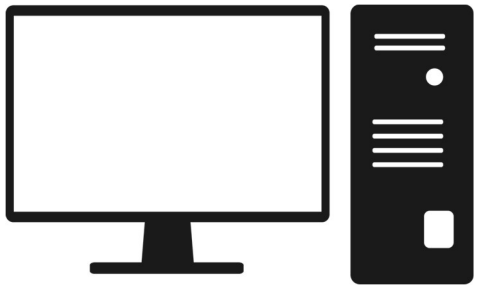


Object variables

1. What is OOP?

- Objetos representan objetos de la vida real
- Atributos (fields): características de un objeto
- Métodos (methods): acciones de un objeto
- POO: Código más organizado, más fácil de entender y más fácil de matener

Classes and Objects



Product

name: HP 570
cod: C2376
stock: 10 u
price: 699 €

Product

name: Tablet S12
Cod: B5432
stock: 100 u
price: 299 €

Car

type: Berlina
brand: Ford
model: Ka
seats: 4
price: 26.99 €/dia
rented: true

```
public class Product{

  String name;
  String cod;
  int stock;
  double price;

  double finalPrice(double vat, double discount){
    return price + price*vat/100 – price*discount/100;
  }
}
```

Fields

Methods

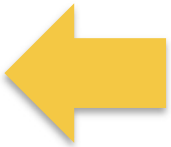
2. Classes and Objects

```
public class Car{

  String type;
  String brand;
  String model;
  int seats;
  double price;
  boolean rented;

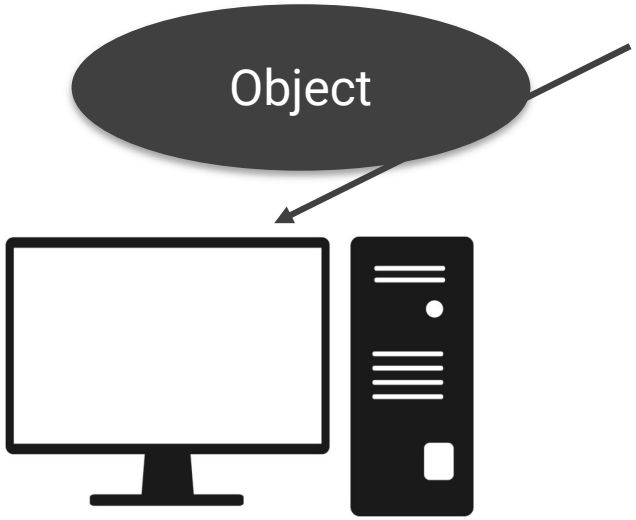
  double rentPrice(int days){
    return days*price;
  }
  void setRented(){
        rented=true;
  }
}
```

Fields



Methods

2. Classes and Objects



class Product

String name
String cod
int stock
double price

pc

name: HP 570
cod: C2376
stock: 10 u
price: 699 €

tablet

name: Tablet S12
Cod: B5432
stock: 100 u
price: 299 €

smatphone

name: Smartphone S8
cod: A1456
stock: 50 u
price: 213 €

impresora

name: HP envy
cod: C1456
stock: 50 u
price: 69.90 €

```
public class Product{

  String name;
  String cod;
  int stock;
  double price;

  double finalPrice(double vat, double discount){
    return price + price*vat/100 – price*discount/100;
  }
}
```

Product.java

The Main class

3. The Main class

```
public class Main{

   public static void main(String[] args) {
      //Start my program here
   }

}
```

3. The Main class

```
public class Main {

   public static void main(String[] args) {
                Main programa = new Main();
        programa.inicio();
   }

   public void inicio() {
                //Start my program here
   }

    //…other methods

}
```

3. The Main class

```
public class Main {

   public static void main(String[] args) {
                Main programa = new Main();
        programa.inicio();
   }

   public void inicio() {
                //Start my program here
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    //…other methods

}
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3. The Main class

```
public class Main {

   public static void main(String[] args) {
                  Main programa = new Main();
        programa.inicio();
   }

   public void inicio() {
                  //Start my program here
   }

    //…other methods

}
```

3. The Main class

```
public class Main {

   public static void main(String[] args) {
                  Main programa = new Main();
        programa.inicio();
   }

   public void inicio() {
                   greeting(“Juan”);
   }

    public void greeting(String name){
                  System.out.println(“Hello ”+name);
    }

}
```

“Si la oportunidad no llama a la puerta, construye una puerta.“

Milton Berle, humorista y actor estadounidense ganador de un Emmy