# Compare object oriented programming in Go with TypeScript

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# Type system in Go

## Basic types

- string
- bool
- int8, uint8, byte, int16, uint16, int32, rune, uint32, int64, unit64, int, uint
- float32, float64
- complex64, complex128

## Composite types

- pointer
- struct
- function
- array, slice, map
- channel
- interface

# Type system in TypeScript

## Basic types

- boolean
- number
- string
- null
- undefined

## Composite types

- array, tuple, enum
- any
- object
- function
- interface

# Class model in Go

```
type dog struct {
    name string
    breed string
    weight float32
    age uint8
}

func (d dog) walk(){
    fmt.Printf("Dog %s walks. \n", d.name)
}

func (d *dog) addAge(){
    d.age++
    fmt.Printf(
    "Hurray! It`s %s's birthday. He/She is %v years
    old now.",
    d.name,
    d.age)
}
```

# Class model in Go

```
func NewDog(
    name string,
    breed string,
    weight float32,
    age uint8) *dog {
            dog := new(dog)
            dog.name = name
            dog.breed = breed
            dog.weight = weight
            dog.age = age
            return dog
}


// Create instance
digga := NewDog("Digga", "German Shepherd", 44.6, 4)
```

# Class model in TypeScript

```
class Dog {
    private name: string;
    private breed: string;
    private weight: number;
    private age: number;

    public walk(){
        console.log("Dog " + this.name + " walks.");
    }

    public addAge(){
          this.age++;
          console.log(
          "Hurray! It`s " + this.name +
          "'s birthday. He/She is " + this.age +
          " years old now.");
    }

}
```

# Class model in TypeScript

```
constructor(gender: string,
            name: string,
            breed: string,
            weight: number,
            age: number) {
                this.name = name;
                this.breed = breed;
                this.weight = weight;
                this.age = age;
}



// Create instance
var jax = new Dog("Jax", "Australian Shepherd", 24.6, 1);
```

# Inheritance in Go

```
type animal struct {
    kind string
    gender string
}

type dog struct {
    animal
    name string
    breed string
    weight float32
    age uint8
}

// Create instance
digga := dog{
    animal: animal{kind: "Dog", gender: "male"},
    name: "Digga",
    breed: "German Shepherd",
    weight: 44.3,
    age: 4}
```

# Inheritance in TypeScript

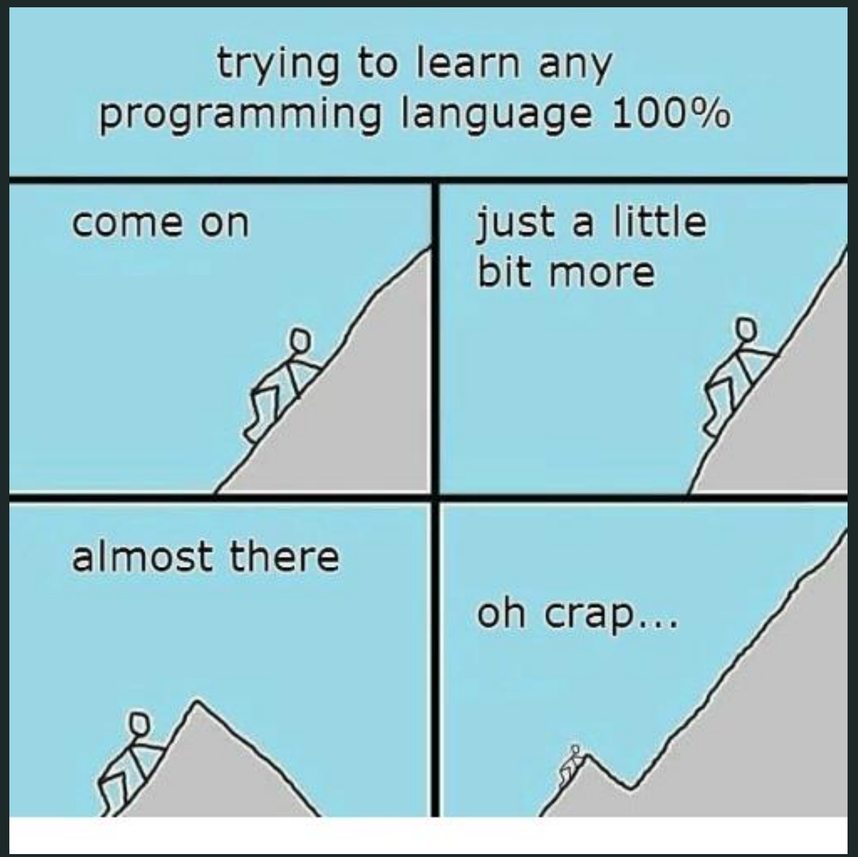
```
class Animal {
     private kind: string;
     private gender: string;

     constructor(kind: string, gender: string) {
          this.kind = kind;
          this.gender = gender;
     }
}

class Dog extends Animal {
     private name: string;
     private breed: string;
     private weight: number;
     private age: number;

     constructor(gender: string,
                 name: string,
                 breed: string,
                 weight: number,
                 age: number) {
                      super("Dog", gender);
                      this.name = name;
                      this.breed = breed;
                      this.weight = weight;
                      this.age = age;
     }
}
```

# Polymorphism in Go

```
type movable interface {
    walk()
}

type animal struct {
    kind string
    gender string
}

func (a animal) walk(){
    fmt.Println("Animal walks.");
}

type dog struct {
    animal
    name string
    breed string
    weight float32
    age uint8
}

func (d dog) walk(){
    fmt.Printf("Dog %s walks. \n", d.name)
}

func foo(m movable){
    m.walk()
}
```

# Polymorphism in TypeScript

```
class Animal implements moveable {
     private kind: string;
     private gender: string;

     public walk(): any{
          console.log("Animal walks.");
     }

     // constructor
}

class Dog implements moveable {
     private name: string;
     private breed: string;
     private weight: number;
     private age: number;

     public walk(): any{
          console.log("Dog " + this.name + " walks.");
     }

     // constructor
}

interface moveable {
     walk(): any;
}

function foo(m: moveable){
     m.walk();
}
```


trying to learn any programming language 100%
come on
just a little bit more
almost there
oh crap...