DieHandle new vs. self class new

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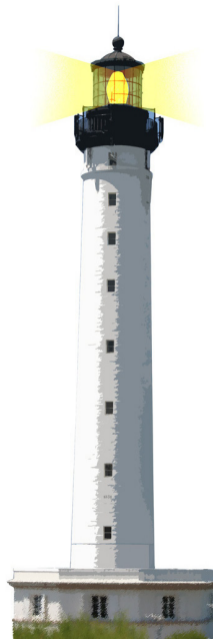
From the Exercise

To support

```
(DieHandle new add: (Die faces: 4); yourself)
  + (DieHandle new add: (Die faces: 6); yourself)
```

We defined + as

```
DieHandle >> + aDieHandle
  | handle |
  handle := DieHandle new.
  self dice do: [ :each | handle addDie: each ].
  aDieHandle dice do: [ :each | handle addDie: each ].
  ^ handle
```

What Is The Difference...

Between

```
DieHandle >> + aDieHandle
  | handle |
  handle := DieHandle new.
```

And

```
DieHandle >> + aDieHandle
  | handle |
  handle := self class new.
```

Let us see....

What If We Create A New Subclass

```
DieHandle subclass: MemoDieHandle
  ....
```

```
(MemoDieHandle new add: (Die faces: 4); yourself)
  + (MemoDieHandle new add: (Die faces: 6); yourself)
> aDiceHandle
```

We get a DieHandle instance back and not a MemoDieHandle instance!!!

Solution 1: Creating a Hook

```
DieHandle >> + aDieHandle
 | handle |
 handle := self handleClass new.
 self dice do: [ :each | handle addDie: each ].
 aDieHandle dice do: [ :each | handle addDie: each ].
 ^ handle
```

```
DieHandle >> handleClass
 ^ DieHandle
```

A subclass may redefine handleClass

```
MemoDieHandle >> handleClass
 ^ MemoDieHandle
```

Solution 1: Creating a Hook

```
(MemoDieHandle new add: (Die faces: 4); yourself)
  + (MemoDieHandle new add: (Die faces: 6); yourself)
> aMemoDieHandle
```

We get an instance of the subclass!

But We Can Do Better!

Let us see

- In each subclass we should redefine the hook method handleClass
- This is tedious

Solution 2

```
DieHandle >> + aDieHandle
  | handle |
  handle := self class new.
  self dice do: [ :each | handle addDie: each ].
  aDieHandle dice do: [ :each | handle addDie: each ].
  ^ handle
```

- self class always returns the class of the receiver
- We get instances of the same kind of the receiver

Conclusion

If we define a subclass of DieHandle, and send the message + to an instance

- With DieHandle new, + does not return an instance of the subclass but of DieHandle

- With self class new, + returns an instance of the receiver: an instance of a potential subclass

Resources

- Pharo mooc - Videos W6S03: `http://mooc.pharo.org`
- Pharo by Example: `http://books.pharo.org`

A course by Stéphane Ducasse
`http://stephane.ducasse.free.fr`

Reusing some parts of the Pharo Mooc by

Damien Cassou, Stéphane Ducasse, Luc Fabresse
`http://mooc.pharo.org`