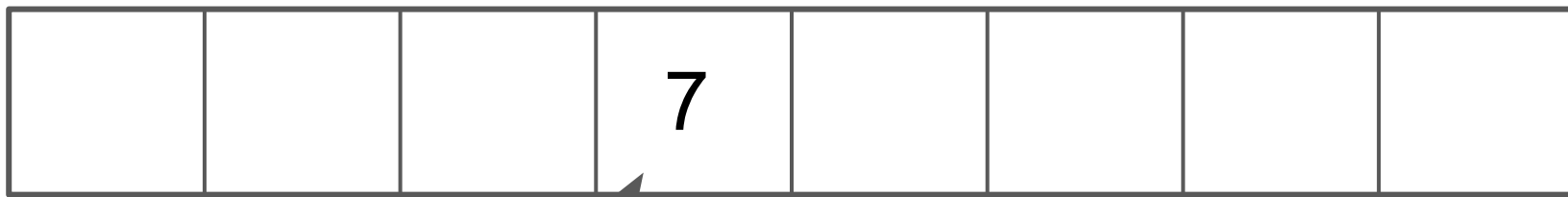


W3D2

References

References Part 1: Integers (immutable)

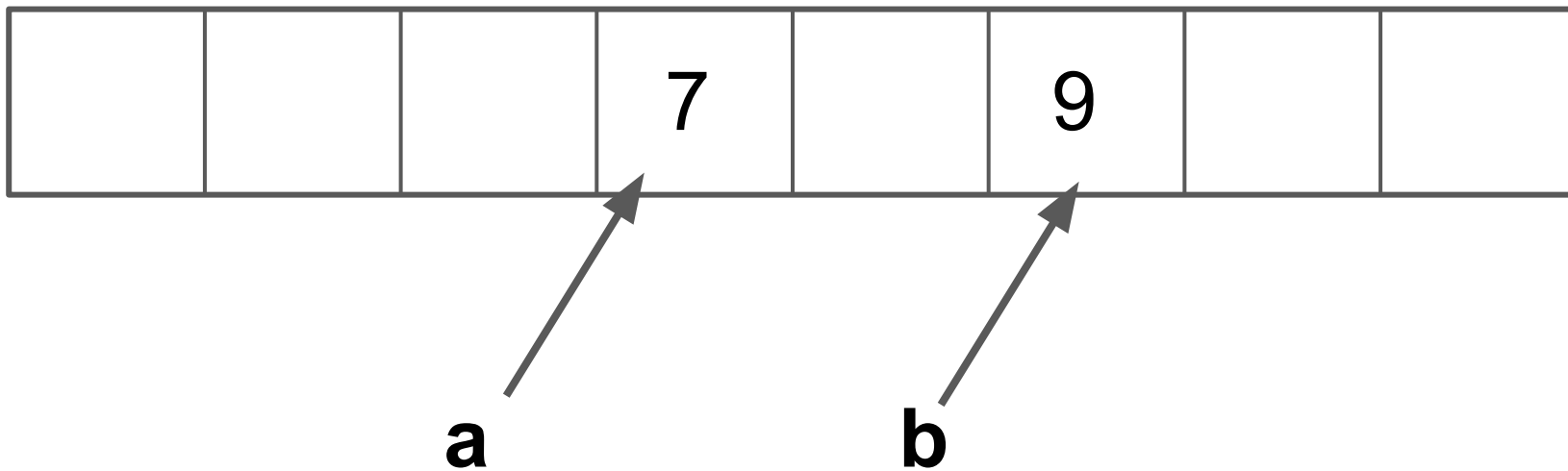
--	--	--	--	--	--	--	--



a

A dark gray arrow originates from the bold letter 'a' and points diagonally upwards and to the right, ending at the center of the fourth cell of the array, which contains the number 7.

1) $a = 7$



- 1) $a = 7$
- 2) $b = 9$

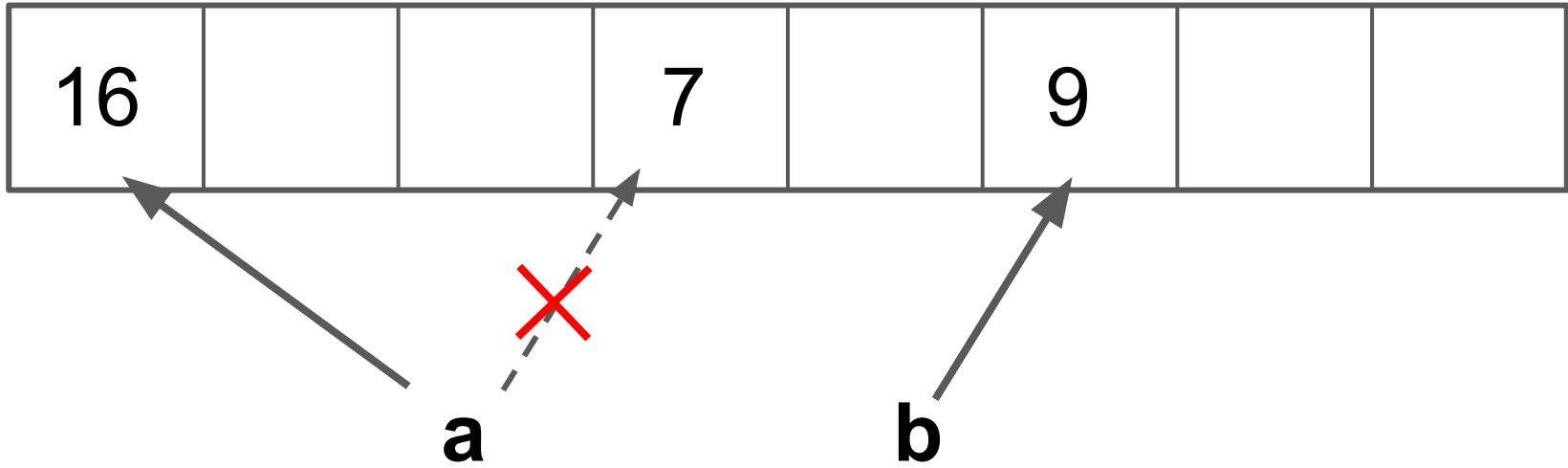
			7		9		
--	--	--	---	--	---	--	--

? ? ? ? ? ?

a

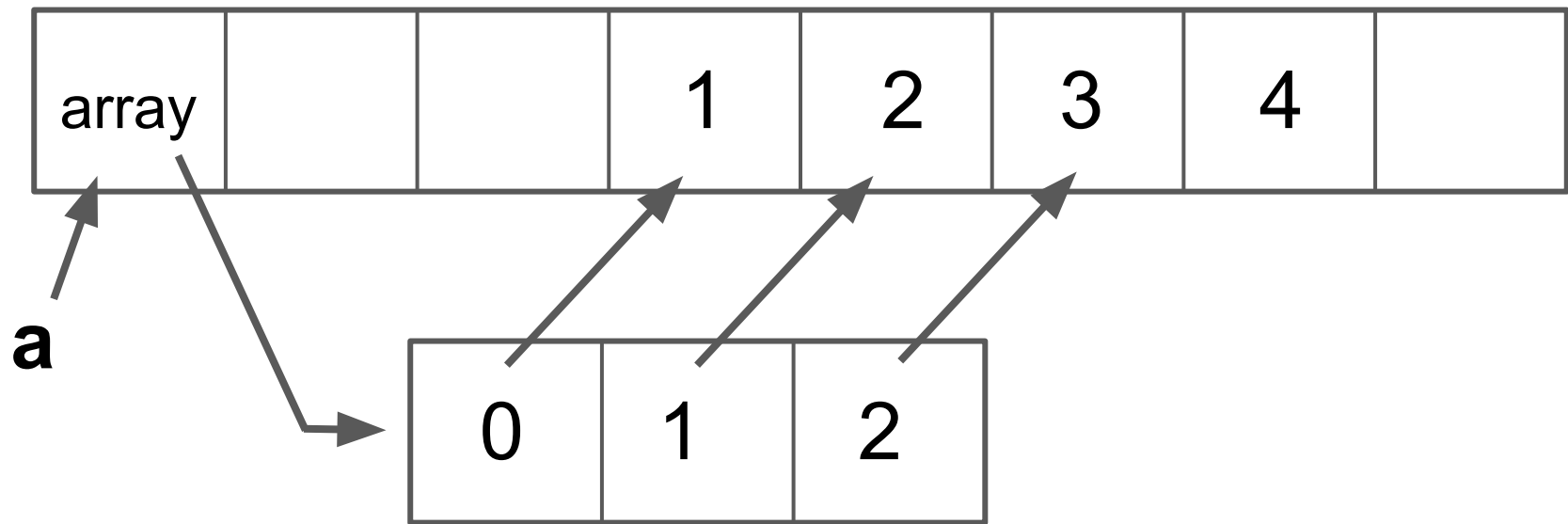
b

- 1) $a = 7$
- 2) $b = 9$
- 3) $a += b$



- 1) $a = 7$
- 2) $b = 9$
- 3) $a += b \Rightarrow a = a + b \Rightarrow 16$

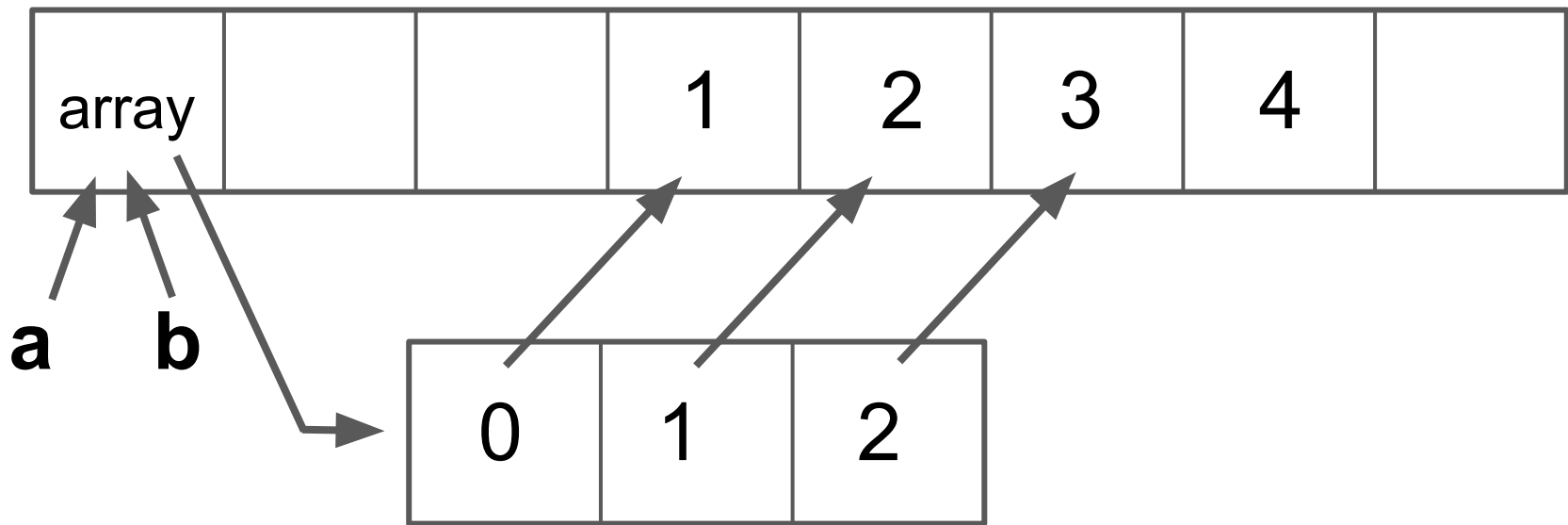
References Part 2: Arrays (mutable)



1) `a = [1, 2, 3]`

In Pry:

```
a = [1,2,3]  
a.object_id  
a[0].object_id  
a[0].object_id == 1.object_id
```



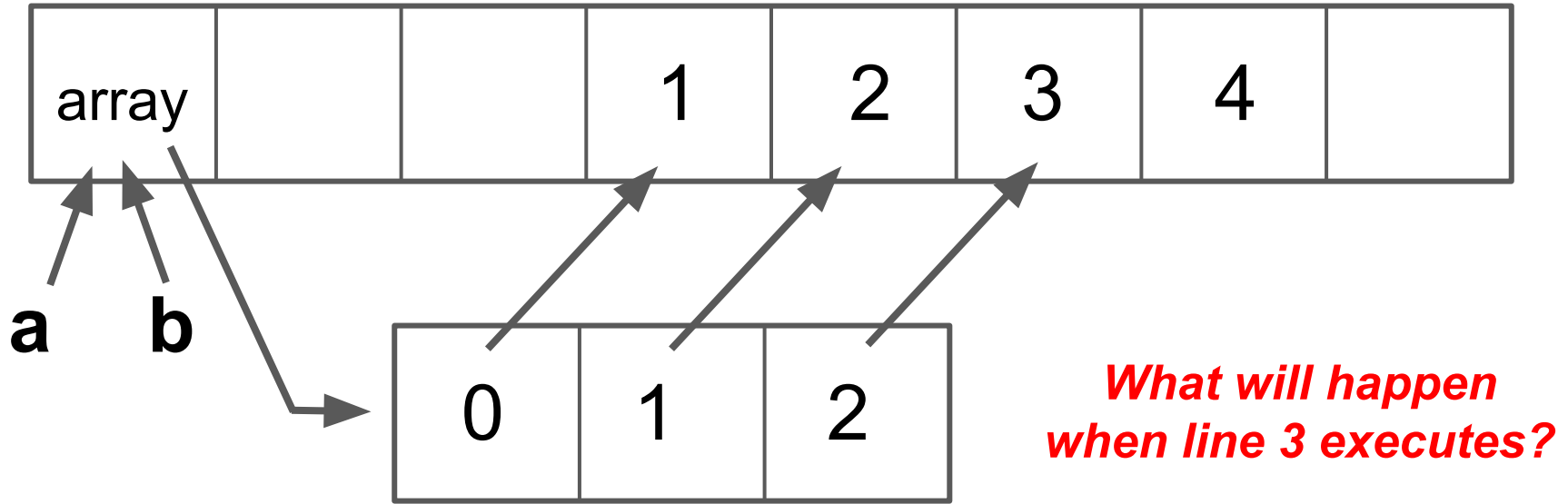
- 1) $a = [1, 2, 3]$
- 2) $b = a$

In Pry:

```
b = a
```

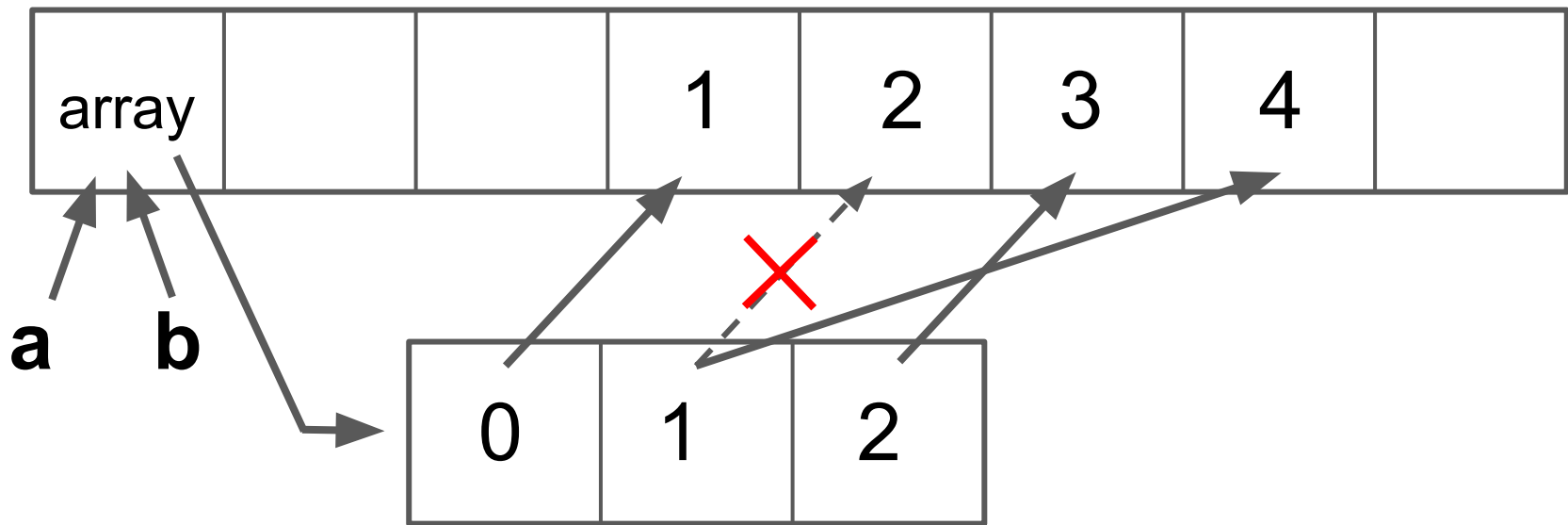
```
b.object_id
```

```
a.object_id == b.object_id
```



1) `a = [1, 2, 3]`
2) `b = a`

3) `b[1] = 4`



1) $a = [1, 2, 3]$
2) $b = a$

3) $b[1] = 4$

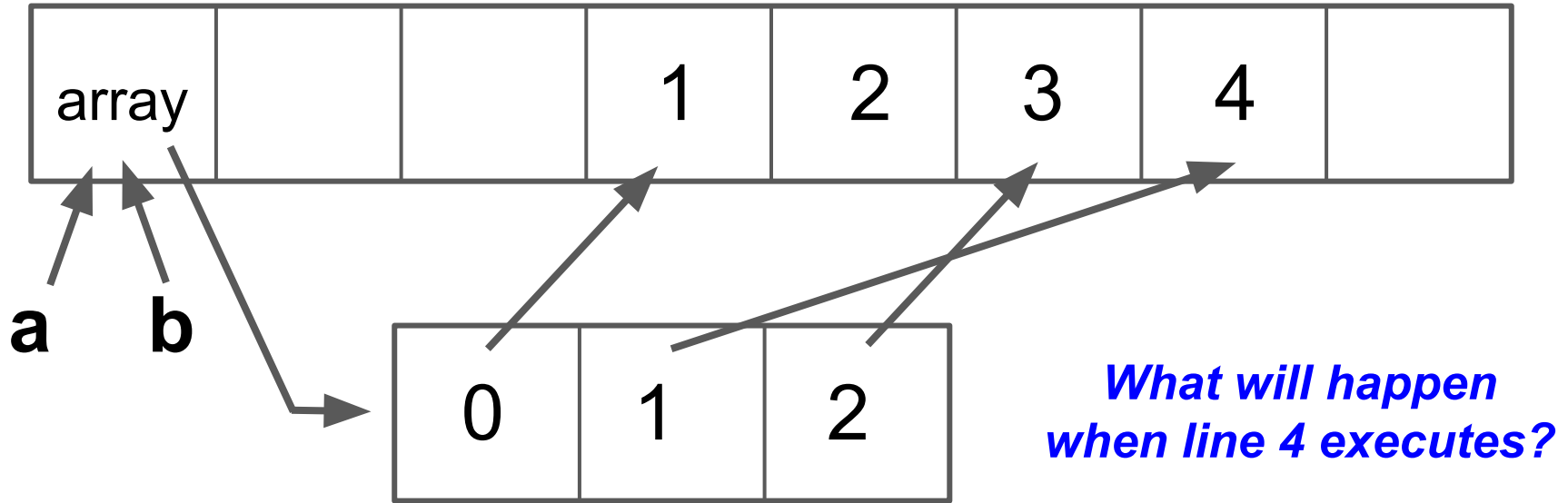
In Pry:

```
a[1] = 4
```

```
a
```

```
b
```

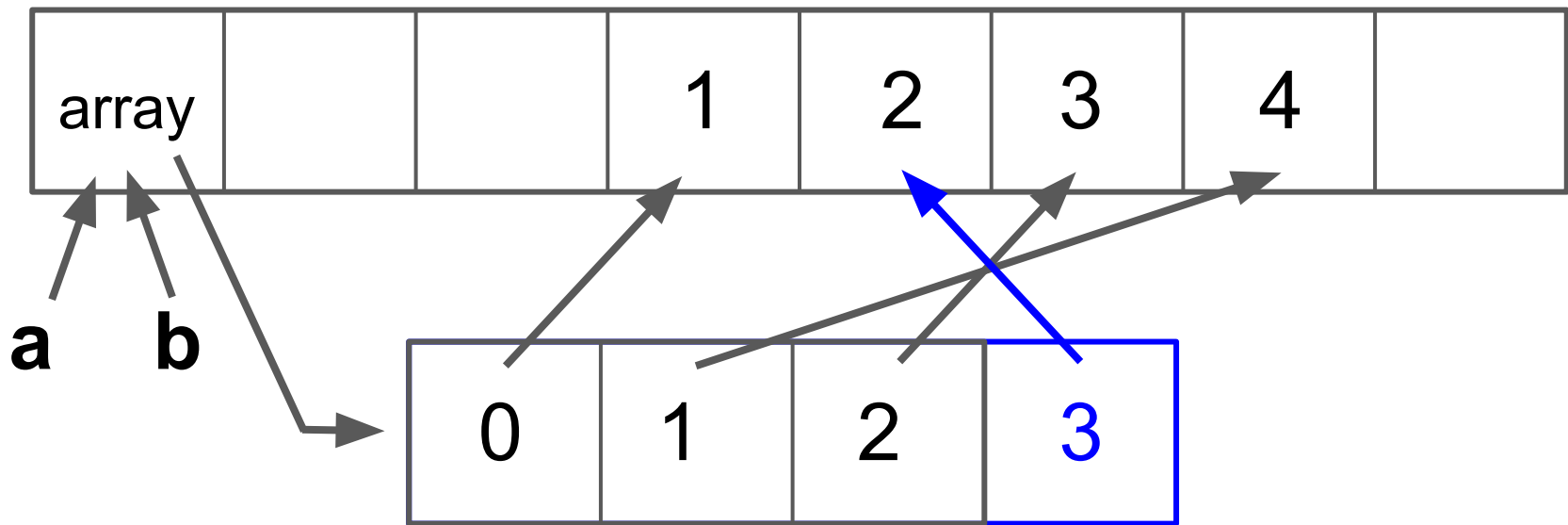
```
a.object_id == b.object_id
```



*What will happen
when line 4 executes?*

1) `a = [1, 2, 3]`
2) `b = a`

3) `b[1] = 4`
4) `a.push(2)`



1) `a = [1, 2, 3]`
2) `b = a`

3) `b[1] = 4`
4) `a.push(2)`

In Pry:

```
old_a_id = a.object_id  
a.push(4)
```

a

b

```
old_a_id == a.object_id  
a.object_id == b.object_id
```

Bonus demo 1: `concat`

```
old_b_id = b.object_id
```

```
b.concat([5,6,7])
```

b

a

```
old_b_id == b.object_id
```

```
a.object_id == b.object_id
```

Bonus demo 2: `+=`

```
old_a_id = a.object_id
```

```
a += [8, 9]
```

```
a
```

```
b
```

```
a.object_id == b.object_id
```

```
old_a_id == a.object_id
```