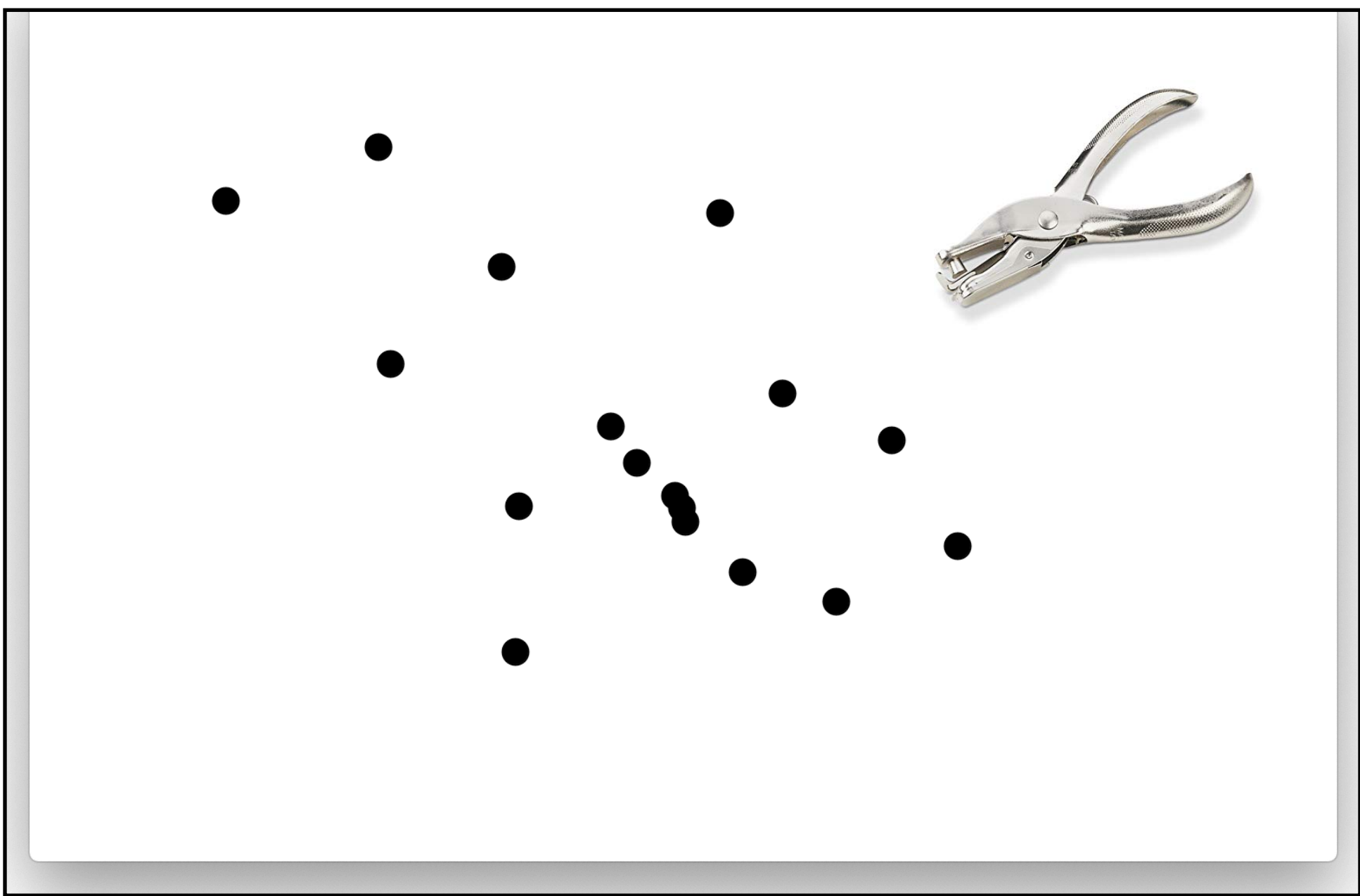


# SC101

## Lecture 2

# Mouse Event



```
# This constant controls the size of the hole
```

```
SIZE = 30
```

```
# This constant controls the size of the hole
```

```
SIZE = 30
```

```
def main():
```

```
# This constant controls the size of the hole
```

```
SIZE = 30
```

```
def main():
```

```
    onmouseclicked(hole_punch)
```

```
# This constant controls the size of the hole
```

```
SIZE = 30
```

```
def main():
```

```
    onmouseclicked(hole_punch)
```

```
def hole_punch(event):
```

```
# This constant controls the size of the hole
```

```
SIZE = 30
```

```
def main():
```

```
    onmouseclicked(hole_punch)
```

```
def hole_punch(event):
```

```
    hole = GOval(SIZE, SIZE)
```



```
# This constant controls the size of the hole
```

```
SIZE = 30
```

```
def main():
```

```
    onmouseclicked(hole_punch)
```

```
def hole_punch(event):
```

```
    hole = GOval(SIZE, SIZE)
```

```
    hole.filled = True
```

```
# This constant controls the size of the hole  
SIZE = 30
```

```
def main():  
    onmouseclicked(hole_punch)
```

```
def hole_punch(event):  
    hole = GOval(SIZE, SIZE)  
    hole.filled = True  
    window.add(hole, x=event.x, y=event.y)
```

```
# This constant controls the size of the hole  
SIZE = 30
```

```
def main():  
    onmouseclicked(hole_punch)
```

```
def hole_punch(event):  
    hole = GOval(SIZE, SIZE)  
    hole.filled = True  
    window.add(hole, x=event.x, y=event.y)
```



有沒有方法讓所有人都看得到一個 variable

```
# This constant controls the size of the hole
```

```
SIZE = 30
```

```
def main():
```

```
    onmouseclicked(hole_punch)
```

```
def hole_punch(event):
```

```
    hole = GOval(SIZE, SIZE)
```

```
    hole.filled = True
```

```
    window.add(hole, x=event.x, y=event.y)
```

```
# This constant controls the size of the hole
```

```
SIZE = 30
```

```
window = GWindow()
```

```
def main():
```

```
    onmouseclicked(hole_punch)
```

```
def hole_punch(event):
```

```
    hole = GOval(SIZE, SIZE)
```

```
    hole.filled = True
```

```
    window.add(hole, x=event.x, y=event.y)
```

# Global Variable

**Let's do it!**



# Asynchronous

# Asynchronous

```
def main():
```

```
→ onmouseclicked(what_to_do)
```

```
...
```

```
...
```

```
def what_to_do(event):
```

```
...
```

```
...
```

# Asynchronous

```
def main():
```

```
    onmouseclicked(what_to_do)
```

```
    ...
```



```
    ...
```

```
def what_to_do(event):
```

```
    ...
```

```
    ...
```

# Asynchronous

```
def main():
```

```
    onmouseclicked(what_to_do)
```

```
→ ...
```

```
...
```

```
def what_to_do(event):
```

```
...
```

```
...
```




# Asynchronous

```
def main():  
    onmouseclicked(what_to_do)  
    ...  
    ...  
  
def what_to_do(event):  
    → ...  
    ...
```



# Asynchronous

```
def main():  
    onmouseclicked(what_to_do)  
    ...  
    ...  
  
def what_to_do(event):  
    ...  
    ...
```



# Asynchronous

```
def main():
```

```
    onmouseclicked(what_to_do)
```

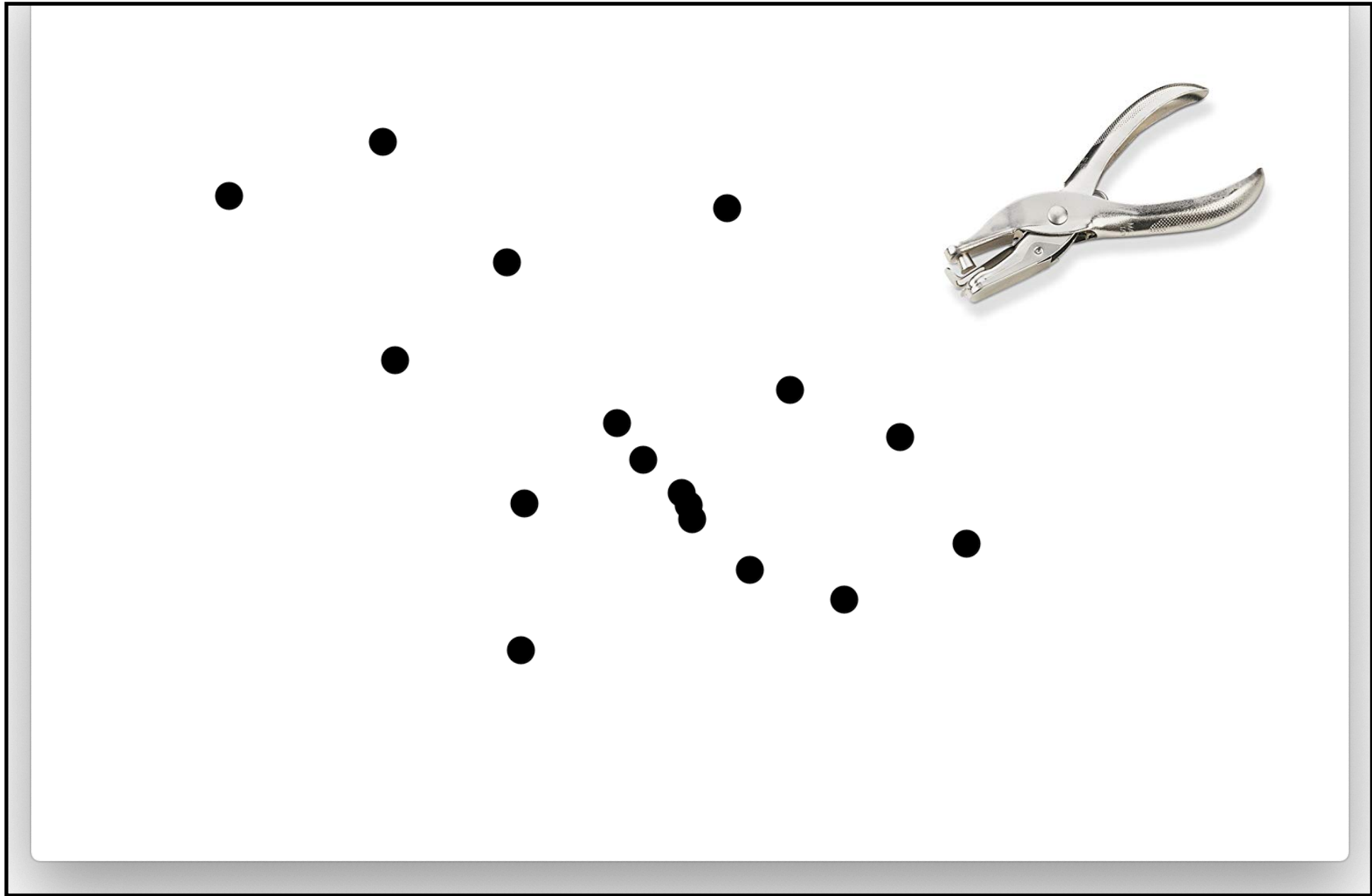
```
    ...
```

```
→ ...
```

```
def what_to_do(event):
```

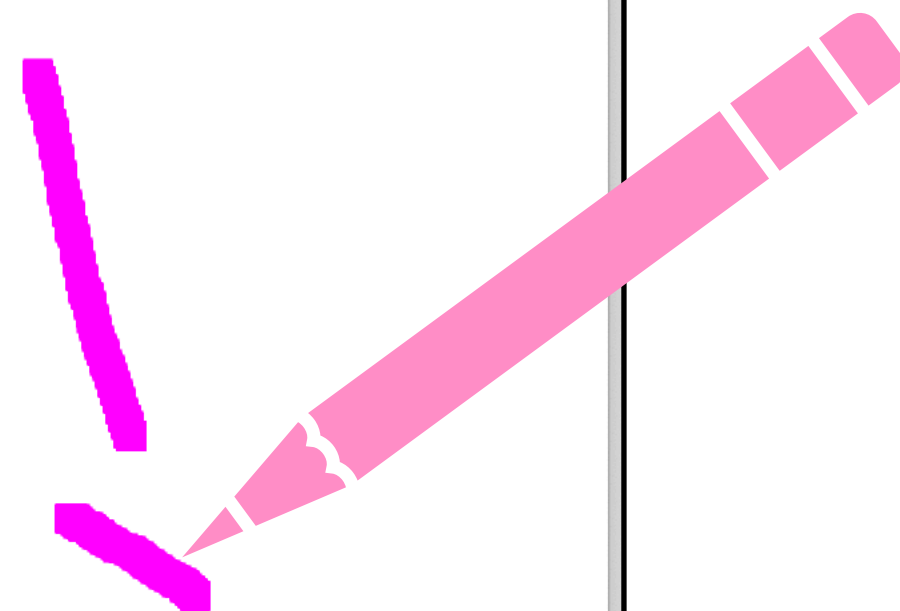
```
    ...
```

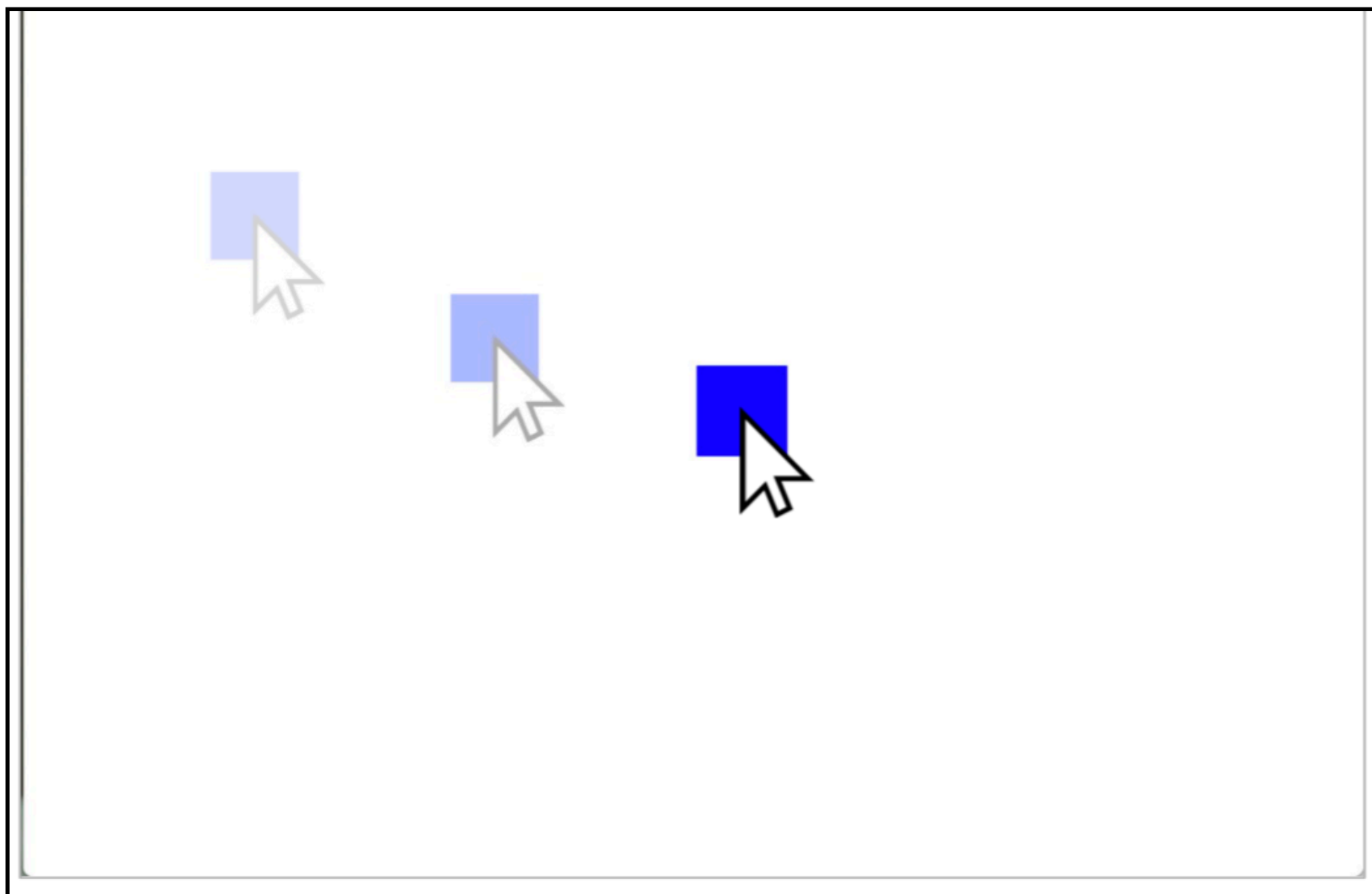
```
    ...
```





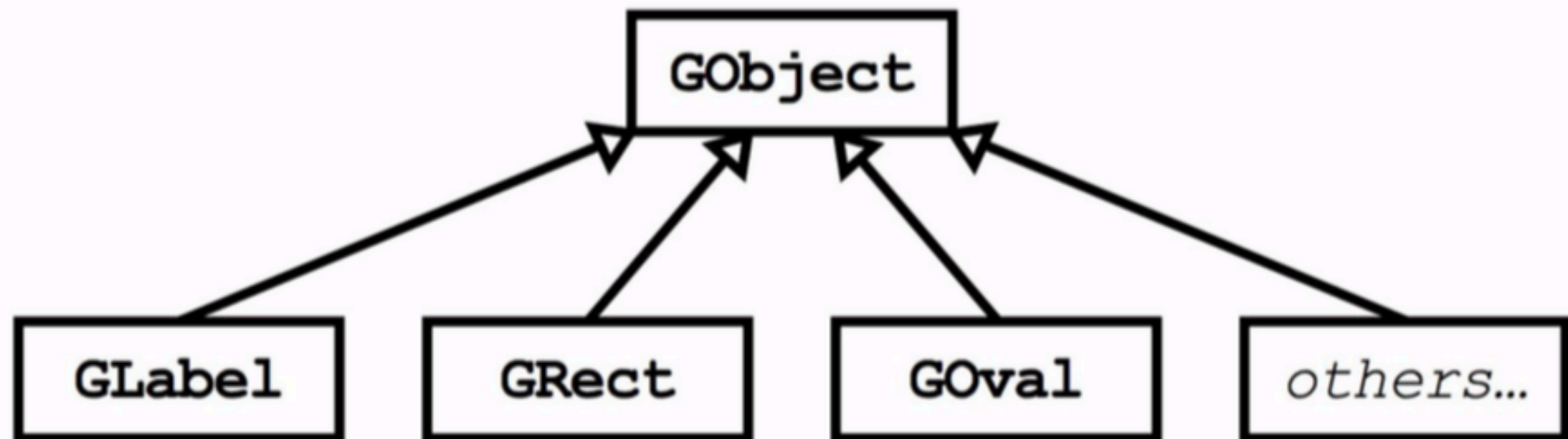
Hello!





## **window.get\_object\_at(x, y)**

告訴使用者 (x, y) 這顆 pixel 屬於哪個 object



如果沒東西？

**None**

# None

- 我們可以使用 is not 或是 is 去看一個 object 的狀態

```
maybe_object = window.get_object_at(x, y)
```

If `maybe_object` is not **None**:

```
maybe_object.color = 'magenta'
```

```
maybe_object = window.get_object_at(x, y);
```

If `maybe_object` is not **None**:

```
window.remove(maybe_object)
```

# None



`window.remove(maybe_object)`

# None

- 我們可以使用 is not 或是 is 去看一個 object 的狀態

```
maybe_object = window.get_object_at(x, y)
```

If `maybe_object` is not **None**:

```
maybe_object.color = 'magenta'
```

```
maybe_object = window.get_object_at(x, y);
```

If `maybe_object` is not **None**:

```
window.remove(maybe_object)
```