

Devoirs semaine 8

Dans tous les exercices qui suivent, vous commencez par créer une matrice *Numpy* de 100 lignes par 100 colonnes contenant des zéros qui correspondront aux parties sombres de l'image.

Vous modifiez ensuite certaines "cases" de zéro à un de la matrice pour obtenir les parties claires.

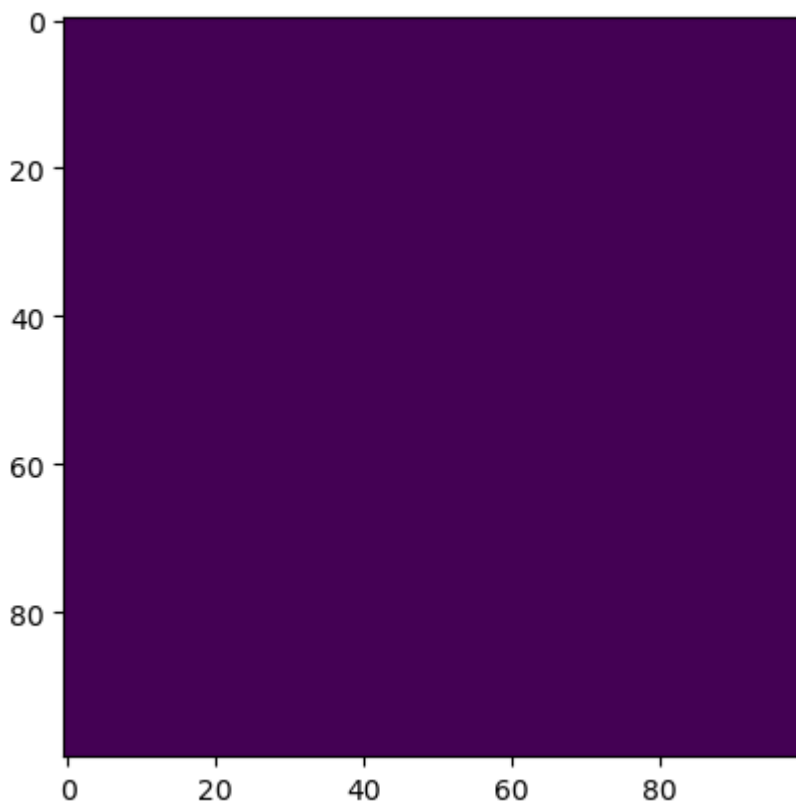
```
In [1]: import numpy as np
import matplotlib.pyplot as plt
```

Exemple

```
In [2]: image = np.zeros((100,100)) #parties sombres
```

```
In [3]: plt.imshow(image)
```

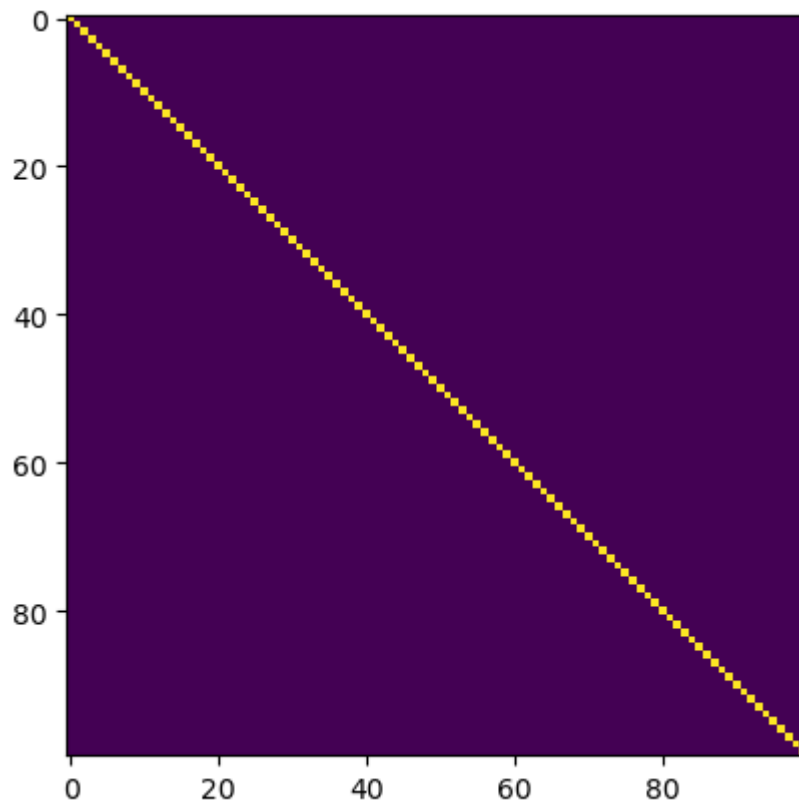
```
Out[3]: <matplotlib.image.AxesImage at 0x241a5122d60>
```



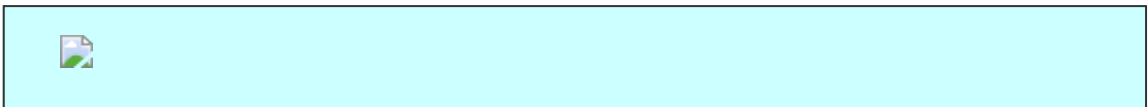
```
In [4]: for i in range(100):
for j in range(100):
    if i==j:
        image[i,j]=1 #parties claires
```

```
In [5]: plt.imshow(image)
```

Out[5]: <matplotlib.image.AxesImage at 0x241a5169850>



Exercise 1

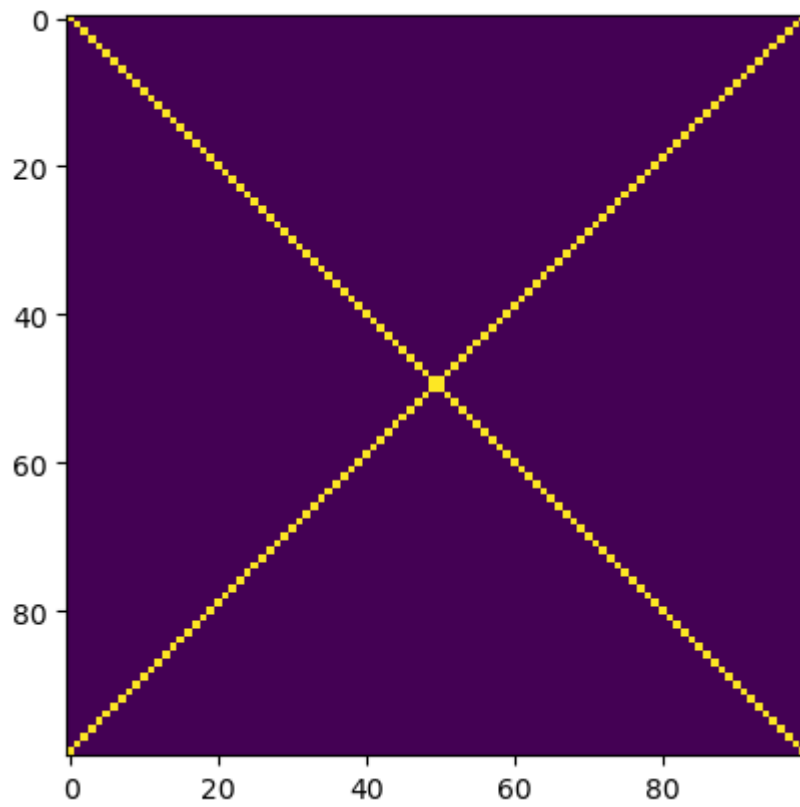


```
In [6]: exo1 = np.zeros((100,100))
```

```
In [7]:
```

```
In [8]: plt.imshow(exo1)
```

Out[8]: <matplotlib.image.AxesImage at 0x241a51d3a60>



Exercise 2

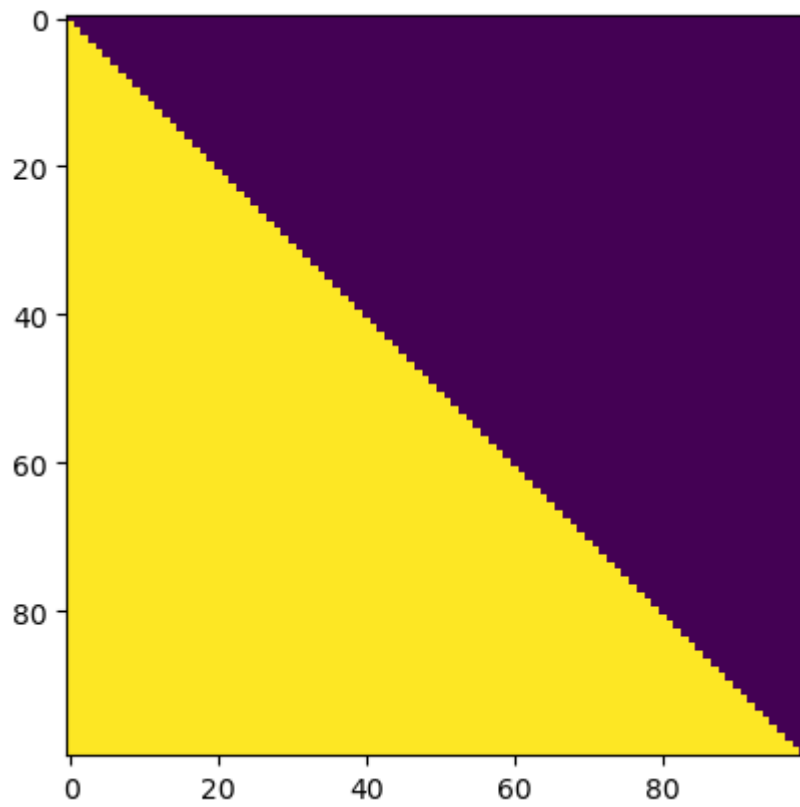


```
In [9]: exo2 = np.zeros((100,100))
```

```
In [10]:
```

```
In [11]: plt.imshow(exo2)
```

```
Out[11]: <matplotlib.image.AxesImage at 0x241a5231a00>
```



Exercise 3

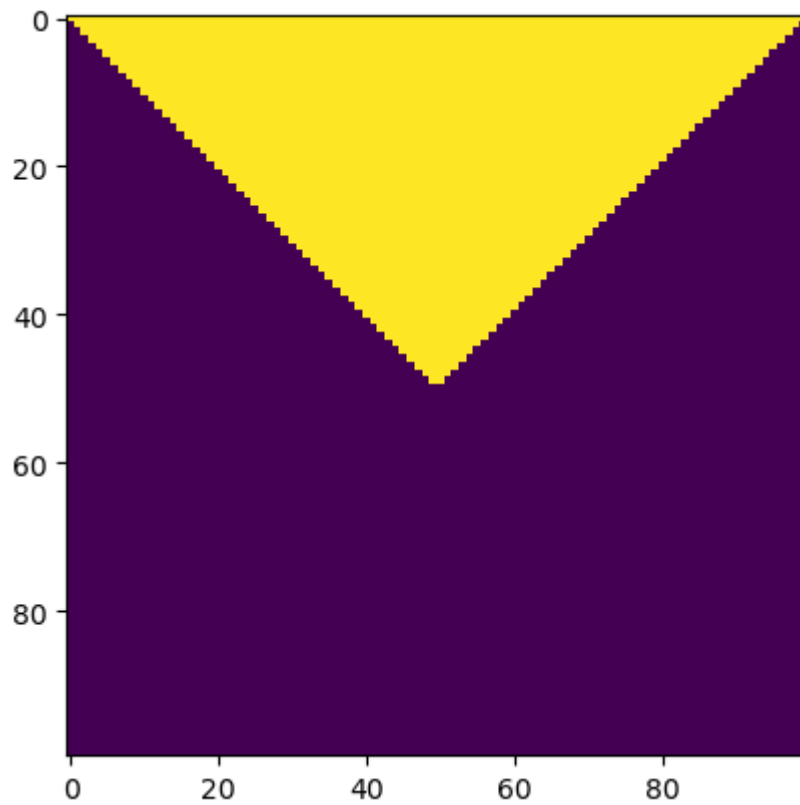


```
In [12]: exo3 = np.zeros((100,100))
```

```
In [13]:
```

```
In [14]: plt.imshow(exo3)
```

```
Out[14]: <matplotlib.image.AxesImage at 0x241a5290ac0>
```



Exercise 4

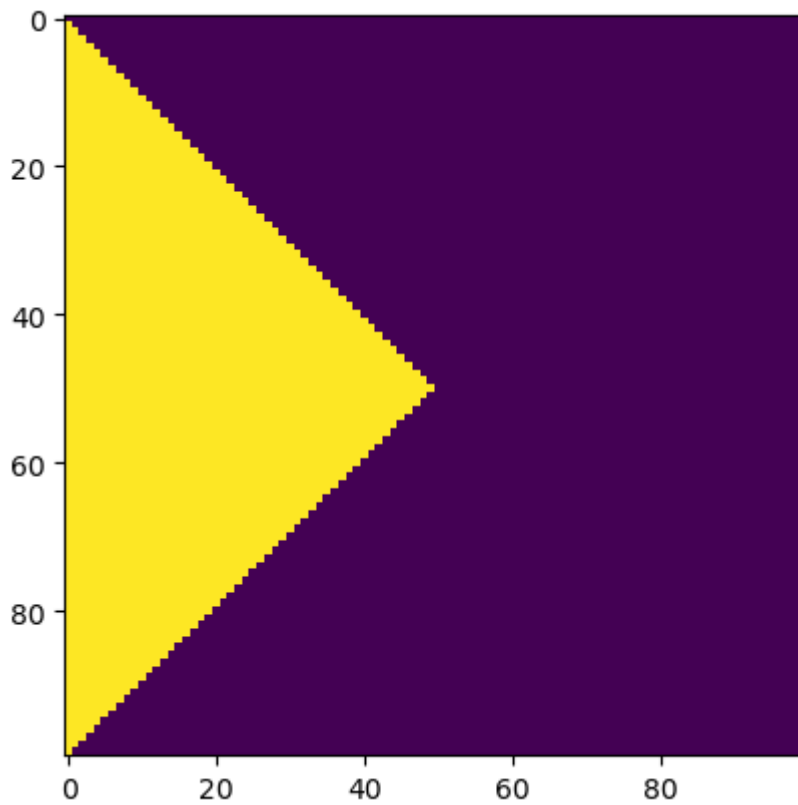


```
In [15]: exo4 = np.zeros((100,100))
```

```
In [16]:
```

```
In [17]: plt.imshow(exo4)
```

```
Out[17]: <matplotlib.image.AxesImage at 0x241a53b9250>
```



Exercice 5



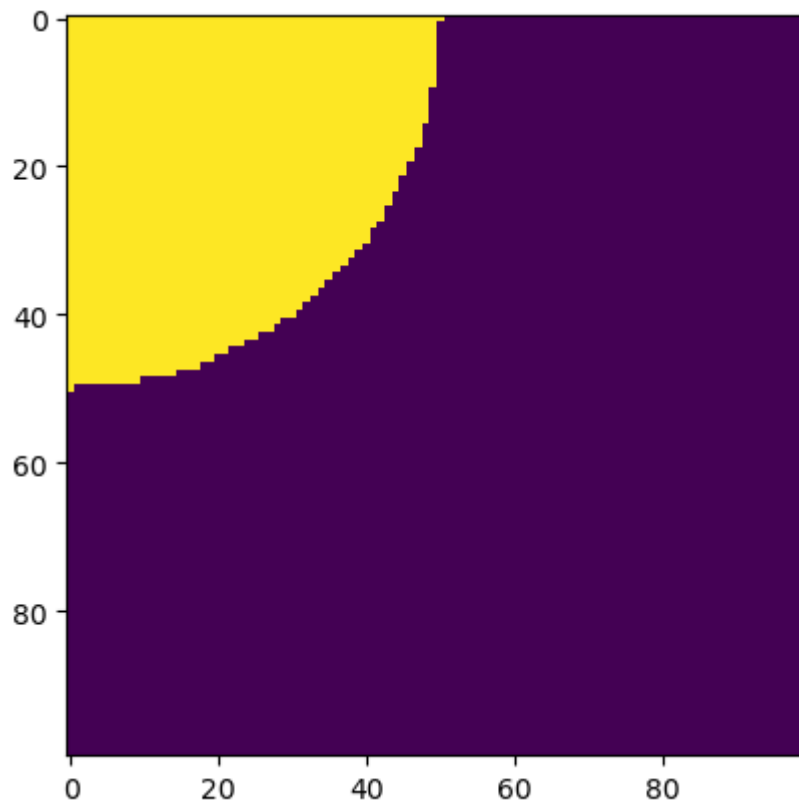
Rappel : $x^2+y^2=R^2$ est l'équation d'un cercle de centre O et de rayon R

```
In [18]: exo5 = np.zeros((100,100))
```

```
In [19]:
```

```
In [20]: plt.imshow(exo5)
```

```
Out[20]: <matplotlib.image.AxesImage at 0x241a553edc0>
```



Exercise 6

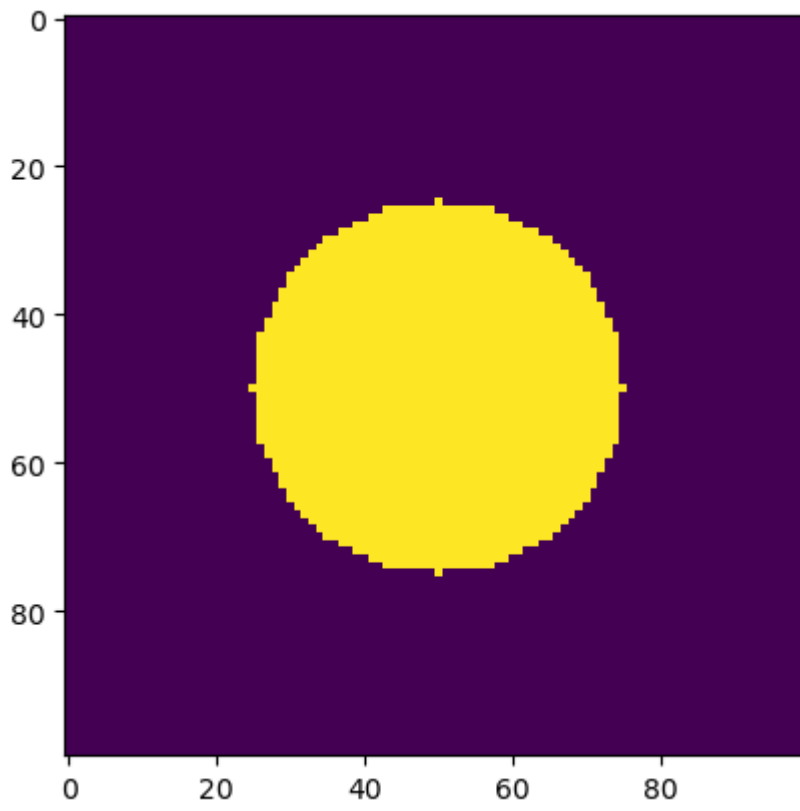


```
In [21]: exo6 = np.zeros((100,100))
```

```
In [22]:
```

```
In [23]: plt.imshow(exo6)
```

```
Out[23]: <matplotlib.image.AxesImage at 0x241a542f880>
```



In []: