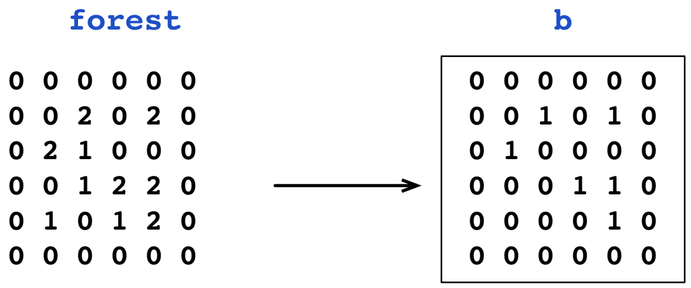
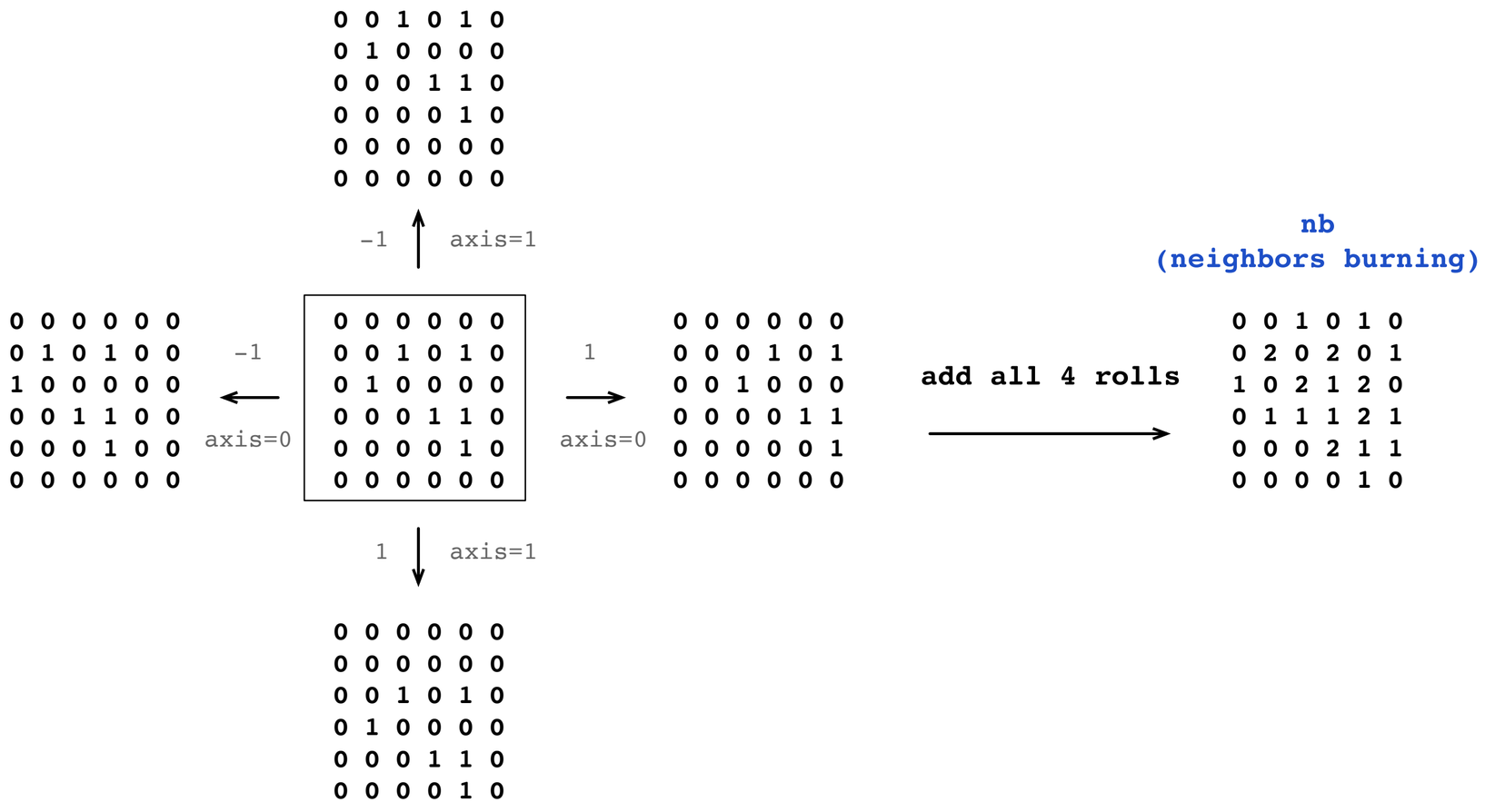
```
# identify everywhere the forest is burning
b = np.where(forest == 2, 1, 0)
```



```
# count the number of burning neighbors at each site
nb = np.roll(b, 1, axis=0) + np.roll(b, -1, axis=0) + np.roll(b, 1, axis=1) + np.roll(b, -1, axis=1)
```



Technical note:
np.roll does actually wrap around the boundaries of the array, but since we will zero out the forest array on those boundaries anyway, it doesn't affect the overall calculation

---

```
# return an array with a 1 everywhere the forest has a tree and at least 1 neighbor is burning
return np.where( (forest == 1) * (nb > 0) , 1, 0)
```