

Sort 012 in array in linear time with one pass

```
def sort(arr):
    n = len(arr)
    i = 0
    j = 0
    k = n-1
    while i<=k:
        if arr[i]==0:
            arr[i],arr[j] = arr[j],arr[i]
            i = i+1
            j = j+1
        elif arr[i]==1:
            i = i+1
        else:
            arr[i],arr[k] = arr[k],arr[i]
            k = k-1

arr = [0,2,1,1,0,0,0,2,1,0,1,2,0,1,2,0,1,2,0,1,2,0]
sort(arr)
print(arr)
```

This is application of array partitioning.

0 to j-1==>0

j to i-1==>1

i to end ==> 2