

Does this program have a bug? How to fix it?

```
def bucketsort(arr, k ):
    counts = [0] * k
    for x in arr:
        counts[x] += 1
    sorted_arr = []
    for i, count in enumerate(arr):
        sorted_arr.extend([i] * count )
    return sorted_arr
```

Yes, this program has a bug. The bug is that the variable "counts" is not being initialized correctly. The code should be changed to:

```
def bucketsort(arr, k):
    counts = [0] * (k+1)
    for x in arr:
        counts[x] += 1
    sorted_arr = []
    for i, count in enumerate(counts):
        sorted_arr.extend([i] * count)
    return sorted_arr
```