Full Name: ______________________________

AID: ______________________________

CS 331 Midterm Exam Worksheet

WP1	(/8) :
WP2	(/8) :
WP3	(/8) :
TOTAL	(/24) :

Python data structures

WP1

```
def zip(*seqs):
    its = [iter(l) for l in seqs]
    zl = []
    while True:
        try:
            zl.append(tuple(next(it) for it in its))
        except:
            return zl

OR

def zip(*seqs):
    min_length = len(seqs[0])
    for i in range(1, len(seqs)):
        if len(seqs[i]) < min_length:
            min_length = len(seqs[i])
    ziplist = []
    for i in range(min_length):
        ziplist.append(tuple(l[i] for l in seqs))
    return ziplist
```

Mystery sort

WP2(a)

3	2	4	6	0	7	5	1

0	2	4	6	3	7	5	1
0	1	4	6	3	7	5	2
0	1	2	6	3	7	5	4
0	1	2	3	6	7	5	4
0	1	2	3	4	7	5	6
0	1	2	3	4	5	7	6
0	1	2	3	4	5	6	7

WP2(b)

O(N^2)

WP2(c)

Prefer insertion sort, as it does better than this mystery sort function on partially ordered lists.

Array-backed list

WP3

```
class ArrayList:
    def __init__(self):
        self.data = []

    def move(self, idx_src, idx_dst):
        x = self.data[idx_src]
        if idx_dst < idx_src:
            for i in range(idx_src, idx_dst, -1):
                self.data[i] = self.data[i-1]
        else:
            for i in range(idx_src, idx_dst):
                self.data[i] = self.data[i+1]
        self.data[idx_dst] = x
```