Comp101 – Assignment 06

Output problem –
When outputting during my random list function I wanted to display each individual list in a horizontal form. I think this would look the best and I managed to get it to work as shown below. This code creates five random lists and then outputs them as the screenshots below show. This is where my problem starts. After being puzzled with why my calculations did not match the number of seats sold in each band, I realised that this print loop printed each loop horizontally which just happened to create five lists.

```
# Create list and randomly populate it
for i in range(5):
    numc = 5
    numr = 5

    seats = [[0 for row in range(numr)] for col in range(numc)]

    for pos in random.sample(range(25), random.randint(10, 25)):
        seats[pos // 5][pos % 5] = 1

    # Test print
    print()
    # print(f"   - Day {i + 1} -")
    for i in range(numr):
        print(seats[i], end=("     "))
```

Each row is the random list and not the entire square.

```
[1, 1, 1, 1, 1]   [1, 1, 1, 1, 0]   [1, 1, 0, 1, 1]   [1, 1, 1, 1, 0]   [1, 1, 1, 1, 1]
[1, 0, 1, 0, 1]   [1, 1, 1, 1, 1]   [0, 1, 1, 1, 1]   [1, 1, 1, 0, 1]   [0, 1, 1, 1, 1]
[0, 0, 1, 0, 0]   [0, 0, 0, 1, 1]   [0, 1, 0, 0, 1]   [1, 1, 1, 1, 1]   [1, 0, 0, 1, 0]
[1, 1, 1, 1, 1]   [1, 1, 1, 1, 1]   [1, 1, 1, 1, 1]   [1, 1, 1, 1, 1]   [1, 1, 1, 1, 1]
[0, 1, 1, 1, 0]   [1, 0, 0, 1, 0]   [1, 0, 0, 1, 1]   [0, 0, 1, 0, 0]   [0, 0, 1, 1, 1]
```

```
   - Day 1 -
[1, 1, 0, 0, 1]
[1, 0, 1, 0, 0]
[0, 1, 0, 0, 0]
[1, 1, 0, 0, 0]
[1, 1, 0, 0, 1]

   - Day 2 -
[0, 1, 1, 0, 1]
[1, 1, 1, 0, 1]
[1, 0, 0, 0, 1]
[1, 0, 1, 1, 0]
[0, 1, 1, 1, 1]

   - Day 3 -
[0, 0, 1, 0, 1]
[1, 0, 1, 1, 0]
[0, 0, 1, 1, 1]
[0, 0, 0, 1, 0]
[1, 1, 1, 0, 0]

   - Day 4 -
[1, 1, 1, 1, 1]
[1, 1, 0, 1, 0]
[1, 1, 1, 1, 1]
[1, 0, 1, 1, 1]
[0, 0, 1, 1, 1]

   - Day 5 -
[0, 1, 1, 1, 1]
[0, 1, 1, 0, 1]
[1, 1, 1, 1, 1]
[1, 1, 0, 0, 0]
[1, 1, 1, 1, 0]
```

Solution 1 –
My first thought was that I should just sacrifice the formatting of the output for functionality. As much as I prefer the way the above output looks it is not essential to the overall program and is merely a visual issue. Here is my first solution. With a small edit to the print function the lists print vertically and have the name above each one. This works perfectly but doesn't look as nice or is as efficient as the first one.

```
# Test print
print()
print(f"   - Day {i + 1} -")
for i in range(numr):
    print(seats[i])
```

Solution 2 –
My second solution would be to continue with the original output but edit my maths so that it calculates the lists as they are show. I conceptualise that I would have to edit the function

below to add up the list as a whole instead of each row of the lists individually. This would mean the first two lists would be band A, the second two band B and the final list as band C. I believe this would work just fine but the maths would be a bit confusing.

```
# Money made per each band
prof_banda = prof_banda + float(((seats[0].count(1)) + (seats[1].count(1))) * bandA)
prof_bandb = prof_bandb + float(((seats[2].count(1)) + (seats[3].count(1))) * bandB)
prof_bandc = prof_bandc + float((seats[4].count(1)) * bandC)
```