Problem set 6

Exercise 1 – Number Placement in OOP Style (3 points)

- *n* numbers; *n* - 1 preset inequality sign
- **Goal**: insert the numbers so that the inequality hold

Example:

Numbers: [2, 3, 0, 1, 5]; Signs: [‘<’, ‘>’, ‘<’, ‘<’]

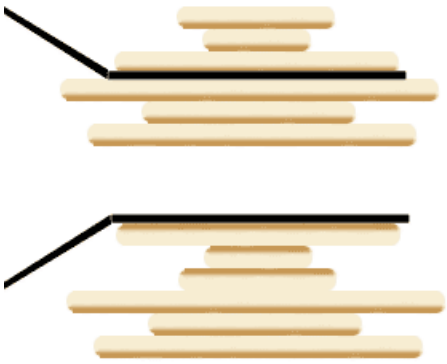
Solution: 0 < 5 > 1 < 2 < 3.

Please complete **`Q1_student.py`**, you should have the output as following,

```
[5, '<', 6, '<', 17, '>', 8, '<', 10, '<', 16, '>', 12, '<', 15]
[17, '<', 20]
[18, '>', 15, '>', 6, '<', 9, '<', 14]
```

Exercise 2 – Pancake Sorting in OOP Style (2 points)

- *n* pancakes of different sizes, randomly stacked
- Allowed action: slip a spatula under one pancake, and flip
- **Goal**: sort the pancakes (smallest at the top)



Please complete **`Q2_student.py`**, you should have the output as following

```
Unsorted pancakes: [13, 14, 2, 9, 16, 8, 7, 5, 18, 6]
Insert the pan at index 8 with the largest in flip as 18
Flip Up [18, 5, 7, 8, 16, 9, 2, 14, 13, 6]
Flip Down [6, 13, 14, 2, 9, 16, 8, 7, 5, 18]
```

Eventually…

```
Insert the pan at index 0 with the largest in flip as 2
Flip Up [2, 5, 6, 7, 8, 9, 13, 14, 16, 18]
Flip Down [2, 5, 6, 7, 8, 9, 13, 14, 16, 18]
Final order of pancakes:  [2, 5, 6, 7, 8, 9, 13, 14, 16, 18]
```