Technological Institute of the Philippines	**Quezon City - Computer Engineering**
Course Code:	CPE 019
Code Title:	Emerging Technologies in CpE 2
Summer	AY 2024 - 2025

Hands-on Activity 1.1	**Python Challenge**
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˅ Problem A:

˅ Implement a simple algorithm for quicksort that takes two lists of integers. Refer to the image below.

```python
def Part(Array, LowIndex, HighIndex):
  pivot = Array[HighIndex]

  index = LowIndex - 1

  for i in range(LowIndex, HighIndex):
    if Array[i] < pivot:
      index = index + 1
      (Array[index], Array[i]) = (Array[i], Array[index])

  (Array[index + 1], Array[HighIndex]) = (Array[HighIndex], Array[index + 1])
  return index + 1

def Sort(Array, LowIndex, HighIndex):
  if LowIndex < HighIndex:
    Pivot = Part(Array, LowIndex, HighIndex)

    Sort(Array, LowIndex, Pivot - 1)
    Sort(Array, Pivot + 1, HighIndex)

def printing(Array, Size):
  for i in Array:
    if i != Size:
      print(i, end = ", ")
    else:
      print(i, end = ".")

arr1 = [9, -3, 5, 2, 6, 8, -6, 1, 3]
arr2 = [6, -3, -3, -4, 2, 1, 1, -2, 4]

Sort(arr1, 0, 8)
printing(arr1, 9)
```

⤇ -6, -3, 1, 2, 3, 5, 6, 8, 9.

```python
Sort(arr2, 0, 8)
printing(arr2, 9)
```

⤇ -4, -3, -3, -2, 1, 1, 2, 4, 6,

˅ Problem B:

˅ Create an OOP implementation for a simple class diagram shown below.