

## Developing Sales

### ICT1002 Programming Fundamentals

As a programmer, you are given a list of sales numbers from different sales departments. Based on this list of numbers, you are request to develop one program to assistant your sales manager to analyse and get different representations of the data. The task you have to perform is listed below:

- a.) Given a list of sales numbers, you need to write functions `scale(list1, x)` to return another list of scaled numbers, where `list1` is the list of sales numbers and `x` is the scale factor. The scaled number can be calculated by using the input number multiplied by the scale factor. Below are some sample executions of the function:

```
>>> scale([10,20,30,40],2)
[20, 40, 60, 80]
>>> scale([30,40,50],0.1)
[3.0, 4.0, 5.0]
```

- b.) Given a list of sales number, you are required to write one function `sort(list1)` to return one list of sorted sales numbers. Different to the normal sorting, the sales manager request you to sort the number based on their last digit. Below are some sample executions of the function:

```
>>> sort([55,70,61,34,72,59])
[70, 61, 72, 34, 55, 59]
```

- c.) Given a list of sales numbers, you re required to write one function to output all the good sales. The sales number is considered to be good if it is above the average of the total sales numbers.

```
>>> goodSales([10,20,40,60,20])
[40, 60]
>>> goodSales([3,2,8,6,7])
[8, 6, 7]
```

- d.) Develop one program to allow users to input the sequence of the sales number and the scale factor. Then call all the functions to show use the scaled data, sorting result and good sales. Below are the sample executions of the program:

```
Enter a sequence of sales number:10,20,30,40,50,60
Enter the scale factor: 2
The scaled number is: [20, 40, 60, 80, 100, 120]
The sorted sales numbers are: [10, 20, 30, 40, 50, 60]
The good sales numbers are: [40, 50, 60]
```

**Remark:** for functions a, b and c, you can optimize the function body with at most 2 line codes by using `filter`, `map`, `reduce`, `sorted` and `lambda` expression. See how short your code can be.)

Running example: *(Your output should be in ONE line)*

```
C:\ICT1002\Lab5\Sales> python sales.py 10,20,30,40,50,60 2
```

```
The scaled number is: [20, 40, 60, 80, 100, 120] The sorted sales
numbers are: [10, 20, 30, 40, 50, 60] The good sales numbers are:
[40, 50, 60]
```