CSC148 Worksheet 15 Solution

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Question 1

a. According to docstring, *flatten([[0, -1], -2, [[-3, [-5], -7]]])* should return

$$[0, -1, -2, -3, -5, -7]$$

b.

sublist	flatten(sublist)	Value of s at the end of the iteration
N/A	N/A	[] (initial value of a)
[0,-1]	[0,-1]	
2	2	
[[-3, [-5], -7]]	[-3,-5,-7]	

Correct Solution:

sublist	flatten(sublist)	Value of s at the end of the iteration
N/A	N/A	[] (initial value of a)
[0,-1]	[0,-1]	
2	[2]	
[[-3, [-5], -7]]	[-3,-5,-7]	

c.

sublist	flatten(sublist)	Value of s at the end of the iteration
N/A	N/A	[] (initial value of a)
[0,-1]	[0,-1]	[0,-1]
2	[2]	[0,-1,2]
[[-3, [-5], -7]]	[-3,-5,-7]	[0,-1,2,-3,-5,-7]

d. Yes, the final value of s in previous problem matches the solution of [0,-1,2,-3,-5,-7] in problem 1.a.

```
    def flatten(obj: Union[int, List]) -> List[int]:
        """Return a (non-nested) list of the integers in <obj>.
        The integers are returned in the left-to-right order they appear
        in <obj>.

        >>> flatten(6)
        [6]
        >>> flatten([1, [-2, 3], -4])
        [1, -2, 3, -4]
        >>> flatten([[0, -1], -2, [[-3, [-5]]]])
        [0, -1, -2, -3, -5]
        """
        if isinstance(obj, int):
            return [obj]
        else:
            s = []
            for sublist in obj:
                s.extend(flatten(sublist))
            return s

```

Question 2

Question 3