

CSE 20
Fall 2021
Quiz 3

Solutions

1. (25 Points) Write a Python function called `multList(A, B)`. This function will take as input two lists `A` and `B`, each of the same length, then return a new list containing the products of corresponding elements in `A` and `B`. For instance, a call to `multList([3, 2, 4], [2, 5, 7])` will return the list `[6, 10, 28]`, and `multList([1, 2, 3], ['zero', 'one', 'two'])` will return the list `['zero', 'oneone', 'twotwotwo']`. Write your function so that if `A` and `B` are not of the same length, then `None` is returned.

```
def multList(A, B):
    if len(A)==len(B):
        C = []
        for i in range(len(A)):
            C.append(A[i]*B[i])
        # end for
        return C    # indentation is important here
    # end if
#end multList()
```

2. (25 Points) Write a Python function called `filterList(L)` whose input is a list of integers `L` (of any length), and that returns the list of elements in `L` whose index and value add to an even number. Equivalently, return the list of those elements whose index and value have the same parity. For instance, a call to `filterList([1, 3, 5, 2, 4, 6])` returns `[3, 4]`, and `filterList([4, 2, -8])` will return `[4, -8]`. Note that the returned list contains integers in the same order that they appear in the input list.

One possible solution:

```
def filterList(L):
    R = []
    for i in range(len(L)):
        x = L[i]
        if i%2==x%2:
            R.append(x)
        # end if
    # end for
    return R
# end filterList()
```

Another solution:

```
def filterList(L):
    R = []
    for i,x in enumerate(L):
        if (i+x)%2==0:
            R.append(x)
        # end if
    # end for
    return R
# end filterList()
```