

WK04\MyListClass.py

```
1 class MyList:
2     '''
3     Custom list class that handles input of a single list or a sequence of other data types.
4     Includes methods for appending and removing data, as well as a length member that maintains
5     the list length as an integer.
6     Includes the __str__ method, returning the contents of the array member for use with
7     Python's print() function.
8     '''
9     def __init__(self, *args):
10         if isinstance(args[0], list):
11             self.array = args[0]
12             index = 0
13             while True:
14                 try:
15                     i = self.array[index]
16                     index += 1
17                 except IndexError:
18                     break
19             except:
20                 print('Error in __init__ method while counting length of input array')
21                 break
22         else:
23             self.array = []
24             index = 0
25             while True:
26                 try:
27                     self.array += [args[index]]
28                     index += 1
29                 except IndexError:
30                     break
31             except:
32                 print('Error in __init__ method while assigning multiple args to the MyList
33                 object instance')
34             self.length = index
35
36     def my_append(self, val):
37         self.array += [val]
38         self.length += 1
39
40     def my_remove(self, val):
41         i = 0
42         while i <= self.length-1:
43             if self.array[i] == val and i > self.length//2:
44                 j = i
45                 while j < self.length-1:
46                     self.array[j], self.array[j+1] = self.array[j+1], self.array[j]
47                     j += 1
48                 self.array = self.array[:-1]
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46         self.length -=1
47         return
48     elif self.array[i] == val and i <= self.length//2:
49         j = i
50         while j > 0:
51             self.array[j], self.array[j-1] = self.array[j-1], self.array[j]
52             j -= 1
53         self.array = self.array[1:]
54         self.length -=1
55         return
56     i += 1
57
58     def __str__(self):
59         return "[" + ','.join(map(str, self.array)) + "]"
60
61 arr = [1,3,5,6,8,9,12,13,None,15,17,18,24,True,36,47,58,3,98,'432',4,3,42,'fdsa']
62 z = MyList(arr)
63
64 print(f'{"Starting array, "arr":':<35} {arr}')
65 print(f'{"MyList using "arr":':<35} {z}')
66
67 remove = 1
68 z.my_remove(remove)
69 print(f'{"Removing " + str(remove) + "':<35} {z}')
70
71 remove = 24
72 z.my_remove(remove)
73 print(f'{"Removing " + str(remove) + "':<35} {z}')
74
75 remove = 'fdsa'
76 z.my_remove(remove)
77 print(f'{"Removing " + str(remove) + "':<35} {z}')
78
79 apnd = 1111
80 z.my_append(apnd)
81 print(f'{"Appending " + str(apnd) + "':<35} {z}')
82
83 print(f'{"Final list":':<35} {z}')
```

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Fall2024\CS210> & C:/Users/User01/AppData/Local/Programs/Python/Python312/python.exe "g:/My Drive/School/01_Fall2024/C
[1, 3, 5, 6, 8, 9, 12, 13, None, 15, 17, 18, 24, True, 36, 47, 58, 3, 98, '432', 4, 3, 42, 'fdsa']
[1, 3, 5, 6, 8, 9, 12, 13, None, 15, 17, 18, 24, True, 36, 47, 58, 3, 98, 432, 4, 3, 42, fdsa]
[3, 5, 6, 8, 9, 12, 13, None, 15, 17, 18, 24, True, 36, 47, 58, 3, 98, 432, 4, 3, 42, fdsa]
[3, 5, 6, 8, 9, 12, 13, None, 15, 17, 18, True, 36, 47, 58, 3, 98, 432, 4, 3, 42, fdsa]
[3, 5, 6, 8, 9, 12, 13, None, 15, 17, 18, True, 36, 47, 58, 3, 98, 432, 4, 3, 42]
[3, 5, 6, 8, 9, 12, 13, None, 15, 17, 18, True, 36, 47, 58, 3, 98, 432, 4, 3, 42, 1111]
[3, 5, 6, 8, 9, 12, 13, None, 15, 17, 18, True, 36, 47, 58, 3, 98, 432, 4, 3, 42, 1111]
Fall2024\CS210> 
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