

3.5_solutions

February 6, 2023

1 Solutions

1.0.1 list comprehensions

****In this section,; loops are not allowed; only list comprehensions***

1. Let `mylist=[1,2,3,4,5,6,7,8,9,10,11,12,13,14,15]`. Using `mylist`, create a newlist in which each element is half the value of the original list

```
[1]: mylist=[1,2,3,4,5,6,7,8,9,10,11,12,13,14,15 ]
      newlist = [i/2 for i in mylist]
      print(newlist)
```

```
[0.5, 1.0, 1.5, 2.0, 2.5, 3.0, 3.5, 4.0, 4.5, 5.0, 5.5, 6.0, 6.5, 7.0, 7.5]
```

2. Same as before, but not including the elements divisible by 4

```
[2]: mylist=[1,2,3,4,5,6,7,8,9,10,11,12,13,14,15 ]
      newlist = [i/2 for i in mylist if i % 4 != 0]
      print(newlist)
```

```
[0.5, 1.0, 1.5, 2.5, 3.0, 3.5, 4.5, 5.0, 5.5, 6.5, 7.0, 7.5]
```

3. Let `mytext="There are 1000 houses and 30 buildings in 3 states"`. create a list containing on-ly the numbers of this string.

```
[3]: mytext="There are 1000 houses and 30 buildings in 3 states"
      newlist=[c for c in mytext if c in '0123456789']
      print(newlist)
```

```
['1', '0', '0', '0', '3', '0', '3']
```

4. Let `list2=['John', 'Peter', 'Mary', 'Anna']` create a new list in which each elements the length of the name in `list2`

```
[4]: list2=["John", "Peter", "Mary", "Anna"]
      newlist=[ len(w) for w in list2]
      print(newlist)
```

```
[4, 5, 4, 4]
```

5. Using again `list2`; create a new list in which each element is a tuple with 2 values, the name in uppercase, and the length of the name

```
[6]: list2=["John", "Peter", "Mary", "Anna"]  
      newlist=[ (w.upper(), len(w)) for w in list2]  
      print(newlist)
```

```
[('JOHN', 4), ('PETER', 5), ('MARY', 4), ('ANNA', 4)]
```

```
[ ]:
```