**Lists - Changing elements, adding elements, and deleting elements**

Lists are what we call **mutable**. This means that we can change the contents of a list without creating a whole new list.

Adding an element:

ls = []

ls.append("Cher")

print(ls) # ["Cher"]

# add one more item to ls using the append function

What are the parameters of the list append function?

Return value?

Changing an element:

ls = ["Bert", "Ernie"]

ls[0] = "Big Bird"

print(ls) # ["Big Bird", "Ernie"]

# change the contents of ls[1] to be the lowercase version of ls[1]

Removing an element:

ls = ["Pearl", "Garnet", "Topaz"]

del ls[0] # we'll use the del keyword, which stands for delete

print(ls) # ["Garnet", "Topaz"]

# remove the last two items from ls using the del keyword

**While loops + lists**

For each code snippet below, first find the differences between the given snippets and the other(s) in its group. Then, write down the output of each code snippet.

| Group 1 | Output |
| --- | --- |
| index = 1  while index <= 5:  print(index % 2)  index = index + 1  print(index) | **1**  **0**  **1**  **0**  **1**  **6** |
| index = 1  while index > 5:  print(index % 2)  index = index + 1  print(index) | **1** |

| Group 2 (this group continues on the back) | Output |
| --- | --- |
| my\_list = [1, 3, 5, 6]  i = 0  while i < len(my\_list):  my\_list[i] = my\_list[i] + 1  i += 1  print(my\_list) | **[2, 4, 6, 7]** |
| my\_list = [1, 3, 5, 6]  i = 0  while i < len(my\_list):  my\_list[i] = 1  i += 1  print(my\_list) | **[1, 1, 1, 1]** |
| my\_list = [1, 3, 5, 6]  i = 0  while i < len(my\_list):  my\_list[i] = my\_list[i] - 1  i += 1  print(my\_list) | **[0, 2, 4, 5]** |

| Group 3 | Output |
| --- | --- |
| my\_list = []  while len(my\_list) < 5:  my\_list.append(len(my\_list))  print(my\_list) | **[0, 1, 2, 3, 4]** |
| my\_list = [5,4,3,2,1]  while len(my\_list) > 1:  del my\_list[len(my\_list) - 1]  print(my\_list) | **[5]** |

| Group 4 | Output of calling main() |
| --- | --- |
| word = "murder"  accumulator = ""  index = len(word)-1  while len(accumulator) < len(word):  accumulator += word[index]  index = index - 1  print(word)  print(accumulator) | **murder**  **redrum** |
| word = "murder"  accumulator = ""  index = len(word) - 1  while index >= 0:  accumulator += word[index % 2]  index = index - 1  print(word)  print(accumulator) | **murder**  **umumum** |
| word = "Racecar"  accumulator = ""  index = len(word) - 1  while index >= 0:  accumulator += word[index]  index = index - 1  print(word)  print(accumulator) | **Racecar**  **racecaR** |