Lists Assignment

June 1, 2021

1 Lists Assignment

1.1 Problem 1

Convert the string "Silent night, holy night" to a list of characters, char_list. Then print char_list.

```
[26]: char_list = list("Silent night ',' holy night")
      print (char_list)
```

```
['S', 'i', 'l', 'e', 'n', 't', ' ', 'n', 'i', 'g', 'h', 't', ' ', "'", ',', "'",
 ' ', 'h', 'o', 'l', 'y', ' ', 'n', 'i', 'g', 'h', 't']
```

1.2 Problem 2

Convert the string above to a list of words, word_list. Then print word_list. A word is defined as a sequence of non-blank characters.

```
[28]: word_list = ['Silent' , 'night' , ',' , 'holy', 'night']
      print(word_list)
```

```
['Silent', 'night', ',', 'holy', 'night']
```

1.3 Problem 3

Extend word_list so that it also contains two more items, the words "merry" and "Christmas". Call the new list word_list_2. Print it.

```
[30]: #word_list_2 = ['Merry' "," 'Christmas']
      #print(word_list_2)
```

```
[31]: #mainword_list = word_list + word_list_2
      #print (mainword_list)
```

```
[40]: word_list = ['Silent', 'night' , ',', 'holy', 'night']
      word_list.extend(['merry', 'Christmas'])
      word_list2 = word_list
      print(word_list2)
```

```
['Silent', 'night', ',', 'holy', 'night', 'merry', 'Christmas']
```

1

1.4 Problem 4

Modify word_list_2 by emoving the "word" which contains a comma. Print this list.

```
[41]: word_list.remove(",")
      print(word_list)
```

```
['Silent', 'night', 'holy', 'night', 'merry', 'Christmas']
```

1.5 Problem 5

Sometimes we would like to preserve an original list before we modify it in some way. As an example, suppose we have list_1, which contains the letters A, B, C and D. We want to hold onto this list and also have a new list, list_2, which contains the letter X inserted between B and C, in addition to the original members of list_1. The following code looks like it should work. In the markdown cell following the code, explain what happened.

```
[4]: # Create list_1
     list_1 = ["A","B","C","D"]

     # Make a copy in list_2
     list_2 = list_1

     # Modify list_2
     list_2.insert(2,"X")

     # Check list_2
     print(list_2)

     # Check list_1
     print(list_1)
```

```
['A', 'B', 'X', 'C', 'D']
['A', 'B', 'X', 'C', 'D']
```

1.6 Answer to Problem 5

Explain what happened.

```
[0]: # Create list_1
     list_1 = ["A","B","C","D"]
     ##A list called list_1 was created containing the letters of A, B, C, and D

     # Make a copy in list_2
     list_2 = list_1
     ## List_1 which carries the letters of A, B, C, and D assigned and stored in␣
      ↪list_2

     # Modify list_2
```

2

```
list_2.insert(2,"X")
## X is now inserted into list_2 between B and C due to the input of order we␣
 ↪told the progran which is 2

# Check list_2
print(list_2)
## list_2 will print the output to be A, B, X, C, D

# Check list_1
print(list_1)
## list_1 will print the output to be A, B, X, C, D due to it being assigned␣
 ↪and stored from earlier
```

1.7 Problem 6

Modify the code in Problem 5 so that it works.

```
[42]: list_1 = ["A","B","C","D"]
      list_2 = list_1
      list_2.insert(2,"X")
      print(list_2)
      print(list_1)
```

```
['A', 'B', 'X', 'C', 'D']
['A', 'B', 'X', 'C', 'D']
```

[0]: