

*In this workshop, you'll get practice with strings and lists, as well as with others concepts covered earlier this semester. Your workshop leader will guide you through the process. Please **do not** work ahead.*

1. Consider the following variable assignments:

```
digits = list(range(1, 10, 2))
```

- (a) What is the result of the expression `len(digits)`?
- (b) What value does `digits[3]` represent?
- (c) Using *negative* or *reverse* indexing, how would this same value be accessed?
- (d) Write a short program using the *accumulator pattern* that sums and prints the values in the `digits` list. You may *not* use the built-in `sum` function.
- (e) Write a short program that *modifies the digits list* so that the element at index `i` contains the sum of elements from index 0 up to (and including) index `i`. For example, if the starting list is `[1, 2, 3]`, the modified list should be `[1, 3, 6]` ($1 = 1$, $3 = 1 + 2$, $6 = 1 + 2 + 3$).

2. Consider the following code:

```
ballots = ['y', 'y', 'n', 'y', 'n', 'y', 'y', 'n', 'n', 'y']
numY = ballots.count('Y')
numN = ballots.count('N')
print("yes:", numY, "no:", numY)
```

(a) The output of the above code is `yes: 0 no: 0`, which is not the author might have intended. Identify what is wrong with the code and fix it.

(b) Write a function that accepts a list of ballot values such as the above list, and returns a list of two elements, where the first element is the number of yes votes and the second element is the number of no votes.

(c) Now, write a function that accepts a list of ballot values such as the above list **and** list of two (integer) elements. The function should modify the first element in the list so that it contains the count of yes votes, and modify the second element in the list so that it contains the count of no votes.

For example, the function might be called like:

```
counts = [0, 0]
count_ballots(ballots, counts)
```


4. Consider the following variable assignments:

```
names = ['Victor', 'Oana', 'Liana', 'Fred']  
gpas = [3.15, 3.66, 3.8, 3.4]
```

- (a) Write a function that accepts two lists, a names list and a gpas list like above, then asks for (1) a student name, and (2) a gpa (floating point number), and adds the name and gpa to the appropriate lists. If the GPA is not between 0.0 and 4.0, the function should *not* modify the lists, but print a message like "Invalid GPA". The function shouldn't return anything.
- (b) Write a function that accepts two lists, a names list and a gpas list like above, and repeatedly asks for a student name, then finds and prints the gpa corresponding to that name. If 'done' is typed in, the function should finish. Names should be searched for in a *case insensitive* manner. That is, if a user types "oana", the program should print "The GPA for Oana is 3.66.". The function shouldn't return anything.