

CS1026 Review/Practice Questions – Quiz 4 – Logic Problems!!

1. The following program is to read a text file and then organize the words in the text by their starting letter. This is then used to form a “dictionary” of words in the text. The program has 3 logic errors. Find and correct them. Assume that the file `inf` has been input and opened correctly.

```
words = {}
for ch in "abcdefghijklmnopqrstuvwxyz" :
    words[ch] = set()

# Read all of the lines from the file and add them to the dictionary.
for line in inf:
    parts = line.split(",")           -- should be " " - split on blank
    for word in parts :
        word = word.upper()          -- should be lower - ch above is lower
        for ch in words :
            if ch == word[0] :
                words[ch].add(ch)    -- should be add(word)

# Display the contents of the dictionary.
for ch in sorted(words) :
    print("Words beginning with %s:" % ch.upper())
    for word in sorted(words[ch]) :
        print(" ", word)
```

2. The following function builds a dictionary of the frequency of letters in a string. Assume that the string consists only of letters; i.e. all digits and punctuation have been removed. The function has 2 errors; find and correct them.

```
def charCounts(s) :
    # Count the number of occurrences of each character.
    counts = {}
    for ch in s :
        if ch not in counts :
            counts[ch] = 0           -- should be 1
        else :
            counts[ch] = counts[ch] + 1
    return s                          -- should be return counts
```

3. The following code is supposed to collect only letters (i.e. 'A' to 'Z' and 'a' to 'z' inclusively) ignoring all others. It is supposed to count the number of letters, the number of upper case letters and number of lower case letters. It contains 4 errors. Find and correct them.

```
countU = 0
countL = 0
nL = 0

aset = set()
for ch in strng :
    if ch > "A" or ch < "Z" :           -- should be "and"
        aset.add(ch)
        countU = countL + 1           -- should be countU + 1
        nL = nL + 1
    elif ch > "a" or ch < "z" :       -- should be "and"
        aset.add(ch)
        countL = countU + 1           -- should be countL + 1
        nL = nL + 1
print(nL, countU, countL)
```