



Polytechnic Tutoring Center

Exam 2 Review AK - CS 1114, Spring 2020

Disclaimer: This mock exam is only for practice. It was made by tutors in the Polytechnic Tutoring Center and is not representative of the actual exam given by the CS Department.

1. For each of the following, write what will be printed on the screen, or write ERROR if the code causes an error.

	Code fragment	Output (or ERROR)
a	<pre>var = [1, 2, 3] var[3] = var[1] + 3 print(var)</pre>	ERROR
b	<pre>ls = ['a', 'b', 'c', 'd'] ls = ls[:2] + ls[2:] print(ls)</pre>	['a','b','c','d']
c	<pre>var = [1, 2, 3] var.pop(2) print(var)</pre>	[1,2]
d	<pre>st = 'The Quick' print(st.find('elephant'))</pre>	-1
e	<pre>st1 = 'Tan' st2 = 'don' print([st1, st2])</pre>	['Tan',' don']
f	<pre>ls = [4] stuff = (1, 2, 3, ls) ls.append(5) print(stuff)</pre>	(1, 2, 3, [4,5])
g	<pre>st1 = 'Tur' st2 = st1 + 'key'</pre>	'Turkey'

	<pre>st1 += st2 print(st2)</pre>	
h	<pre>st = 'homework' print(st[4::-2])</pre>	wmh
i	<pre>ls = ['CS'] st = '1114' print(ls + st)</pre>	Error

2. Define a function, drawX, which takes a character and a length. It will draw an 'X' shape of the specified character and length.

Sample Function Call:

```
drawX('X', 5)
```

Sample Output:

```
X  X
 X X
  X
 X X
X  X
```

Code:

```
def drawX(character, length):
    for i in range(length):
        line_list = [" "] * length
        line_list[i], line_list[-(i+1)] = character, character
        result = "".join(line_list)
        print(result)
```

3.(15 Points) What is the output from the following code?

```
def f1(x, y):
    print("F1")
    temp=x
    x=y
    y=temp
    return y
def f2(x, y):
    print("F2")
    z = f1(x,y);
```

```

    print("F2:X: ", x)
    print("F2:Y: ", y)
    print("F2:Z: ", z)
def main():
    x=10
    y=20
    f2(x,y)
    print("X:", x)
    print("Y:", y)
main()

```

Answer:

```

F2
F1
F2:X: 10
F2:Y: 20
F2:Z: 10
X: 10
Y: 20

```

4. Write a function, `mergeIfSameLength`, which takes two lists of numbers and returns a new list where the elements are merged in an alternating fashion. If the lists are not the same size, return an empty list. For example, `mergeIfSameLength([1,2,5], [3,4,6])` will return `[1,3,2,4,5,6]`.

Code:

```

def mergeIfSameLength(list1, list2):
    mergeList = []
    if len(list1) != len(list2):
        return mergeList
    for index in range( len(list1)):
        mergeList.append( list1[index] )
        mergeList.append( list2[index] )
    return mergeList

```

5. What would be the output of the following code?

```

def f(a):
    for index in range(len(a)):
        if (index % 2 == 0):
            print( a[index].lower())
        else:

```

OUTPUT:

```

we
LOVE
python
WE
LOVE
PYTHON

```

```

        print( a[index] )

def main():
    x = [ "WE" , "LOVE", "PYTHON"]
    f(x)
    for i in x: print(i)

main()

```

6. Hashtags have become a popular addition to most social media platforms and can be used for easy categorization and association of posts. Many hashtags are a single word (#Midterms), but some are multiple words (#SpatulaKing, #midtermsAreCool). We would like to write an interpreter for hashtags to help convert them to a list of separated words like ["midterms", "are", "cool"]. You can trust that the person writing the hashtag has capitalized the first letter of every word after the first and no other capitals are in the string. You should make sure that your resulting list has no capitals.

Write a function, called `htl`, which will receive the hashtag, as a string, and will return a list of the words in the hashtag. For example:

```
htl("#midtermsAreCool") == ['midterms', 'are', 'cool'] htl("#SpatulaKing") == ['spatula', 'king']
```

You may assume that the parameter is a valid hashtag, beginning with a "#" and followed by a sequence of upper- and lower-case letters.

Code:

```

def htl (hashtag):
    res = []
    hashtag = hashtag[1:]
    i = 0
    while i != len(hashtag):
        if hashtag[i].isupper() == True and i != 0:
            res.append(hashtag[:i])
            hashtag = hashtag[i:]
            i = 0
        else:
            i += 1
    res.append(hashtag)
    return res

```