

Name : _____

Grading TA: _____

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- **DEVICES:** If your cell phone, pager, PDA, beeper, iPod, or similar item goes off during the exam, you will lose 10 points on this exam. Turn all such devices off and put them away now. You cannot have them on your desk.
- **ACADEMIC MISCONDUCT:** Academic misconduct will not be tolerated. You are to uphold the honor and integrity bestowed upon you by the Georgia Institute of Technology.
 - Keep your eyes on your own paper.
 - Do your best to prevent anyone else from seeing your work.
 - Do NOT communicate with anyone other than a proctor for ANY reason in ANY language in ANY manner.
 - Do NOT share ANYTHING during the exam. (This includes no sharing of pencils, paper, erasers).
 - Follow directions given by the proctor(s).
 - Stop all writing when told to stop. Failure to stop writing on this exam when told to do so is academic misconduct.
 - Do not use notes, books, calculators, etc during the exam.
- **TIME:** Don't get bogged down by any one question. If you get stuck, move on to the next problem and come back once you have completed all of the other problems. This exam has 8 questions on 8 pages including the title page. Please check to make sure all pages are included. You will have 50 minutes to complete this exam.

I commit to uphold the ideals of honor and integrity by refusing to betray the trust bestowed upon me as a member of the Georgia Tech community. I have also read and understand the requirements outlined above.

Signature: _____

Question	Points	Score
1. Vocabulary	6	
2. Multiple Choice	11	
3. DooWaa	6	
4. List Questions	4	
5. Alias vs. Copy	6	
6. Count Capitals	8	
7. Find Last Period	8	
8. Rank Days	10	
Total:	59	

1. (6 points)

For each of the following vocabulary terms, write a concise 1-2 sentence definition. Be brief, and to the point.

(a) [3 pts] exception

(b) [3 pts] increment

2. (11 points)

For each of the following multiple choice questions, indicate the best correct answer. Indicate your selected answer by circling it.

(a) [1 pt] Consider `a=[]`. Which of the following statements will produce a different result from the others?

A. `a.append([1,2,3])`

B. `a.extend([1,2,3])`

C. `a = a + [1,2,3]`

D. All of the above produce different results

E. None of the above produce different results

(b) [1 pt] Which of the following is not a valid operator?

A. `%` B. `/` C. `//` D. `**` E. All of these are valid operators

- (c) [1 pt] Which feature do Tuples and Strings have in common?
- A. They are immutable
 - B. They are sequences
 - C. They can be used as dictionary keys
 - D. All of the above
 - E. None of the above
- (d) [1 pt] Which of the following data types is iterable?
- A. `str` B. `dict` C. `bool` D. `int` E. `float` F. A and B G. A, B, and D H. All of these
- (e) [1 pt] A list can have a list as an element.
- A. True B. False
- (f) [1 pt] Which of the following data types are NOT sequences?
- A. Tuples B. Dictionaries C. Strings D. Lists E. All of these are sequences

Use the following code to answer the next two questions.

```
aList = [5, 10, 15, 20]
bList = 2 * aList
cList = bList
```

- (g) [1 pt] What list does `bList` reference?
- A. `[2, 5, 10, 15, 20]`
 - B. `[10, 20, 30, 40]`
 - C. `[5, 10, 15, 20, 5, 10, 15, 20]`
 - D. `[5, 10, 15, 20, 20, 15, 10, 5]`
- (h) [1 pt] Which of the following statements is true?
- A. `cList` is an alias of `bList`
 - B. `bList` is an alias of `aList`
 - C. `cList` is an alias of `aList`
 - D. `cList` is a copy of `bList`
- (i) [1 pt] Which of the following statements are correct?
- A. It is not possible to iterate through a dictionary.
 - B. `aDict.sort()` will throw an exception.
 - C. `aDict[[1,2,3]] = 'blue'` is a valid way to update a dictionary.
 - D. `aDict.get(45, None)` will never return `None`.
 - E. A and B are valid.
 - F. C and D are valid.

(j) [1 pt] What would the a variable point at after the following code is executed?

```
try:
    a = 2
    if a % 2 == 0:
        a = a+3
    a = a / 0
    a = a * 2
except:
    a = a + 3
    a = a / 2
```

A. 6.5 B. 4.0 C. 3.5 D. 3.0 E. 2.5 F. 2.0 G. 1.5

(k) [1 pt] Read the following segments of code.

```
a = 10
b = 20
c = 30
if a == 10:
    if b > 20:
        print("first")
elif b == 20:
    print("second")
if c > 35:
    print("third")
elif c <=35:
    if a < 50:
        print("fourth")
    if b > 0:
        print("fifth")
    else:
        print("sixth")
else:
    print("seventh")
```

Select a piece of text that is printed when it is executed:

- A. first is printed
- B. second is printed
- C. third is printed
- D. fourth is printed
- E. sixth is printed
- F. seventh is printed

3. (6 points)

Fill in the blanks so that, when run, the code below will output the following:

```
>>> func1()
DooWaa
Diddy
Diddy
Dum
Diddy
Doo
```

```
def func1():
    print( "DooWaa" )
    for i in range( _____ ):

        print( _____)

        if i == _____ :
            print("Dum")
    print("Doo")
```

4. (4 points)

Use the following code to answer the next two questions:

```
aList = [5,4,3,2,1]
bList = aList[1:4]
cList = []
cList.append(aList)
cList.append(aList)
```

(a) [2 pts] What is the contents of bList?

- A. [4,3,2]
- B. [5,4,3,2]
- C. [4,3,2,1]
- D. [5,4,3]

(b) [2 pts] Which of the following statements is true about cList?

- A. cList is a copy of aList
- B. cList is an alias of aList
- C. cList[0] is a copy of aList
- D. cList[0] is an alias of cList[1]

5. (6 points)

Pretend you are the Python interpreter and the following code has been entered and executed:

```
myList = [6, 3, (True, False), "Original"]
one = myList[:]
two = myList
three = one + ["Hello"]
one[2] = one[0] + one[1]
myList[1] = three[1:4:2]
two[3] = two[3]*2
one = one[2:]
three[0] = one[0]
```

For each of the three new lists (one, two, three), which are aliases and which are copies?

What are the values of each of the following variables:

myList =

one =

two =

three =

6. (8 points)

Write a function named `countCapitals` that takes in a string as its only parameter, and returns an integer count of the number of capital letters in the string.

Example run:

```
>>> result = countCapitals( "Hello There Wonderfull CS Student" )
>>> print( result )
6
>>>
```

7. (8 points)

You need to extract the file extension from a filename such as “GeorgeP.Burdell.gif”. To do this, you need to search through a string to find the position (index) of the LAST period. Write a function named **findLastPeriod** that takes a string as a parameter and returns the position of the last period in the string as an integer. If the string has no periods, return -1.

Example use case:

```
>>> x = findLastPeriod("test.txt")
>>> print(x)
4
```

8. (10 points)

Write a function named `rankDays` which takes in one parameter, `aList`. The list will be a list of tuples, with each tuple containing information in the format (Number Processed, Day of Week). The Day of Week will be a string (either "Monday", "Tuesday", "Wednesday", "Thursday", or "Friday"), and the Number Processed will be an integer. You should create and return a dictionary which has the day's "rank" (a number 1-5, with 1 corresponding to the day with the largest number of items processed) as a key and the corresponding day of the week as the value. The ranking criteria will be on the numbers of items processed each day. You may assume that no two days will share the same number of items processed (i.e. each day will have a uniquely different number of items processed).

Example test case:

```
>>> aList = [(456, "Monday"), (371, "Tuesday"), (2316, "Wednesday"),
(1371, "Thursday"), (17, "Friday")]
>>> myDict = rankDays(aList)
>>> print(myDict)
{1: 'Wednesday', 2: 'Thursday', 3: 'Monday', 4: 'Tuesday', 5: 'Friday'}
```