Final Exam

COMPSCI 115 – Python Programming

Exam Duration 100 minutes

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***Instructions:***

* ***Answers of Part I and Part II should be saved in this word document***
* ***Answer all the questions (4 analysis questions, 5 multiple choice questions and 3 problems solving)***
* ***Test your code and take a screenshot of the output***
* ***Upload Python file along with word document to BOLT***

**Part I: Analysis Questions**

Please Highlight the answer in yellow

1. (1 pt) How many times is the following loop body repeated? What is the printout of the loop?

i = 0

**while** i < 10:

**if** (i + 1) % 2 == 0:

print(i)

i += 1

10 times

1. (1 pt) Rewrite the following for loop using a while loop.

sum = 0

for i in range(100):

sum += i

sum = 0

i = 0

while i < 100:

sum += i

i += 1

1. (1 pt) Show the printout of the following code:

**def** main():

i = 1

**while** i < 10:

print(i, end = " ")

i = i + 3

main()

output:

1 4 7

1. (1 pt) What is the output of the following code?

def main():

print(xFunction(5672));

def xFunction(number):

result = 0

while number != 0:

remainder = number % 10

result = result \* 10 + remainder

number = number // 10

return result;

main()

output:

2765

**Part II: Multiple choice questions**

1. (1 pt) Variables defined in the function header are called \_\_\_\_\_.

A. parameters

B. arguments

C. global variables

D. local variables

1. (1 pt) A function sends the result back using \_\_\_\_\_\_\_.

A. a pass statement

B. a copy statement

C. a print statement

D. a return statement

1. (1 pt) To insert 5 to the third position in list1, use \_\_\_\_\_\_\_.

A. list1.insert(2, 5) #second index is the third position

B. list1.append(3, 5)

C. list1.add(3, 5)

D. list1.insert(3, 5)

1. (1 pt) What is the output of the following code?  
     
   myList = [1, 2, 3, 4, 5, 6]  
   for i in range(1, 6):  
       myList[i - 1] = myList[i]  
     
   for i in range(0, 6):   
       print(myList[i], end = " ")

A. 6 1 2 3 4 5

B. 2 3 4 5 6 1

C. 1 1 2 3 4 5

D. 2 3 4 5 6 6

E. 2 3 4 5 6 1

1. (1 pt) What is the output of the following code?  
     
   def f(values):  
       values[0] = 44  
     
   v = [1, 2, 3]  
   f(v)  
   print(v)

A. [1, 2, 3, 44]

B. [44, 2, 3]

C. [1, 2, 3]

D. [1, 44]

**Part III: Problem Solving**

1. (3 pts) Write a function names sumAndproduct() that calculates the sum and the product of the digits of a *number* entered by a user. For example

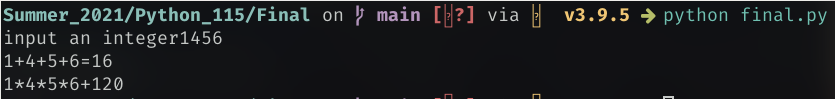
If the user entered 1456:

Output:

Sum is 1+4+5+6= 16

product is 1\*4\*5\*6=120

output:



1. (2 pts) Suppose the salaries of six employees are given below. Write a program to create function named getEmployeesInfo()that enter the names and salaries from a user input to store them in a dictionary:

John: 64000

Robert:79000

Christina: 87000

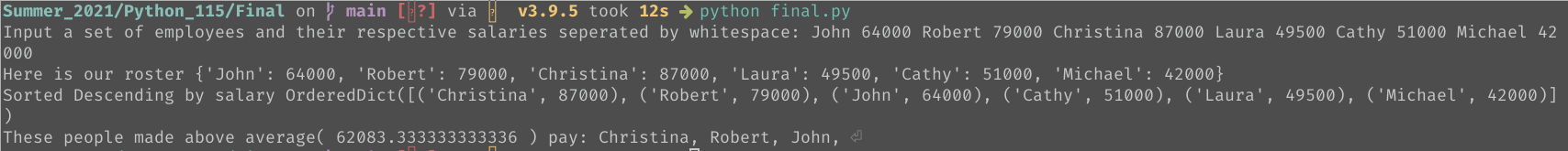
Laura: 49500

Cathy: 51000

Micheal:42000

(2 pts) Write a program to create a function named employees() that accepts a parameter dictionary. The function sorts the employees based on salaries from highest to the lowest. Also, it returns those employees who have salaries higher than the average. To test your program, invoke getEmployeesInfo()and employees() in the main function main()

outputs:



1. (2 pts) Write the following function that returns true if the list is already sorted in increasing order:

**def** isSorted(lst):

Write a test program that prompts the user to enter a list and displays whether the list is sorted or not. Here is a sample run:

<output>

Enter list: 1 1 3 4 4 5 7 9 10 30 11

The list is not sorted

<end output>

<output>

Enter list: 1 1 3 4 4 5 7 9 10 30

The list is already sorted

<end output>

Here is the outline of the program:

def main():

# Fill in the code here

def isSorted(list):

# Fill in the code here

main()

output:

