Did you hear about the monkeys who shared an Amazon account? Thank you, Nicolas!

They were Prime mates!

Source: https://www.rd.com/jokes/computer/

CMPT 120

Lecture 28 – Practice Exam 8

In-Class Activity

Course grading scheme on our course website: **Best 7 in-class** exercises out of 10: 1% each, for a total of 7%

- Our in-class activity #8 -> 1%
 - Write your answer to question _____ on the provided sheet of paper
 - Write your lastname, firstname and student number
 - At the end of today's class, hand in your sheet of paper in the appropriate pile:
 - Pile 1 -> if your lastname start with a letter that is between 'A' and 'L'
 - Pile 1 is on your left-hand side of the classroom
 - Pile 2 -> if your lastname start with a letter that is between 'M' to letter 'Z'
 - Pile 2 is on your right-hand side of the classroom

Try to answer the questions 1st without using your computer, then confirm your answer using IDLE!

Theory and Understanding

What colour would a pixel with RGB value (0, 0, 50) appear to be? Answer this question without using a color picker app online.

(A) Dark red
(B) Light red
(C) Dark green
(D) Light green
(E) Dark blue
(F) Light blue



 Hand trace the code fragment below. What does it produce? To answer this question, show the content of the variable grid.

```
# Set variables
row = 5
column = 3
symbol = " - "
grid = list()
# Create a grid
for aRow in range(row):
    listRow = list()
    for aColumn in range(column):
        listRow.insert(aColumn, symbol)
    grid.insert(aRow, listRow)
```

 Hand trace the code fragments below. What do they produce on the computer monitor screen?

Code Fragment 1:

print(grid)

Code Fragment 2:

for aRow in range(row):
 print(grid[aRow])

Code Fragment 3:

Print the list using join() method
for aRow in range(len(grid)):
 print(' '.join(grid[aRow]))



- bList = list("123")
- print(bList)
- bList = bList + ['4']
- print(bList)
- cList = list("123")
- print(cList)

```
cList.append('4')
```

print(cList)

- -> this print statement produces:





1. Is pies A and pies B the same variable?

2. If not, what is pies A?

What is pies B?

Given the image **raspberries.jpg** below, what does the following code output (approximately)?

from PIL import Image

rasp = Image.open("raspberries.jpg").load()
raspberries.jpg is 800 x 534 pixels

print(rasp[5,400])
print(rasp[400,0][0])
print(rasp[200,100][0])



raspberries.jpg Attribution: "Fir0002/Flagstaffotos"

Below is a drawing of a possible maze from our Assignment 4. The maze below is quite simple: it is made of 3 rows and 5 columns. As we are doing our Assignment 4, we shall need to recompute the location of the turtle navigating the maze. To prepare us for this computation, consider the four blue dots representing various locations of our turtle in the maze. These four blue dots, along with the red dot, are at the centre of a cell.

- 1) What is the size of a cell?
- 2) Compute as precisely as you can each blue dot's coordinates (column, row).



Coding —

Try to solve the problem (i.e., write your Python program) 1st on a piece of paper without using your computer!

Step 1 – Problem Statement

Write a function that, given a pixel, returns the greyscale value of that pixel.



12

Question 8 – cont'd

Step 2 – Design

To create the greyscale value of a pixel one needs to average the pixel's rgb values: int((r+g+b)/3)

 Btw, why do we use parentheses around r+g+b? Why not using int (r+g+b/3)?

Question 8 – cont'd

Step 1 – Problem Statement – cont'd

Add your function to our **myColourModule.py** module, then use this module in a program that transforms a colour image into a greyscale image.

