

What did the computer
do at lunchtime?

Thank you,
Hassan!

Had a byte!

Source: <https://www.ducksters.com/jokes/computer.php>

CMPT 120

Lecture 26 – Practice Exam 7 - SOLUTION

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 #7** -> 1%
 - Write your answer to question **_5_** 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

Question 1 - Comments!

- Considering the Python code fragment below, which comment would be the most descriptive **Comment 1** or **Comment 2** ?

```
33  for i in range(height):
34      for j in range(width):
35          r = imageKidGreen[i,j][0]
36          g = imageKidGreen[i,j][1]
37          b = imageKidGreen[i,j][2]
```

Comment 1:

Create a nested for loop using range

Comment 2:

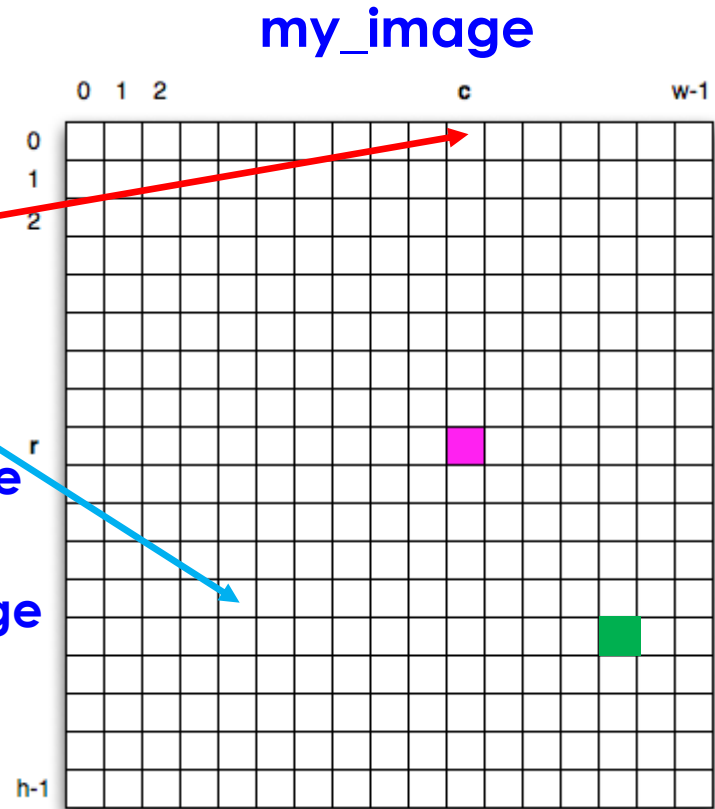
Go through each pixel of A

assuming **A** means **imageKidGreen**

Question 2

If $w = 17$ and $h = 18$ and
(..., ...) is a tuple with the syntax
(column, row) ...

- a. where is the pixel
`my_image[10, 0]`?
- b. where is the pixel (4, 12)?
- c. where is the pixel (**17, 18**)?
- d. where is the pixel
`my_image[18, 17]`?
- e. What is the location of the **pink**
pixel? **(10, 8), `my_image[10, 8]`**
- f. What is the location of the
green pixel? **(14, 13),
`my_image[14, 13]`**



For e. and f., express the location
using both syntaxes seen above.

Coding

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

Question 3

Step 1 - Problem Statement

Imagine the file `SomeSymbols.txt` contains the following:

W
S
E
O

Write a program that reads these four symbols into four variables: **`symbol1`**, **`symbol2`**, **`symbol3`**, **`symbol4`**, all of **`str`** type.

Requirement

The content of these four variables must be such that `print(f' {symbol1} , {symbol2} , {symbol3} , {symbol4} ')` produces

W, S, E, O

on the computer monitor screen, where all four symbols are printed on one line.

Question 4

Step 1 - Problem Statement

Imagine the file `myMaze.txt` contains the following:

```
W W W W W W W W W W W W W W W W W W W
E 0 W 0 W 0 0 0 W 0 0 0 0 W W 0 0 0 W
W 0 W 0 W W W 0 W W W 0 W 0 W 0 W W W
W 0 0 0 W W 0 0 W 0 0 0 0 0 0 0 0 W
W 0 W 0 0 0 W 0 W 0 W W W 0 W 0 W W W
W 0 W 0 W W W 0 W W W W W W W 0 0 W W
W W W 0 W W W W W 0 0 0 0 0 0 0 W W W
W W W 0 0 0 0 0 0 0 W W W 0 W 0 0 W W
W 0 W 0 W W W W W 0 W W W 0 W 0 W W W
W 0 0 0 W 0 0 0 0 0 0 0 W 0 W 0 0 0 S
W W W W W W W W W W W W W W W W W W W
```

Write a program that reads this into a variable that is a list of lists and prints it as a maze (grid).

Question 5

Step 1 - Problem Statement

Write a function that returns the *colour* of a given pixel as a string (using the table below)

- **Sample input:** (0, 255, 0)
- Expecting the function to return: **“green”**
- **Requirement:**
 - You must use a dictionary
 - The pixel is expressed as a tuple (r,g,b)
- Possible return values:
“red”, “green”, “blue”,
“white”, “black”,
“yellow”, “magenta”
or “cyan”

Color	Red	Green	Blue
Red	255	0	0
Green	0	255	0
Blue	0	0	255
White	255	255	255
Black	0	0	0
Yellow	255	255	0
Magenta	255	0	255