What did the computer do at lunchtime?

Had a byte!

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

Thank you, Hassan!

CMPT 120

Lecture 26 – Practice Exam 7

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 ____ 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

Theory and Understanding

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

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
```

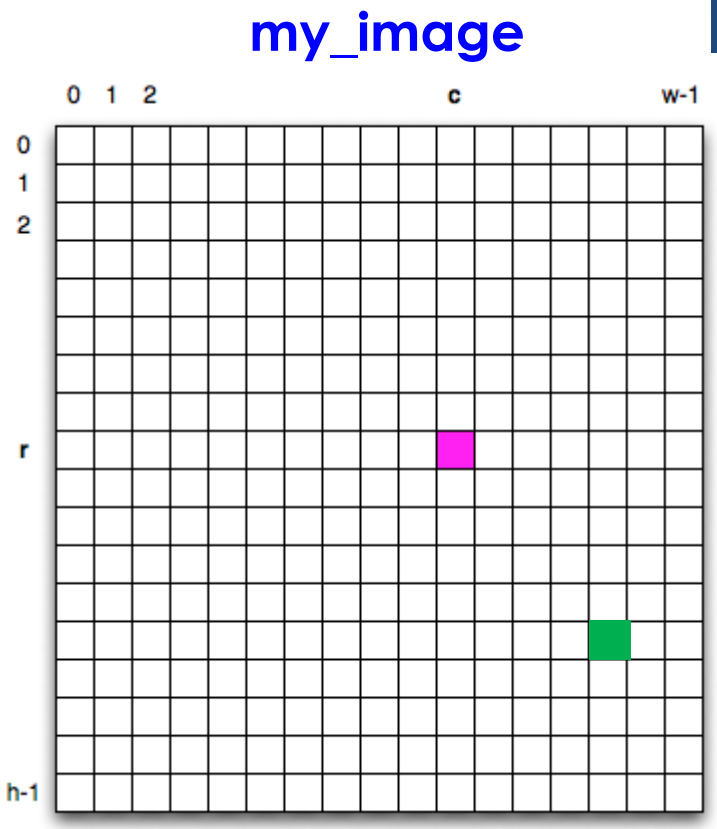
assuming **A** means **`imageKidGreen`**

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?
f. What is the location of the **green** pixel?

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
0
```

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, 0
```

on the computer monitor screen, where all fours 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 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