App3: Math Painting (Student Project)

Outside pagage:

# Numpy: # [detailed introduction](https://www.youtube.com/watch?v=QUT1VHiLmmI&t=688s) & [detailed code](https://github.com/KeithGalli/NumPy)

# Pillow: # image tool

# In this project, we use numpy to make 3D array to indicate the pixels #

# For more info on numpy, click the link above.

import numpy as np

from PIL import Image

data = np.zeros( (\*width (int) , \*length (int) , 3), dtype = np.uint8)

# To create a canvas filled with 0s

# dtype= np.uint8, means to set dtype range from 0 to 255, indicating the pixel

data[:] = [255, 255, 0 ] # to set the canvas color to yellow

data[1, 2] = [255, 23, 121] # to draw a rectangle by changing the pixels numbers

…

img= Image.fromarray(data, “RGB”) # convert the np array to image

img.save(“canvas.png”)