import cv2

import numpy as np

image = cv2.imread('input.jpg')

resized\_image = cv2.resize(image, (800, 600))

colors = {

"Pringles": (0, 0, 255),

"Coca-Cola": (244, 194, 194),

"Kellogg's Corn Flakes": (255, 0, 0),

"Lay's": (0, 255, 0),

"Penne": (0, 255, 255),

"Eleolys": (255, 175, 0),

"Empty Space": (255, 255, 255)

}

boxes = {

"Pringles": [(17, 40, 155, 300)],

"Coca-Cola": [(200, 40, 450, 300),

(17, 340, 210, 580)],

"Kellogg's Corn Flakes": [(460, 40, 650, 300)],

"Lay's": [(660, 40, 790, 300)],

"Penne": [(520, 340, 650, 580)],

"Eleolys": [(660, 340, 790, 580)],

"Empty Space": [(220, 340, 510, 580)]

}

product\_counts = {product: len(box\_list) for product, box\_list in boxes.items()}

for product, box\_list in boxes.items():

for box in box\_list:

x1, y1, x2, y2 = box

cv2.rectangle(resized\_image, (x1, y1), (x2, y2), colors[product], 2)

cv2.putText(resized\_image, product, (x1, y1 -10), cv2.FONT\_HERSHEY\_SIMPLEX, 0.5, colors[product], 2)

text\_canvas = np.zeros((250, 800, 3), dtype=np.uint8)

y\_offset = 30

for product, count in product\_counts.items():

text = f"{count} {product}" + (" bottles" if product == "Coca-Cola" else ("s" if count > 1 else ""))

cv2.putText(text\_canvas, text, (10, y\_offset), cv2.FONT\_HERSHEY\_SIMPLEX, 0.7, (255, 255, 255), 2)

y\_offset += 30

output = np.concatenate((resized\_image, text\_canvas), axis=0)

cv2.imshow('Retail Shelf Inventory Monitoring', output)

cv2.waitKey(0)

cv2.destroyAllWindows()