Universidad Nacional Autónoma de México

Facultad de Ingeniería

Reconocimiento de Patrones

**PROYECTO FINAL**

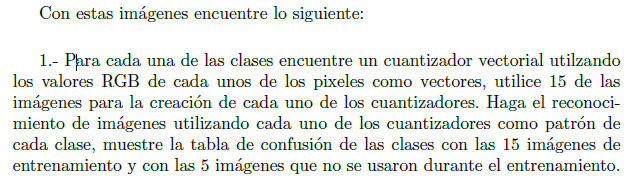
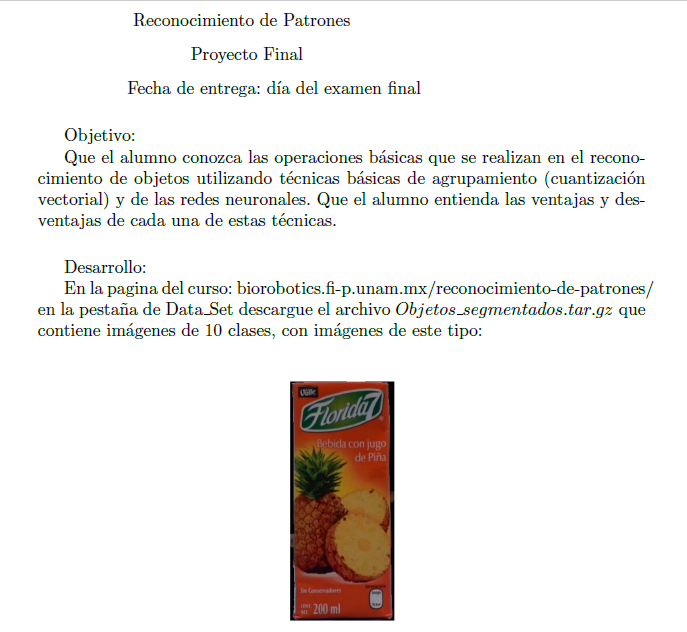
Alumnos:

Carrillo Hernández Juan C.

Silva Barrera Brandon

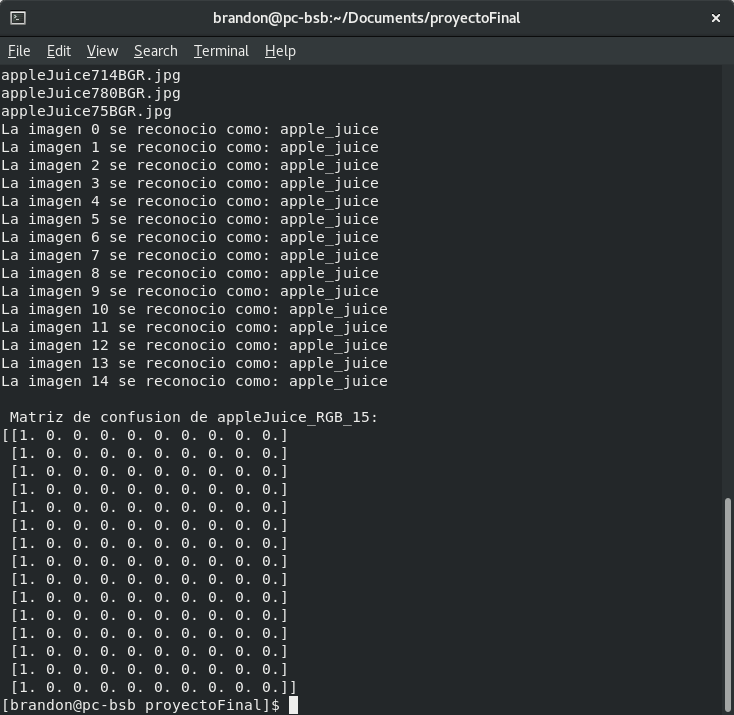
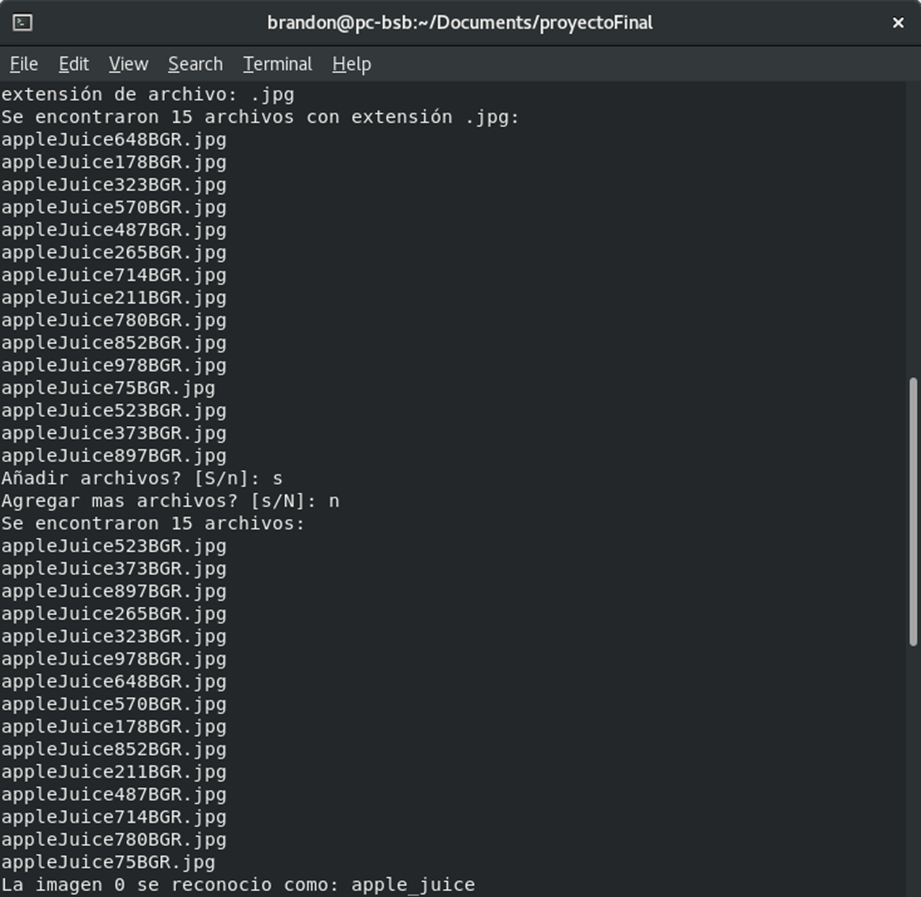
Grupo de teoría: 2

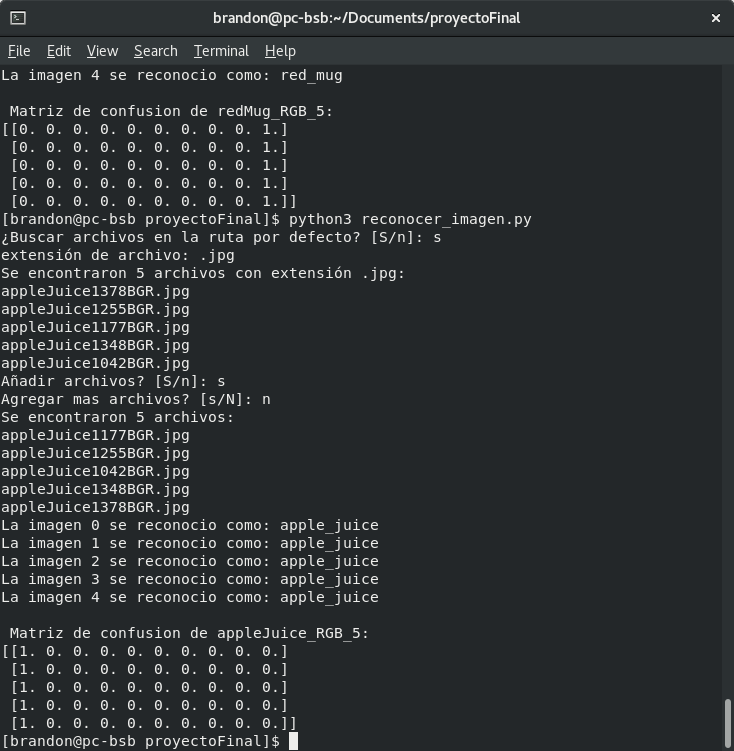
Fecha de entrega: 10/01/22



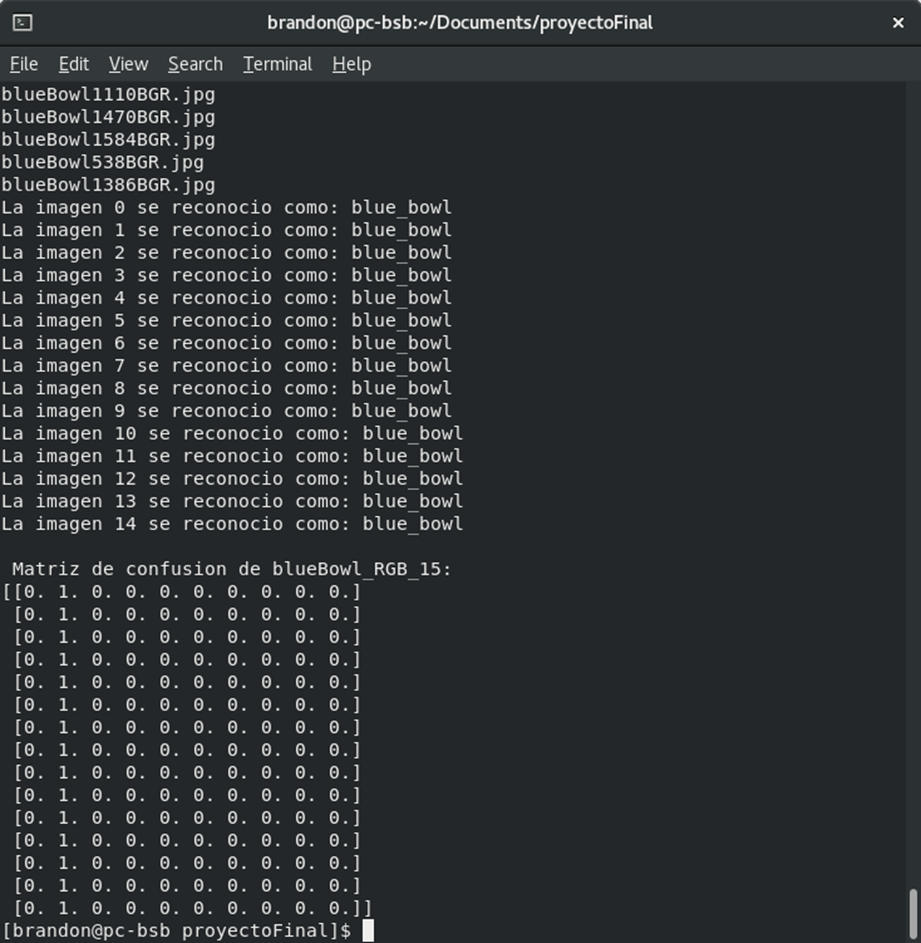
Se usaron ocho regiones para crear los cuantizadores.

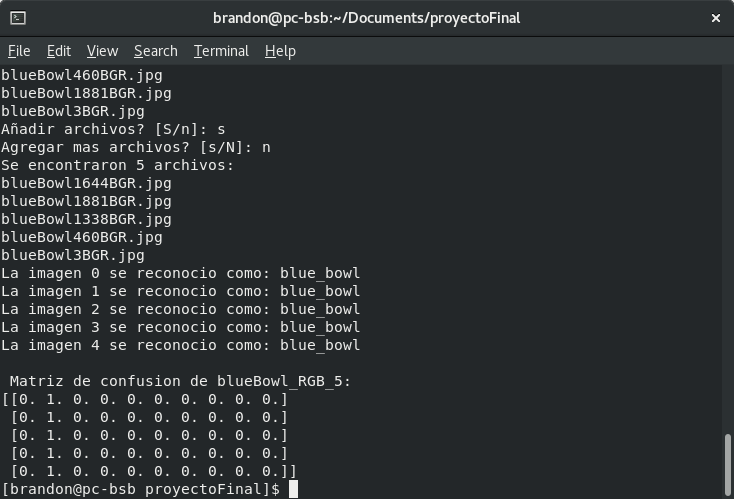
Apple juice



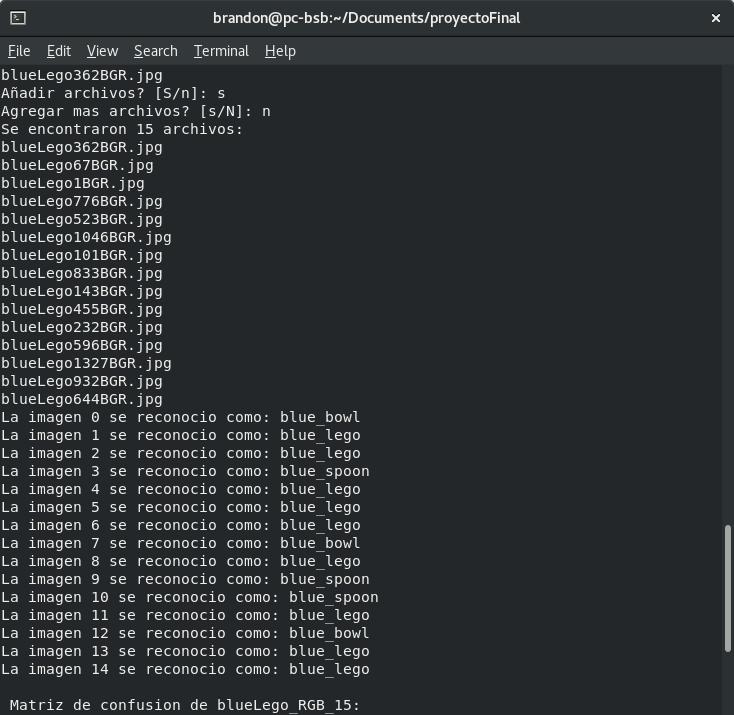


Blue bowl

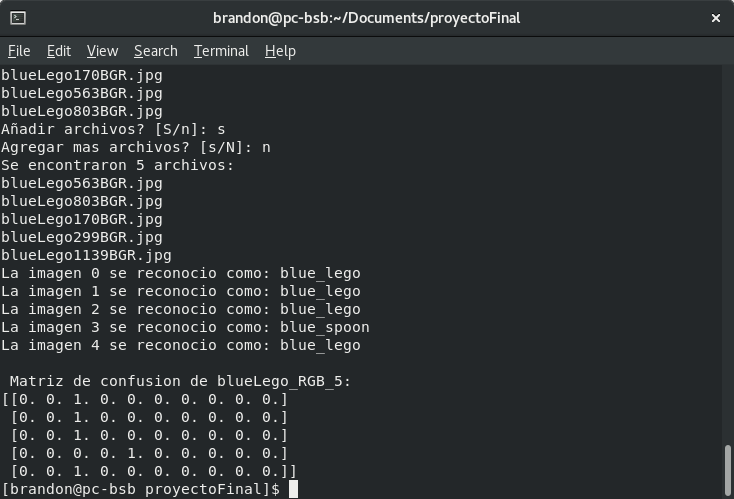




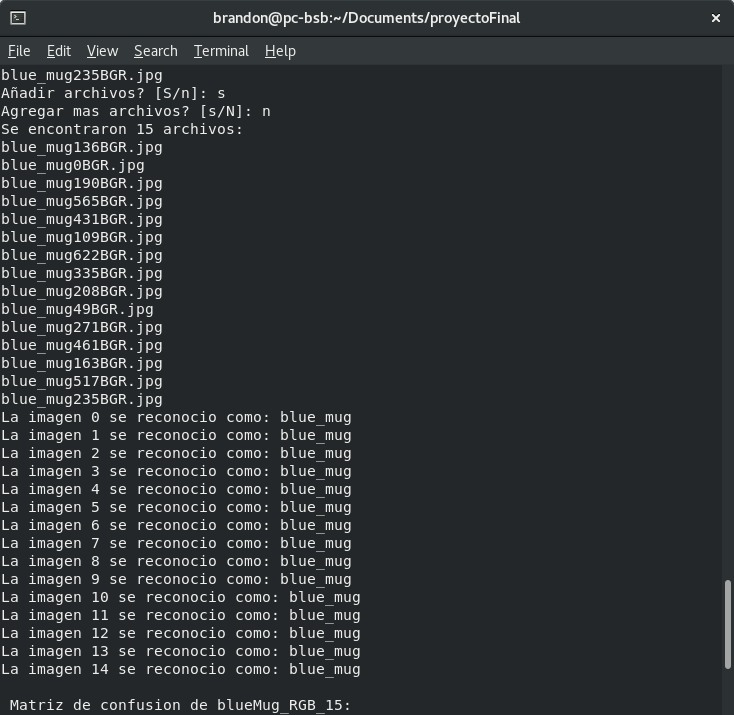
Blue lego

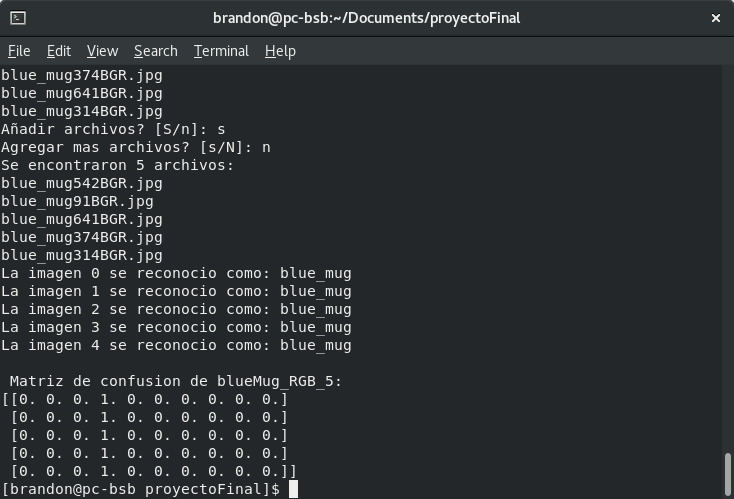




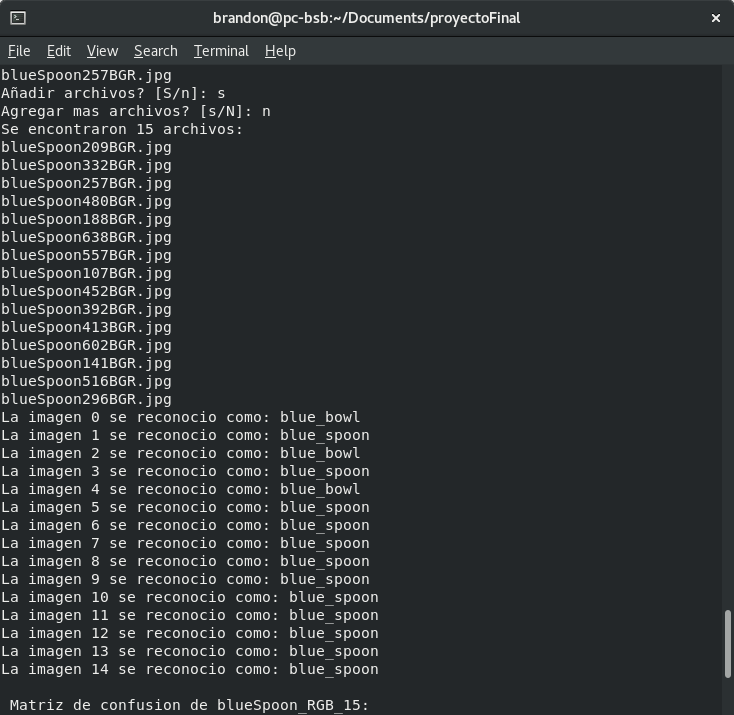


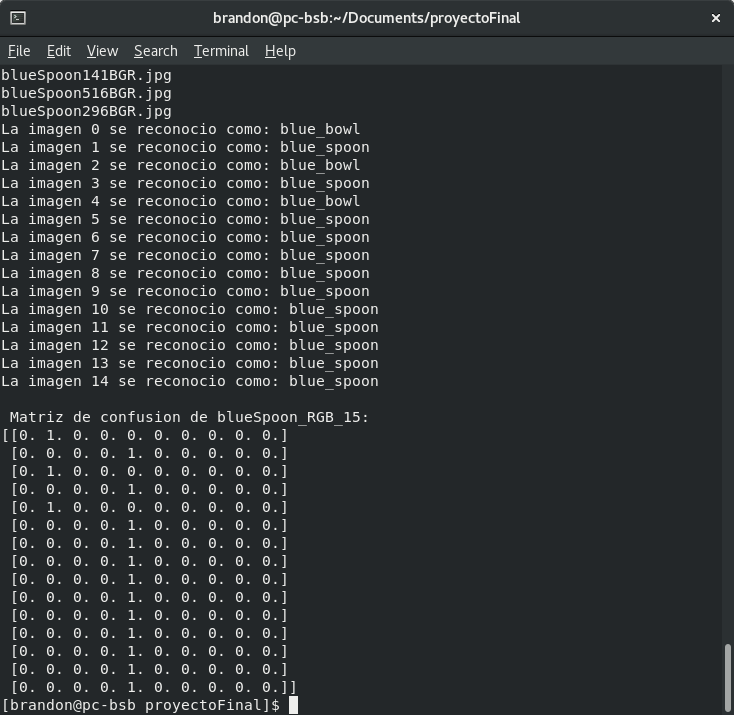
Blue mug

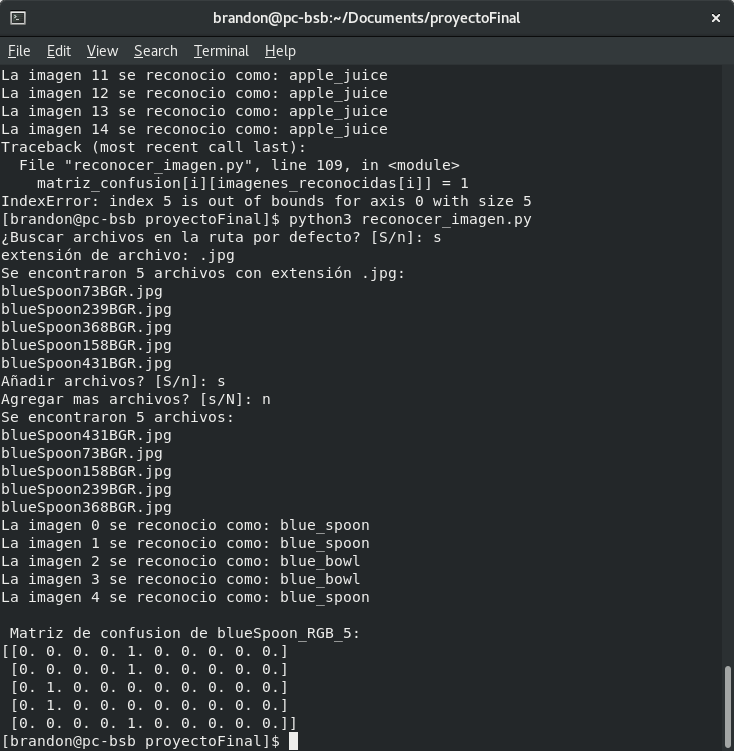




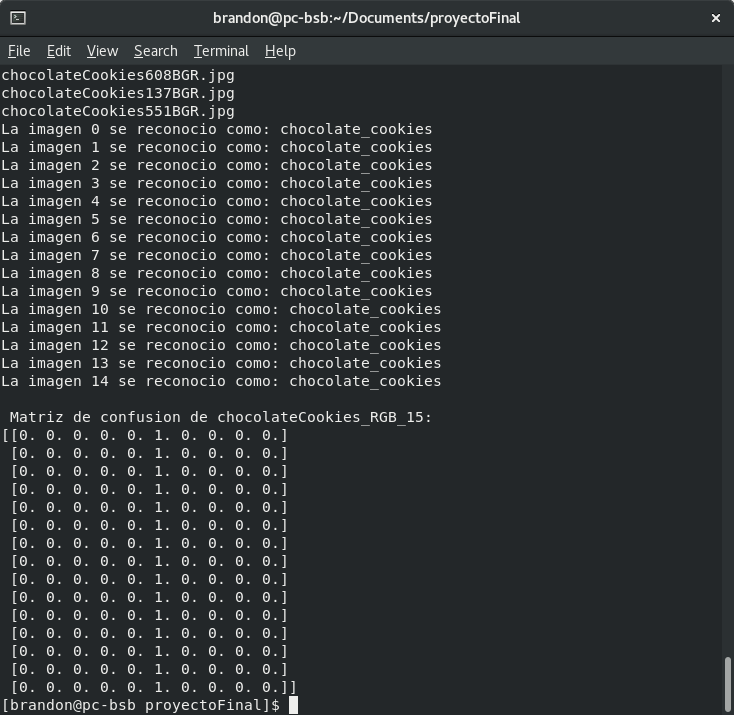
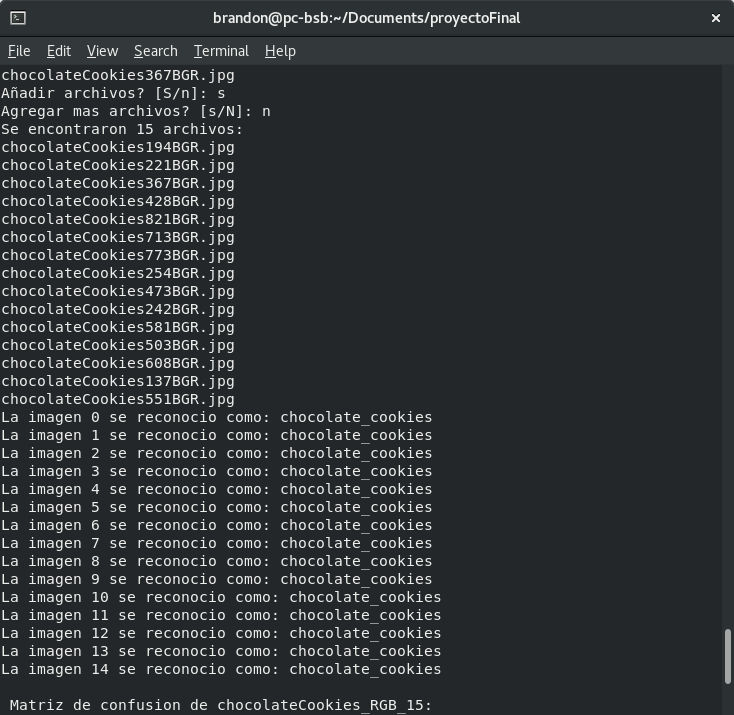
Blue spoon

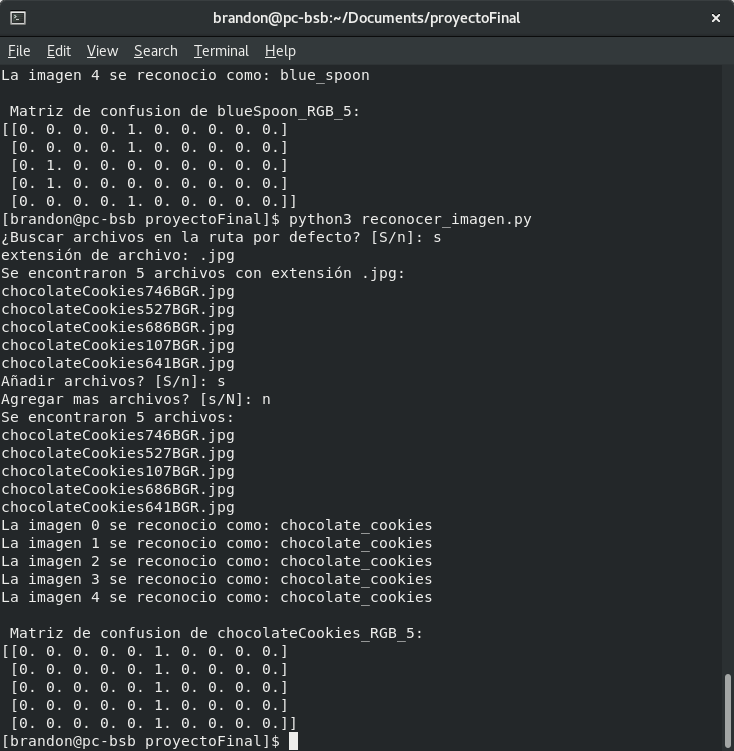




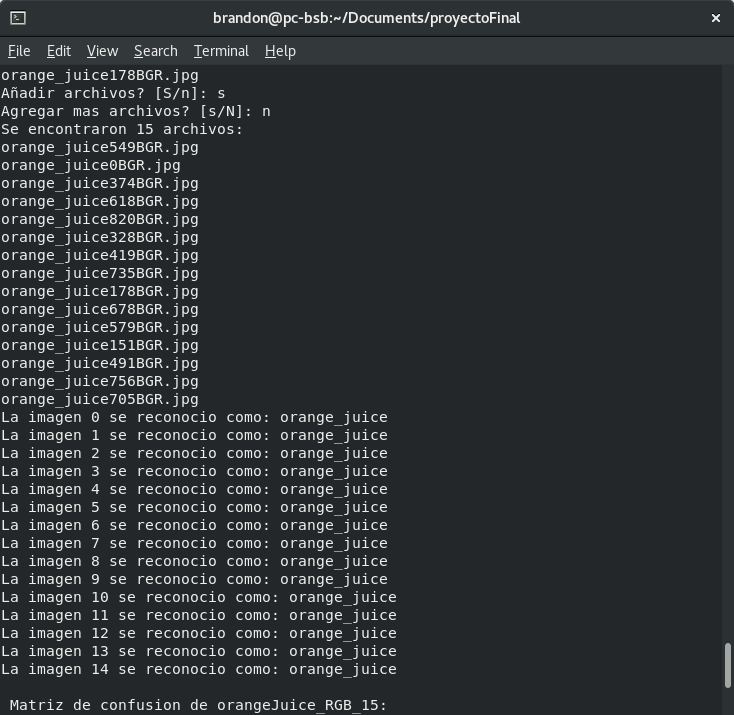


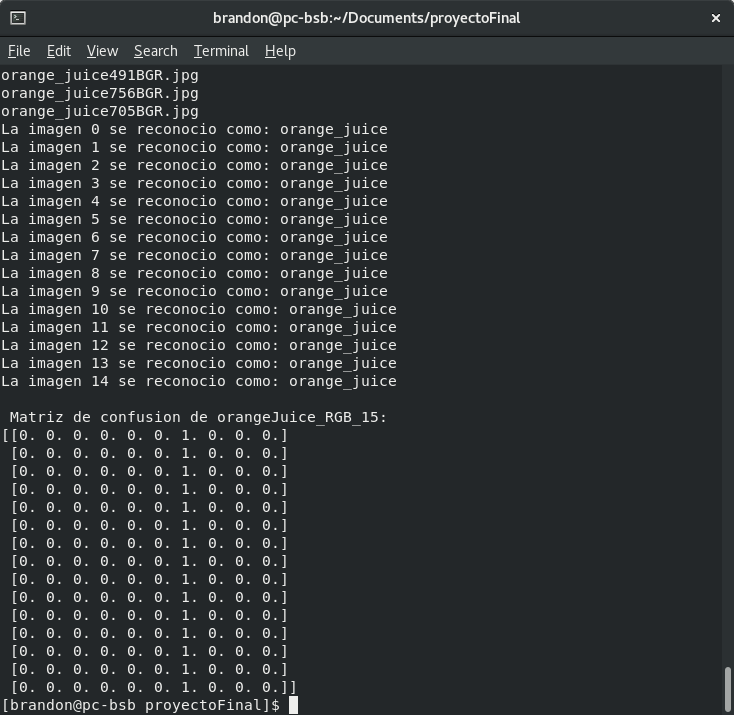
Chocolate cookies

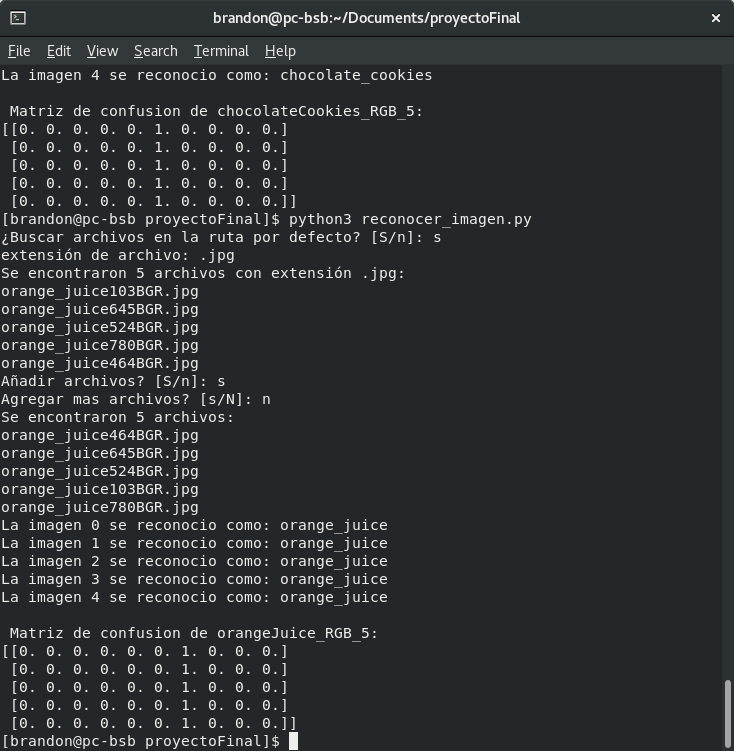




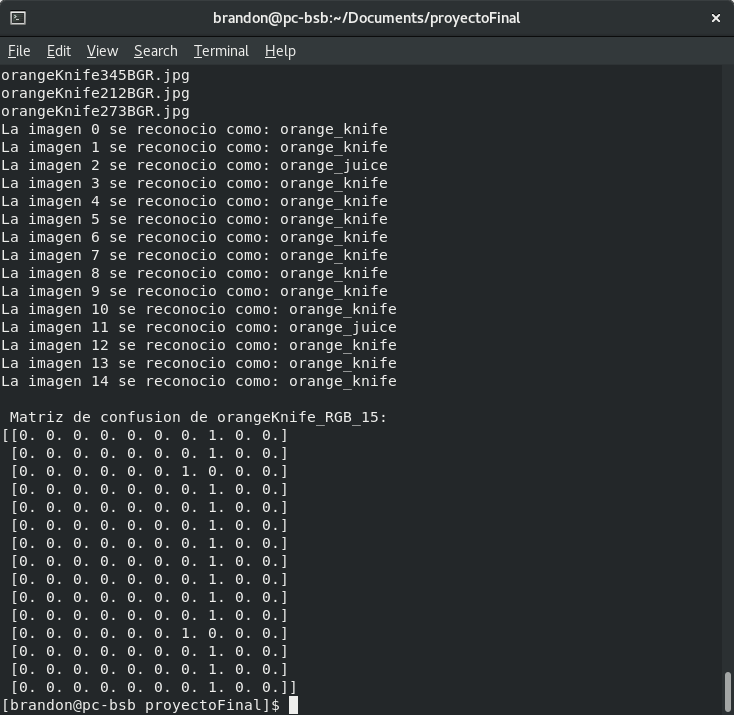
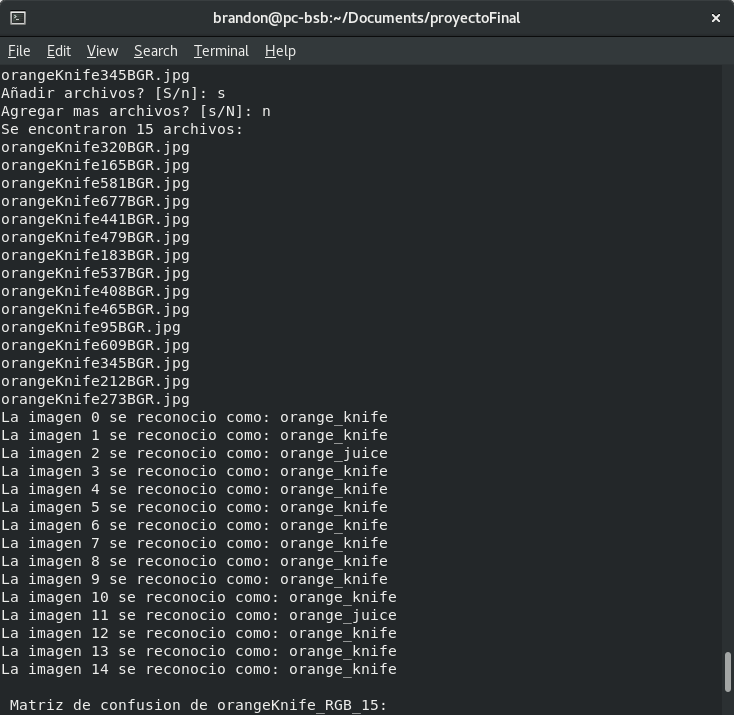
Orange Juice

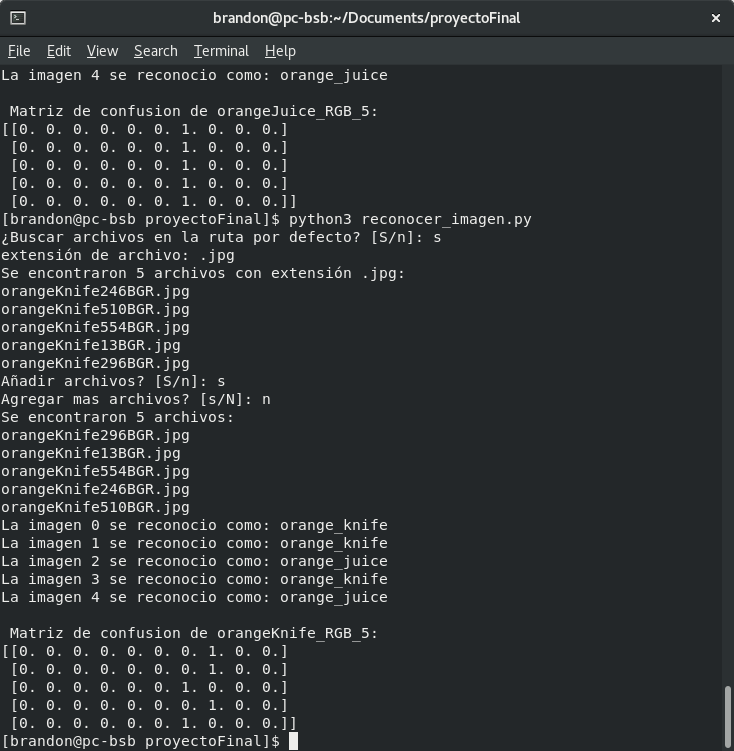




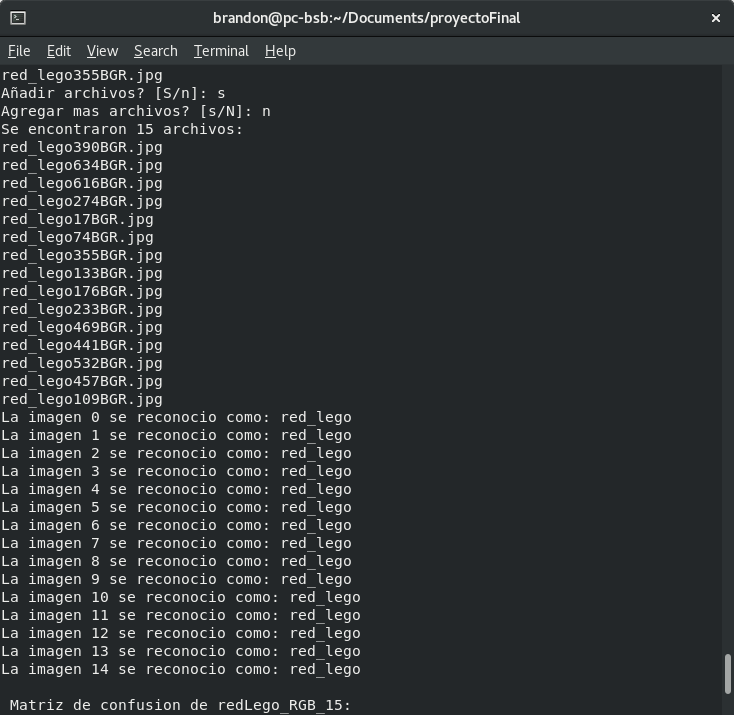


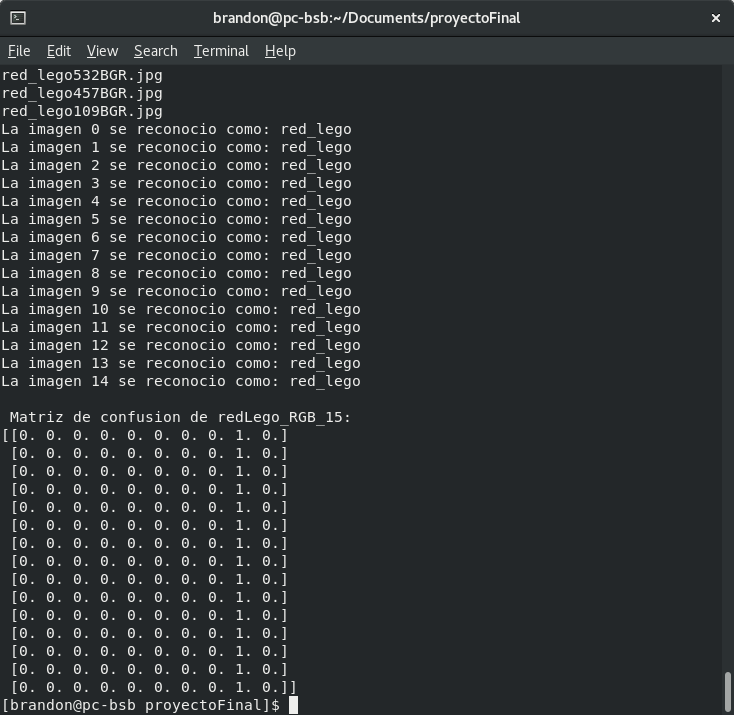
Orange knife

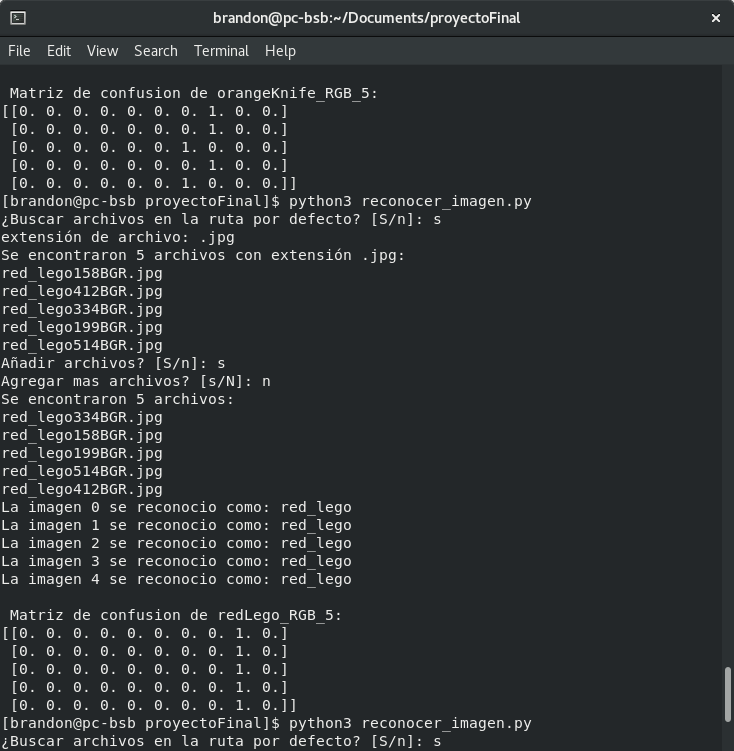




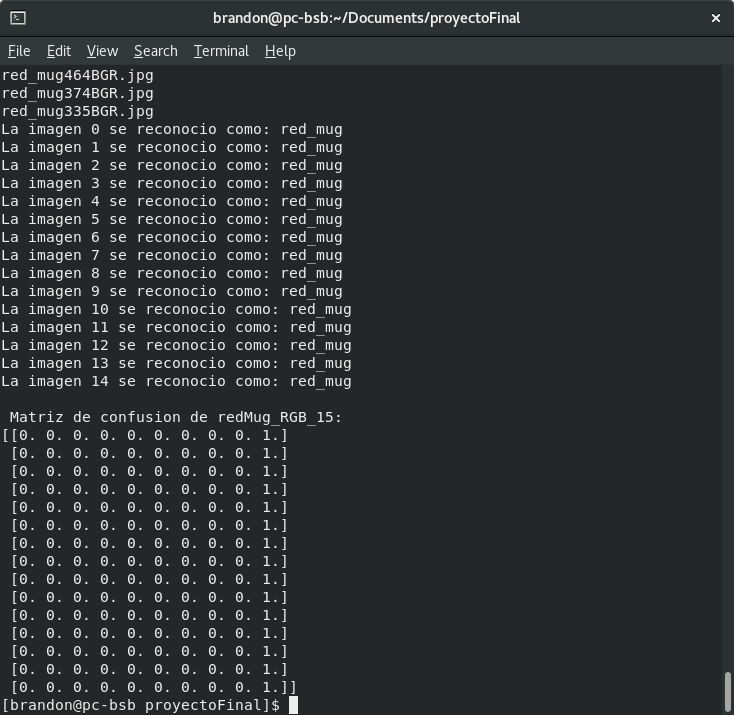
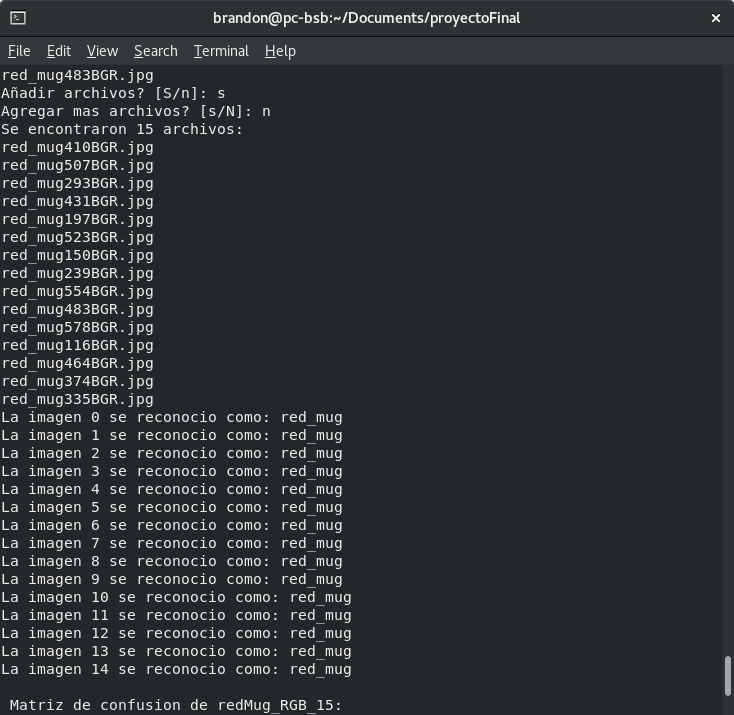
Red lego

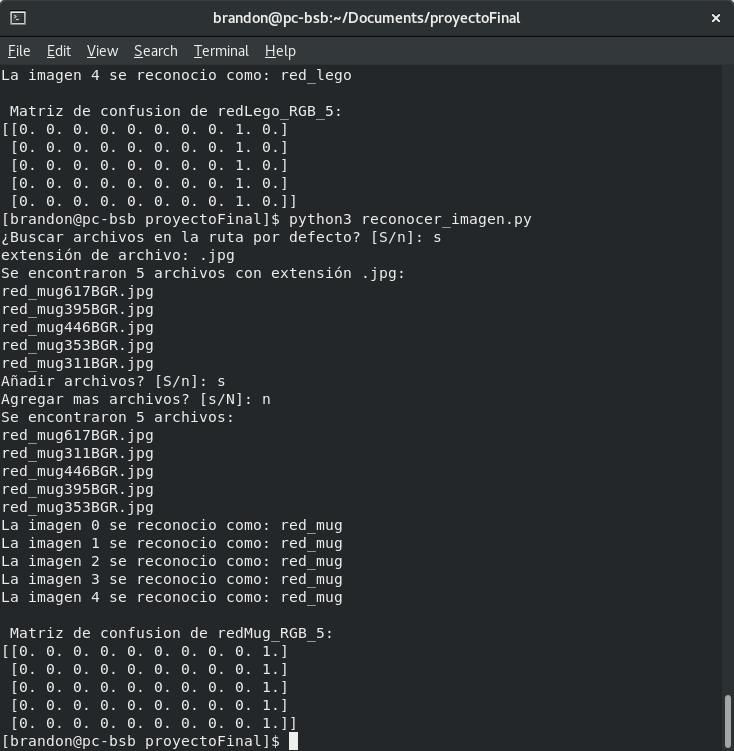




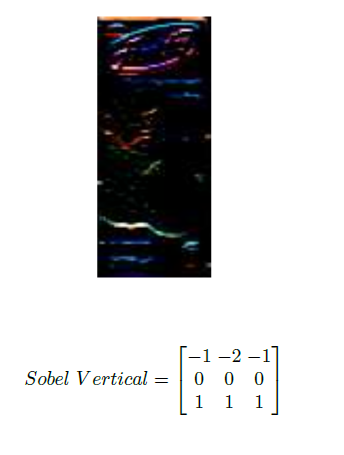


Red mug

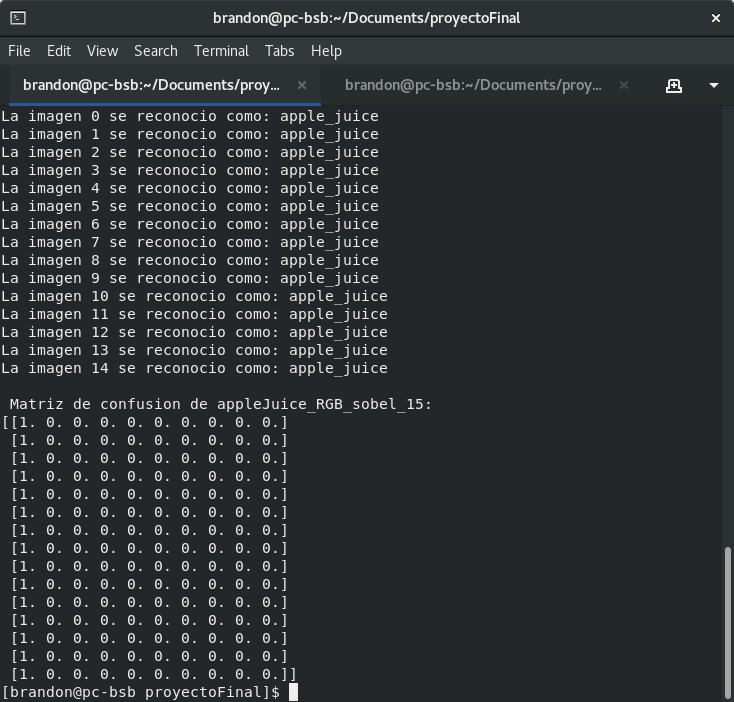
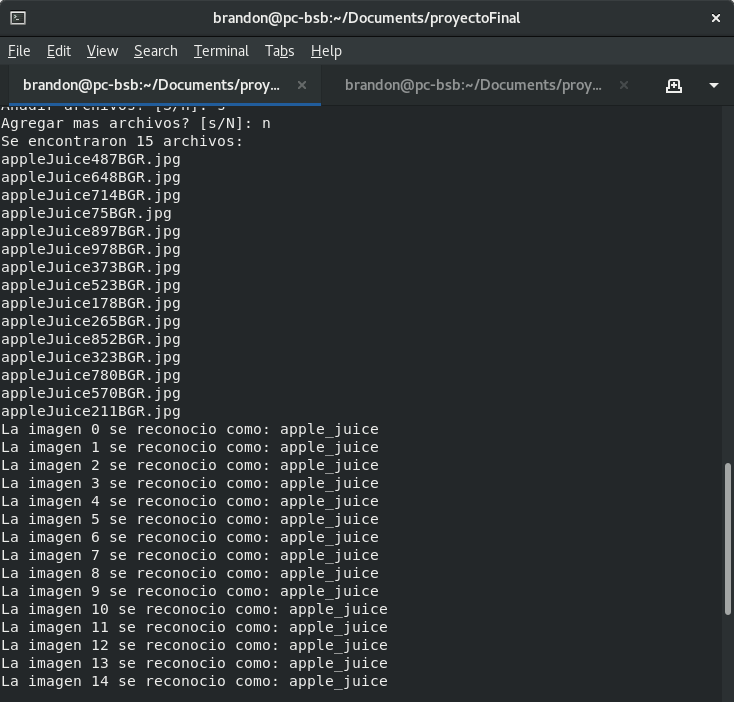


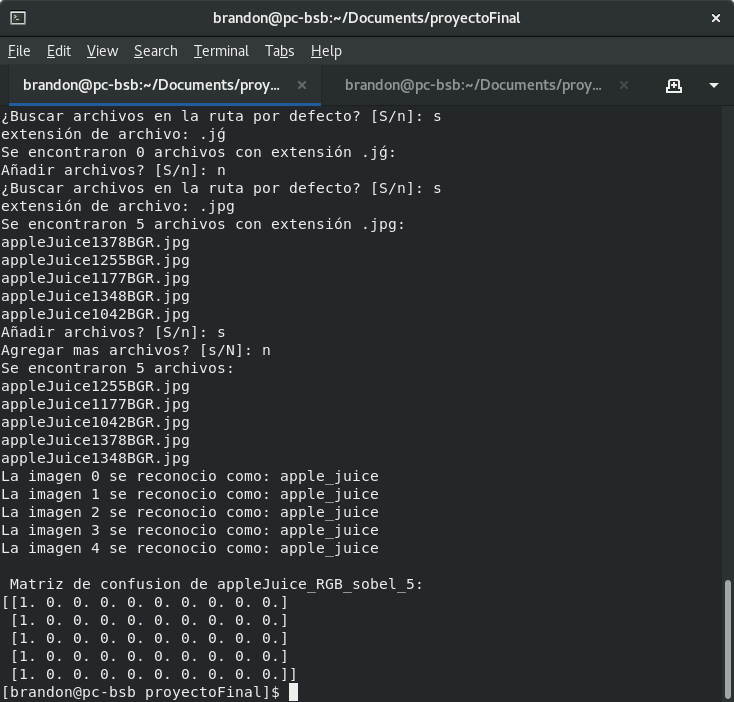




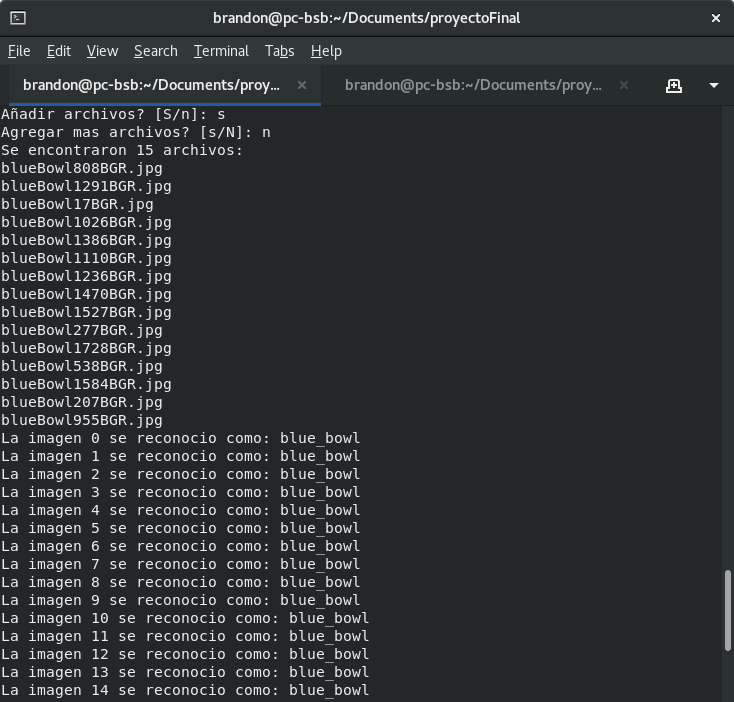


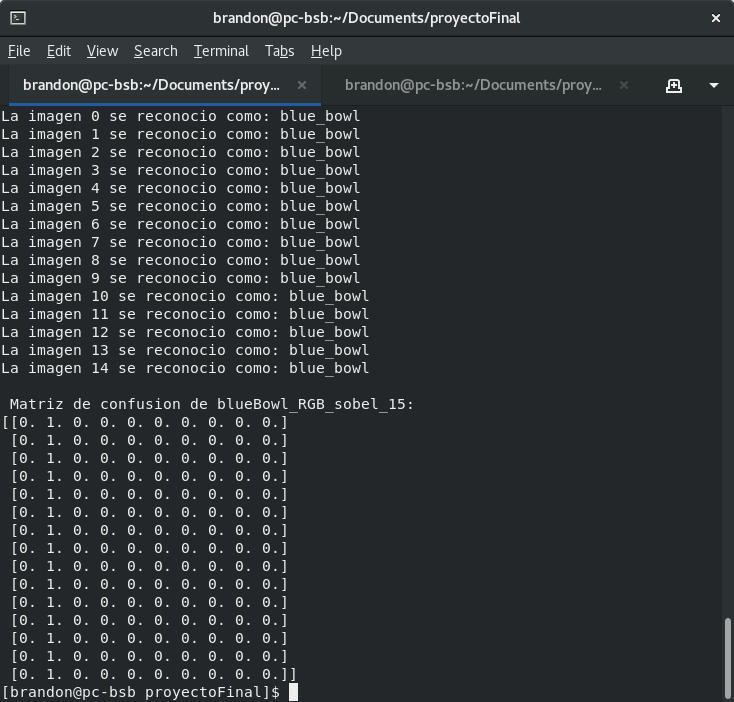
Apple juice

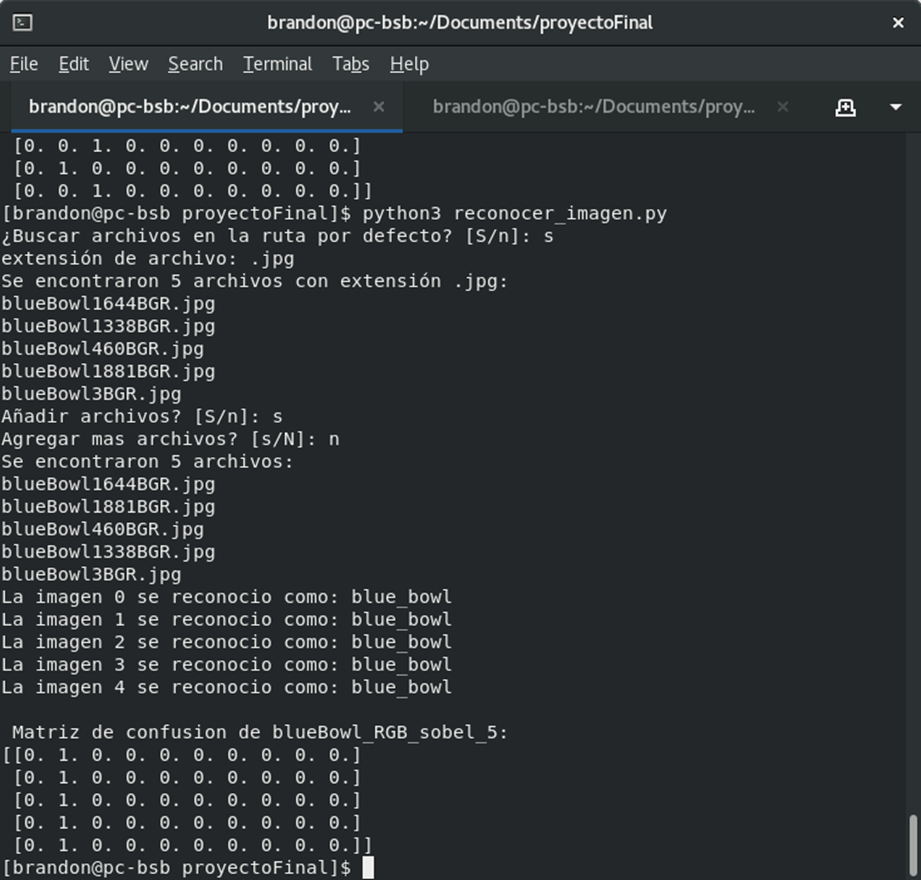




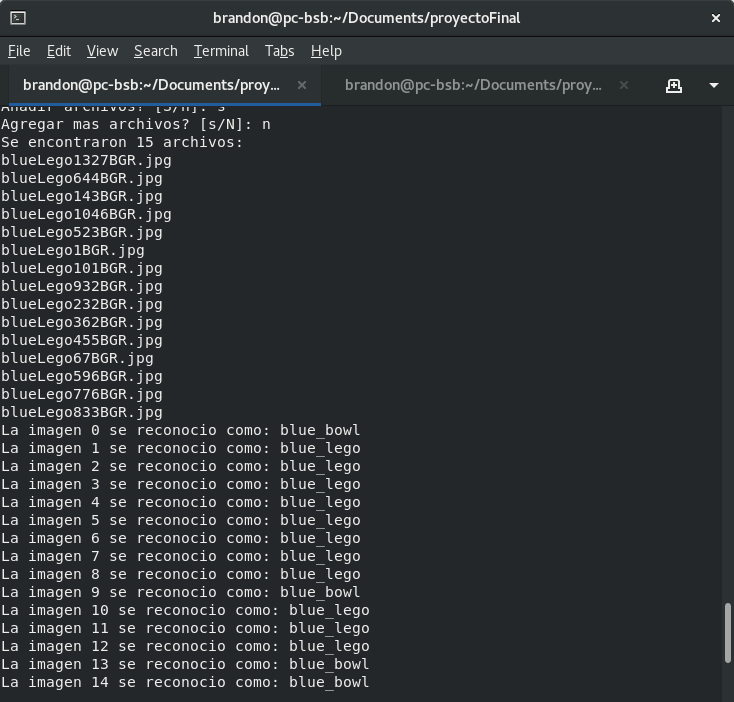
Blue bowl

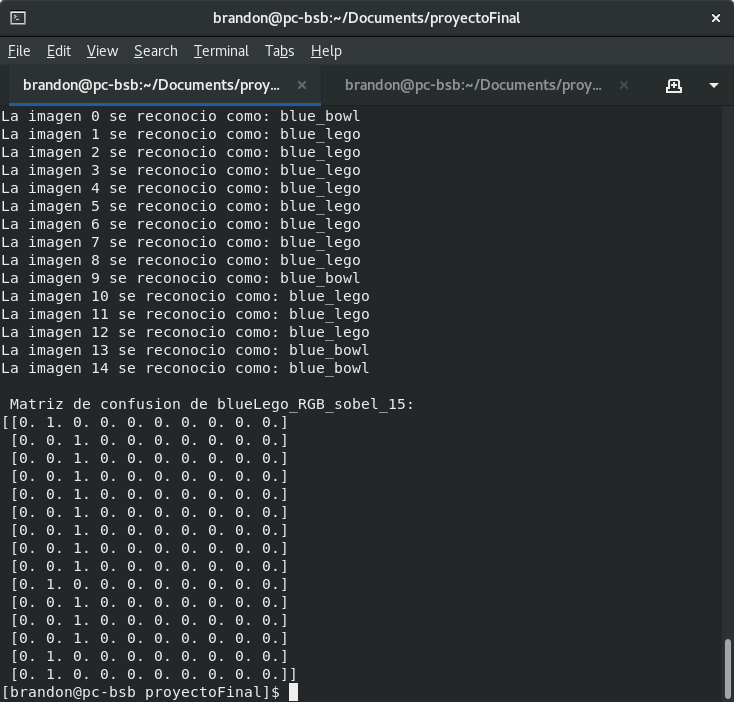


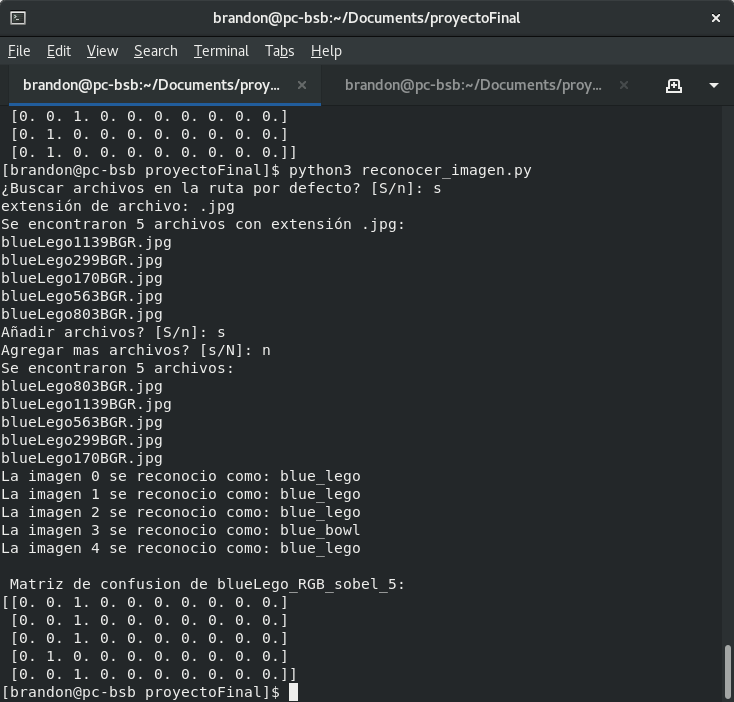




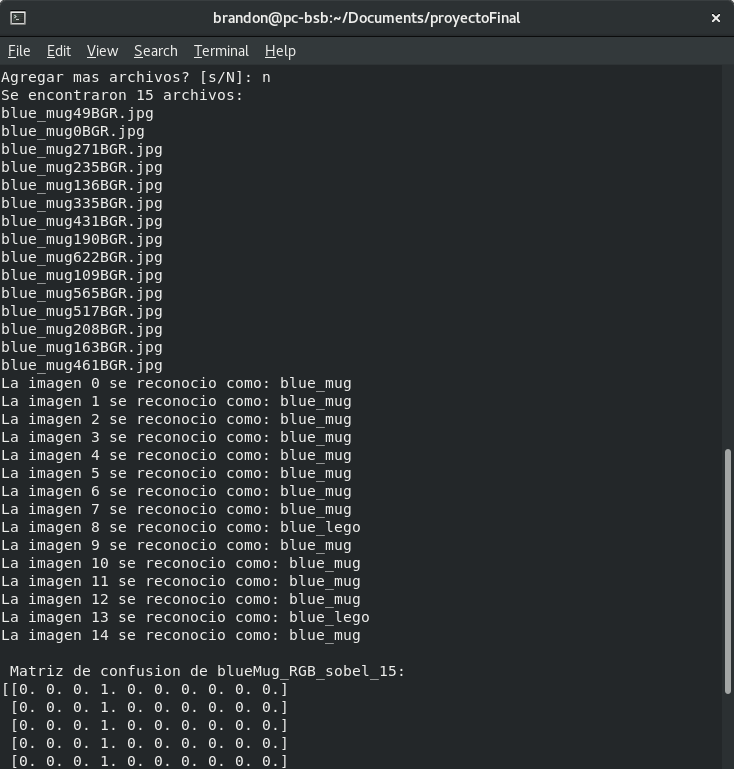
Blue lego

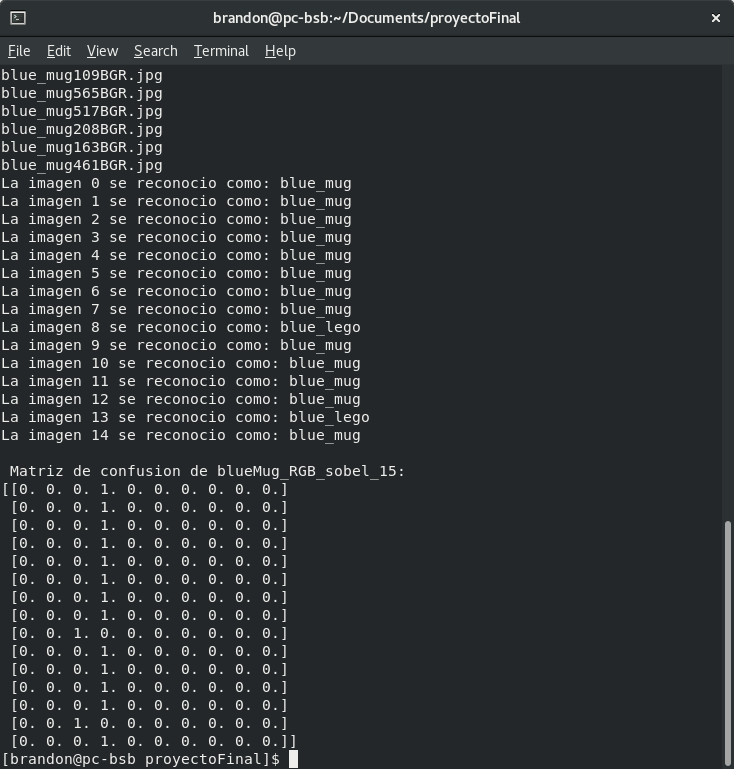


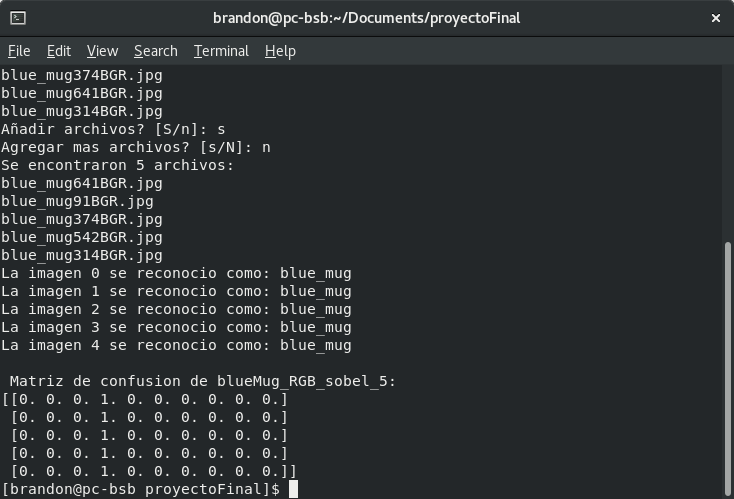




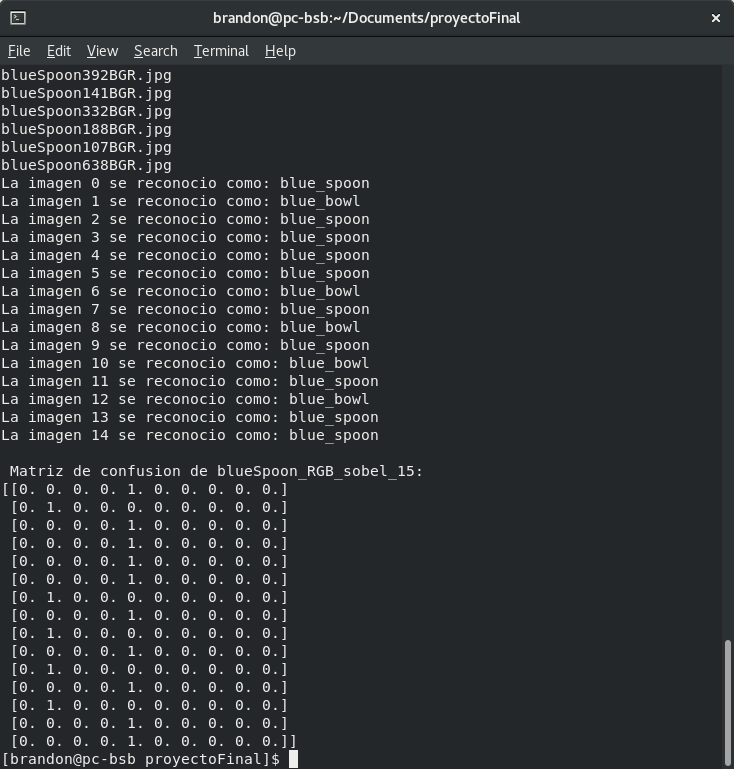
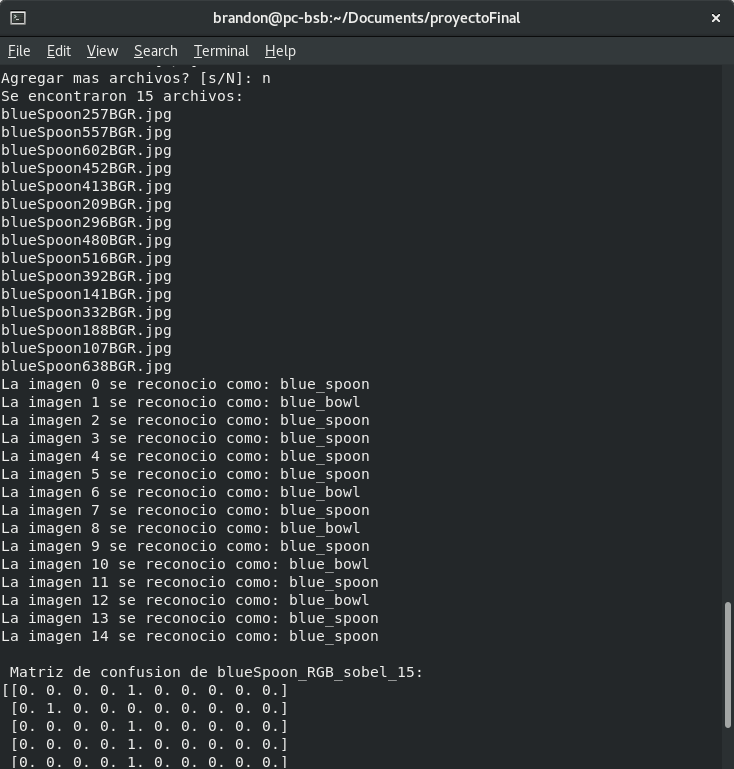
Blue mug

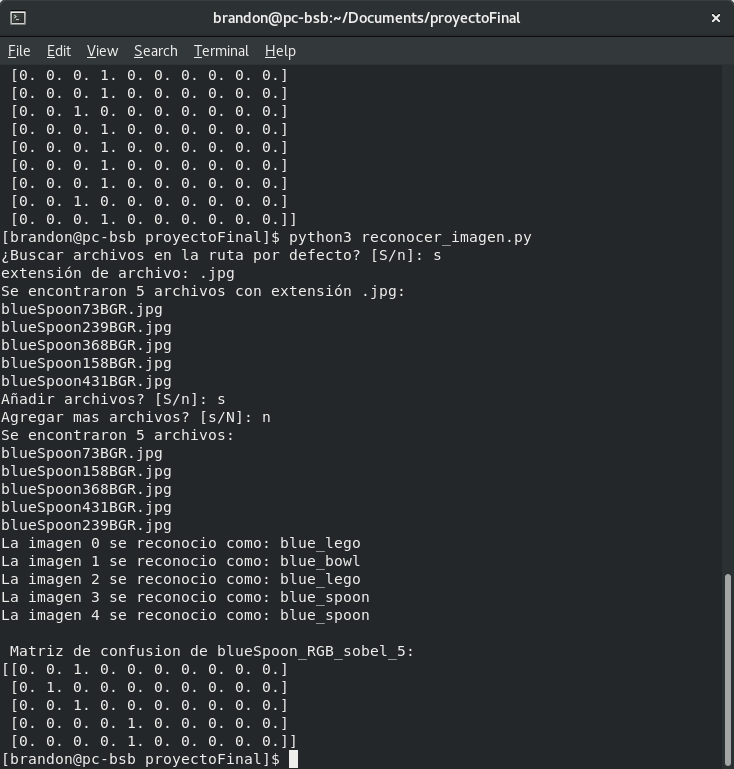




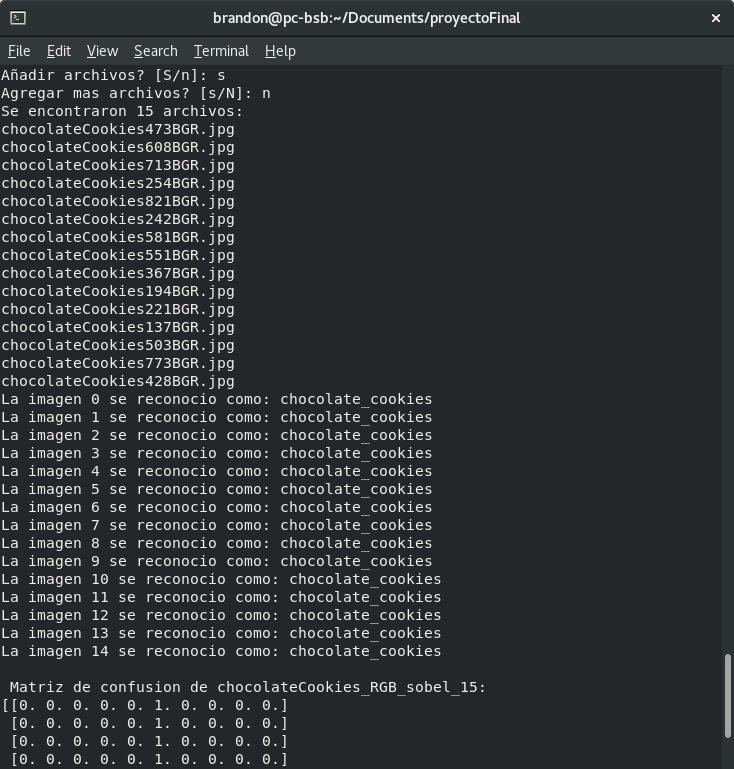


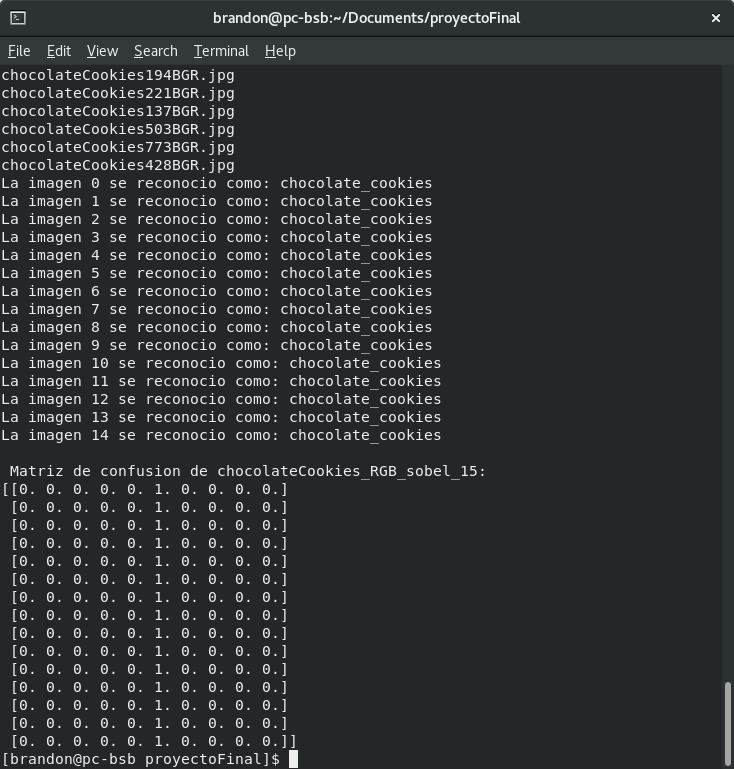
Blue spoon

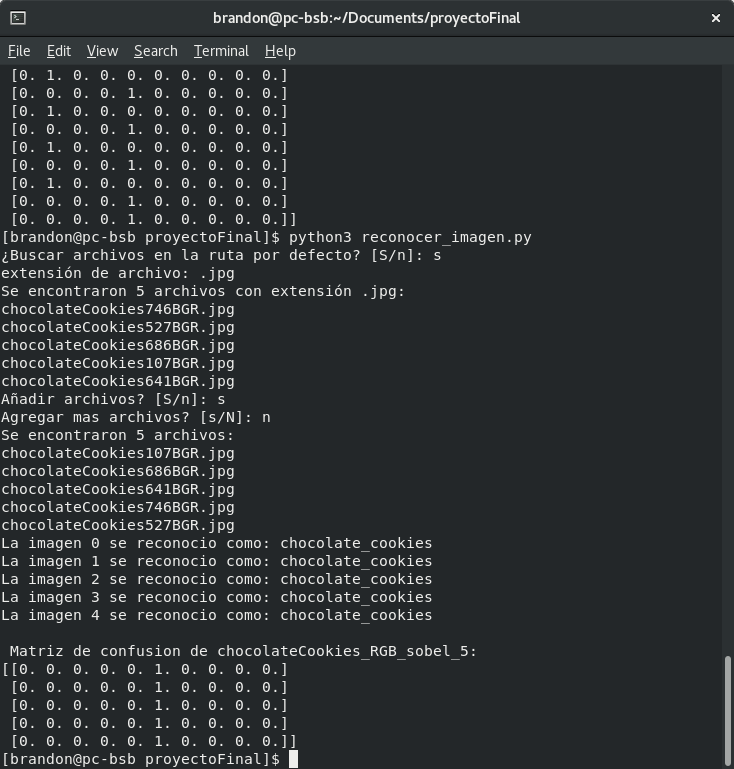




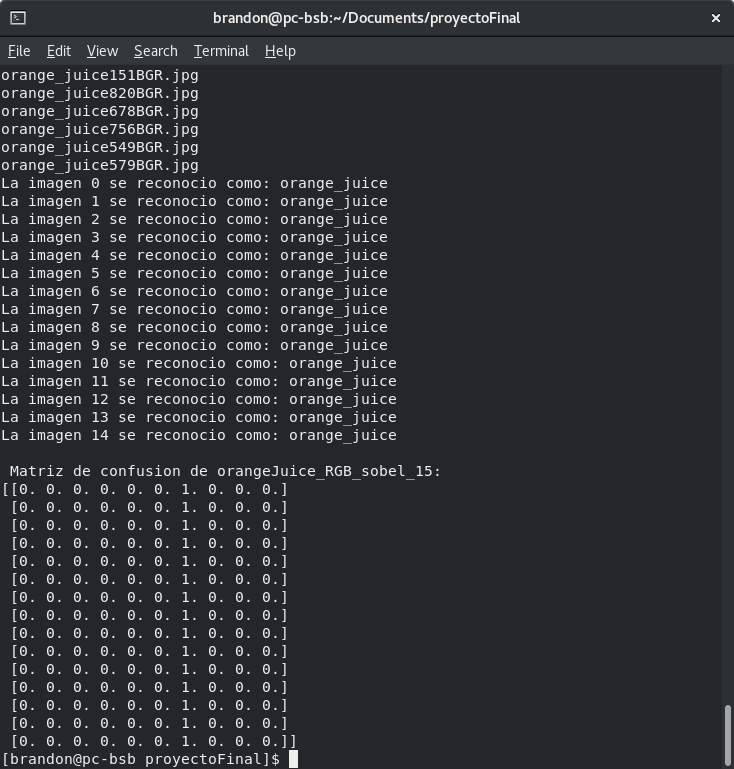
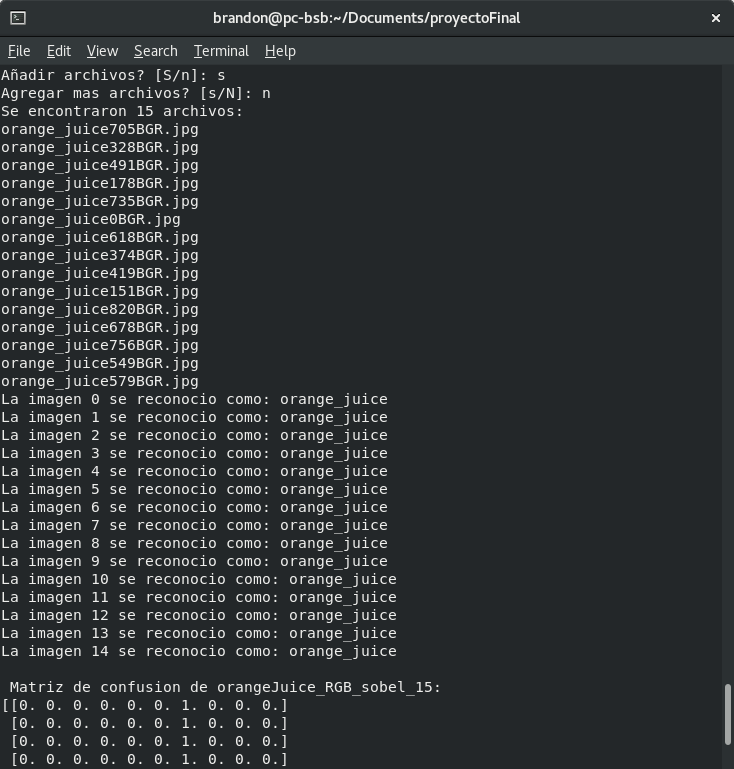
Chocolate cookies

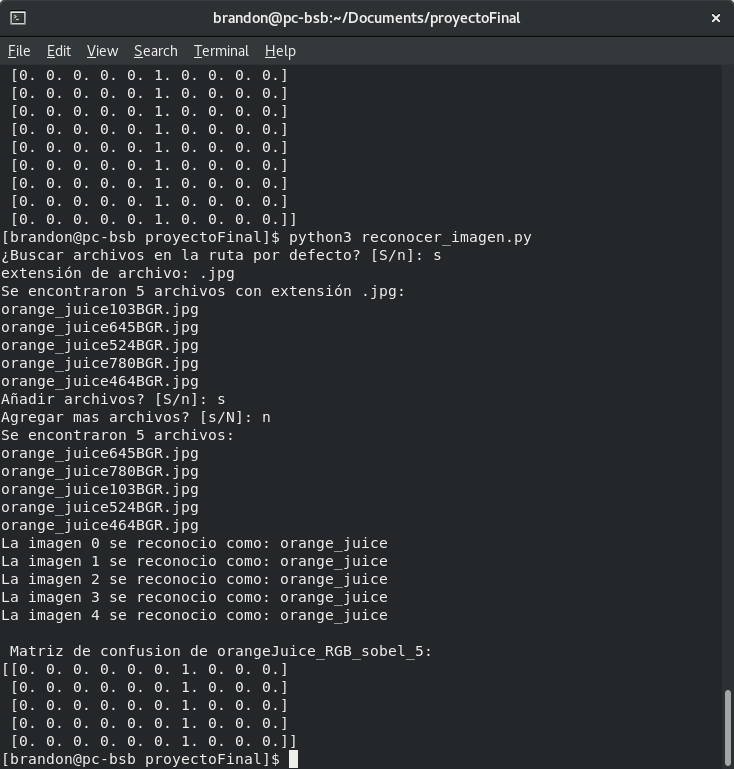




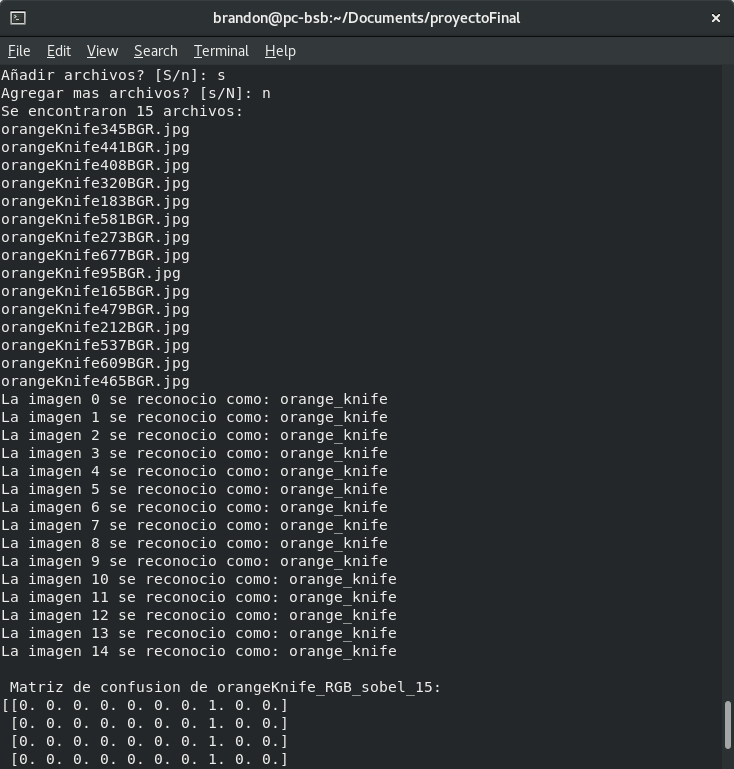


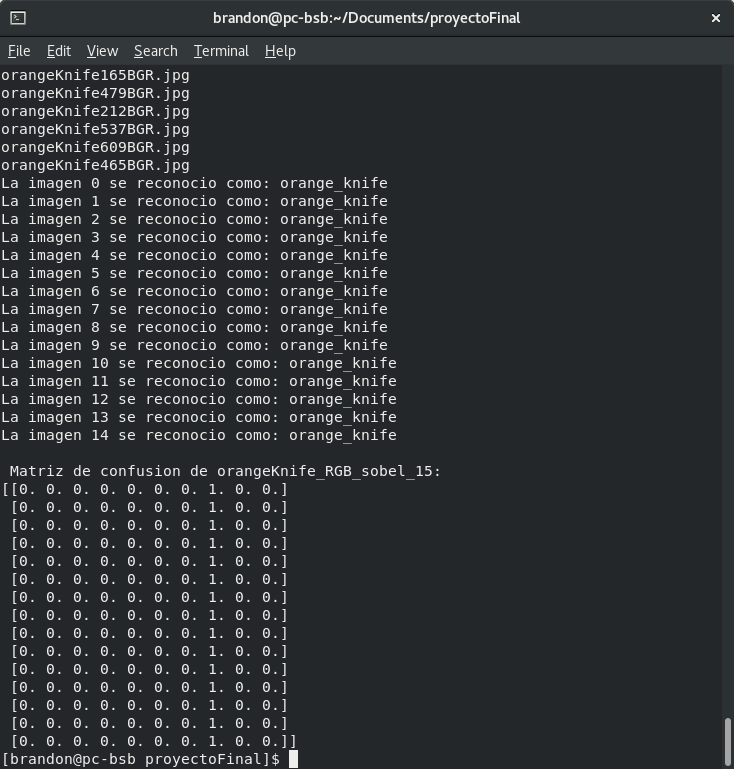
Orange juice

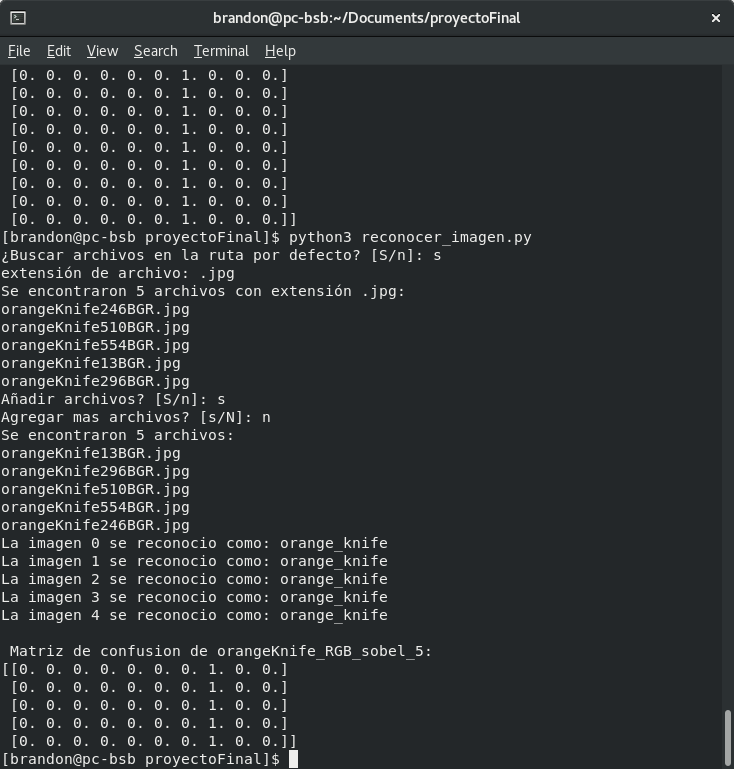




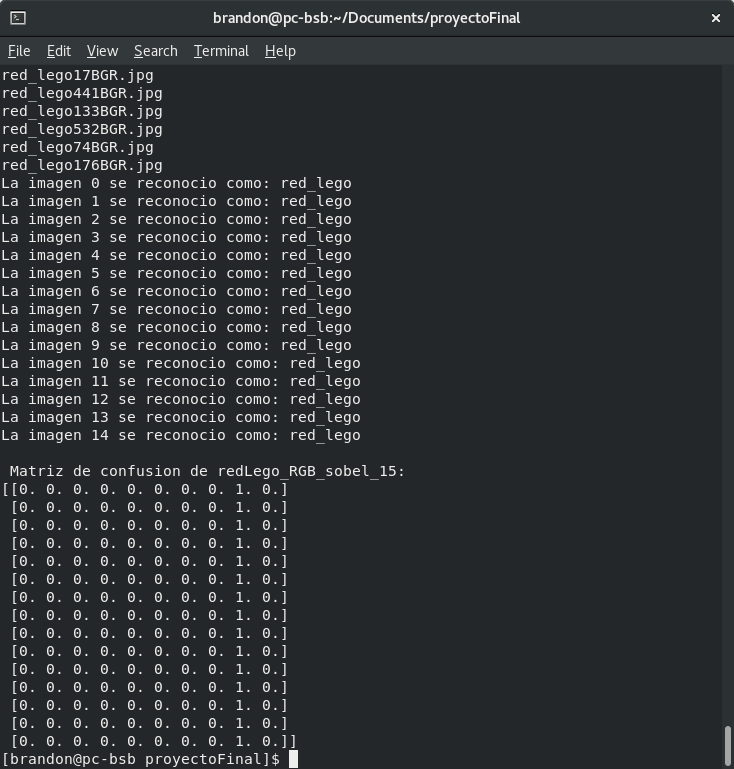
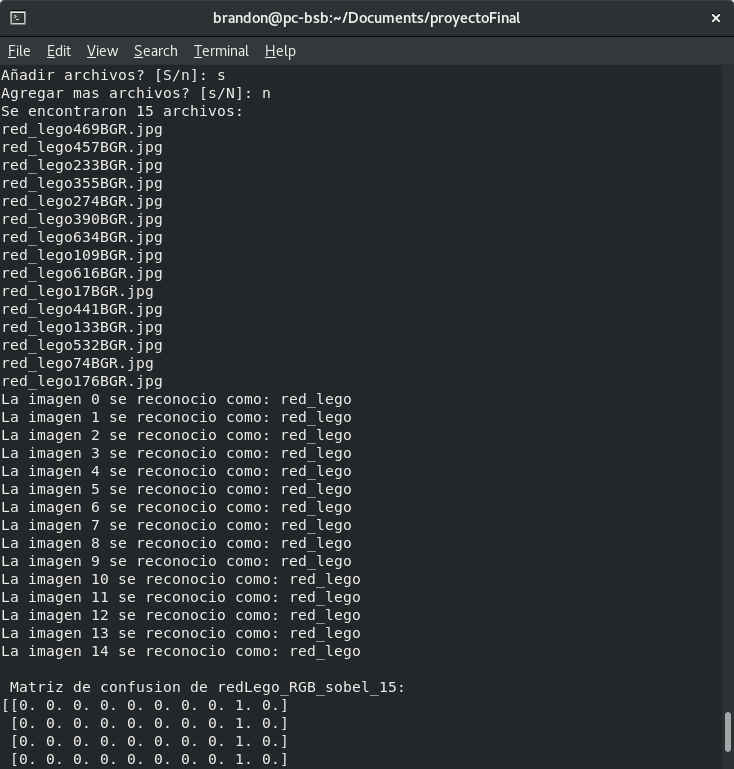
Orange knife

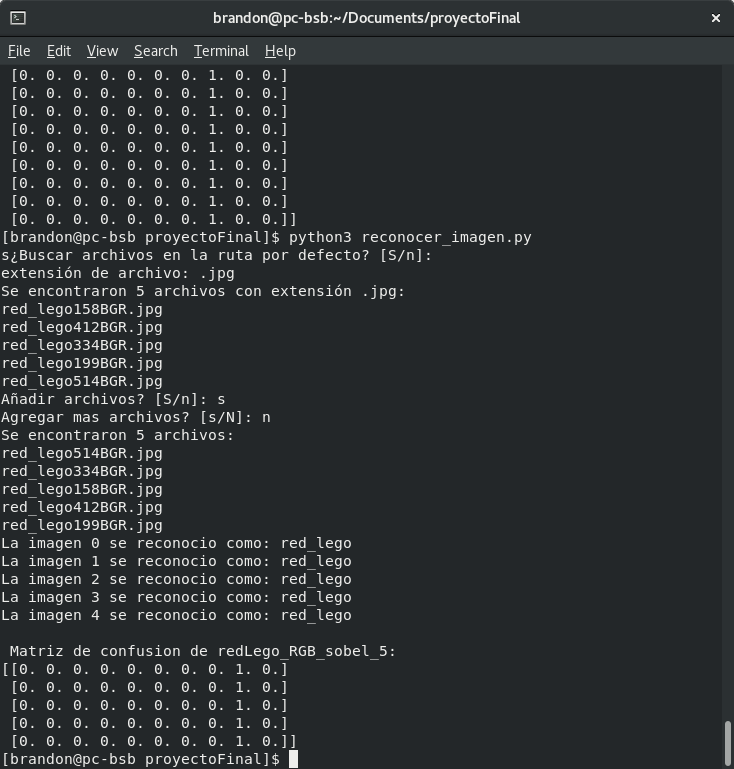




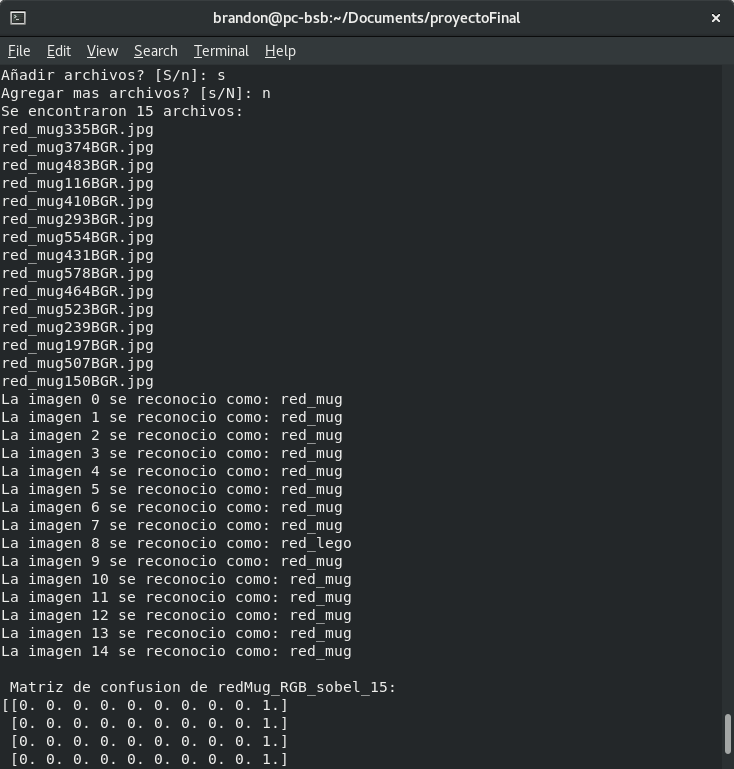


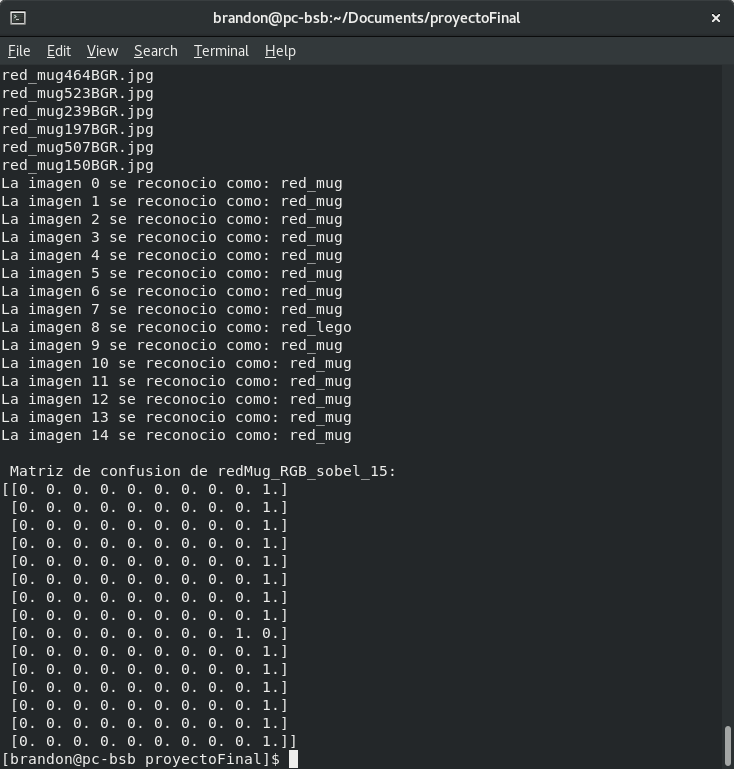
Red lego

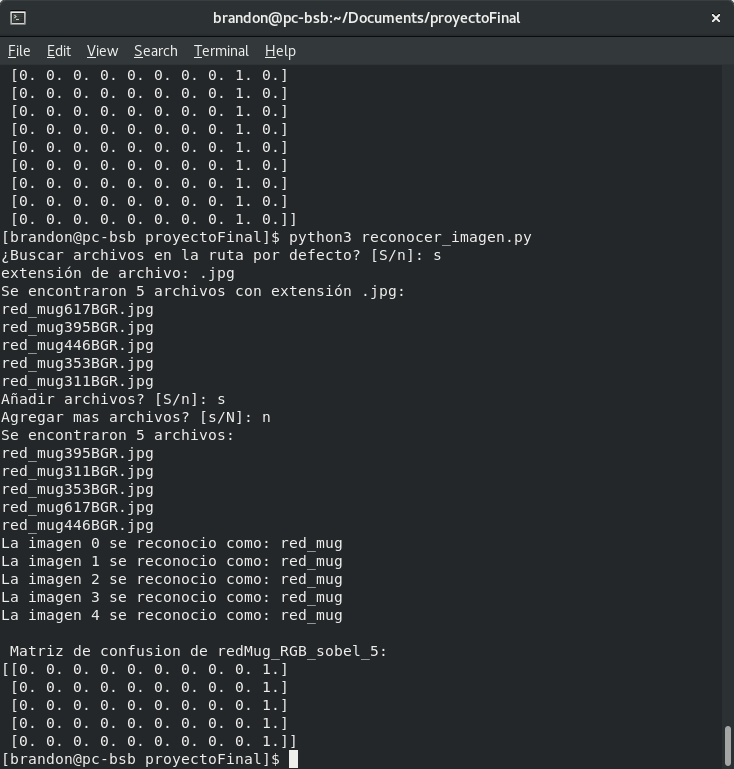




Red mug









La aplicación de los cuantizadores vectoriales funciona mejor cuando una clase de imágenes tiene mayor variedad de colores o cuando no hay varias clases de imágenes con colores similares. Al reconocer imágenes con pocos colores, es posible que se confundan con otras imágenes que también tienen pocos colores; este fue el caso en algunas imágenes de las clases blue bowl, blue spoon, blue lego y blue mug, que tienen tonos similares.

Al adicionar los valores de los pixeles sobel horizontales y verticales a los pixeles RGB, la precisión para diferenciar orange juice y orange knife fue completa, ya que con los valores RGB sin elementos extra había confusiones entre esos dos grupos o de imágenes. No se notó una mejoría considerable en el reconocimiento de las imágenes blue al adicionar valores sobel.

Para el resto de las clases de imágenes la utilización de cuantizadores vectoriales permitió diferenciarlas correctamente

El costo computacional fue similar para los cuantizadores con valores RGB con el tamaño original de las imágenes y con valores RGB con los valores sobel con reducción de tamaño de imagen a la mitad.

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