Can detector with GStreamer

How to detect a simple can with GStreamer and OpenFoodFacts

Stéphane Cerveau (dabrain34), Senior software engineer @ Collabora

COLLABORA

Barcode detection

Introduction

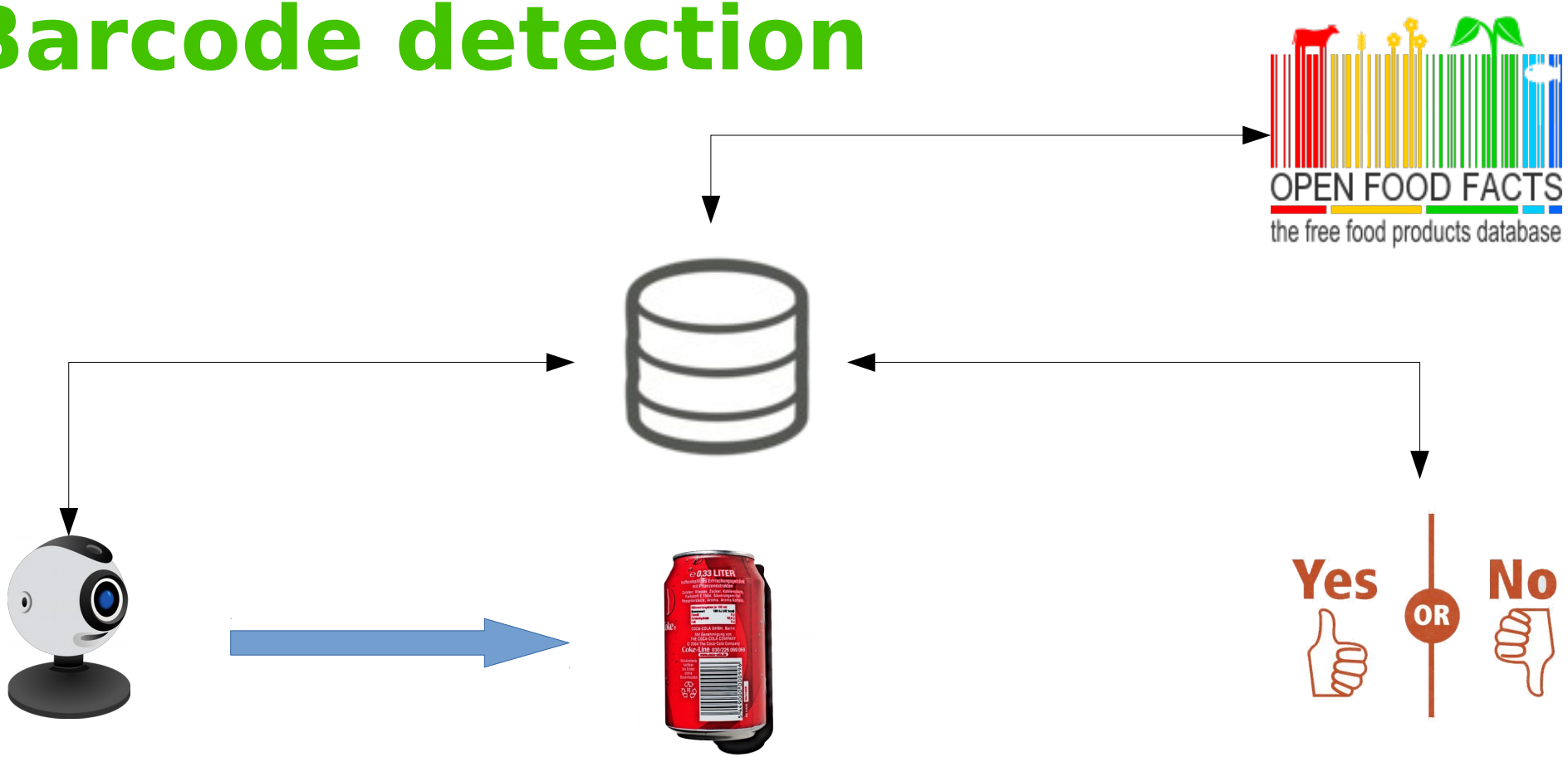
- Open solution to garbage collection
- Free bus ticket for cans
- Use of GStreamer data processing

- First step:
  - Barcode and open database to provide object matching

Open food facts

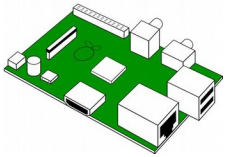
- A free, online crowd-sourced database
- Initiated in 2012
- Based on barcode to detect food products
- ~ 1 Million of products
- Apps available to check/add/edit products
- Binding for many language and platforms

Barcode detection



Can collector with raspberry pi

- Barcode scanner with camera
- Validate the can’s barcode with openfoodfacts
- GPIO to control automatic doors (any help is welcome)
- Open design (in progress)
- Materials:
  - Raspberry PI + raspbian
  - Camera(s)
  - Automation signalling to grant access to user to throw the can
- Software:
  - Zbar/ZXing
  - GStreamer
  - REST API client for OFF using Python



Implementation

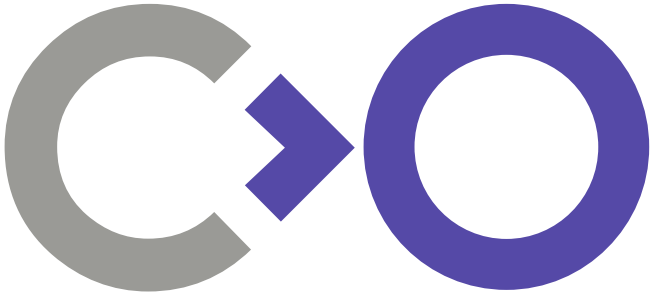
- Implentation: https://github.com:dabrain34/gst-off-detector.git
- ZXing plugin in GStreamer (OpenFoodFacts).
  https://gitlab.freedesktop.org/gstreamer/gst-plugins-bad/merge_requests/743
- Finetuning detection using GStreamer (Grayscale, etc.)
- Retrieve data from OpenFoodFacts

Next steps

- Enhance the bar-code detection
- Image for open hardware
- Use of neural net for object detection
- Automation for doors and object acceptance.

Breaking news 07/19/2019

Estacio Diagonal, Barcelona !



Thank you!
Any questions ?