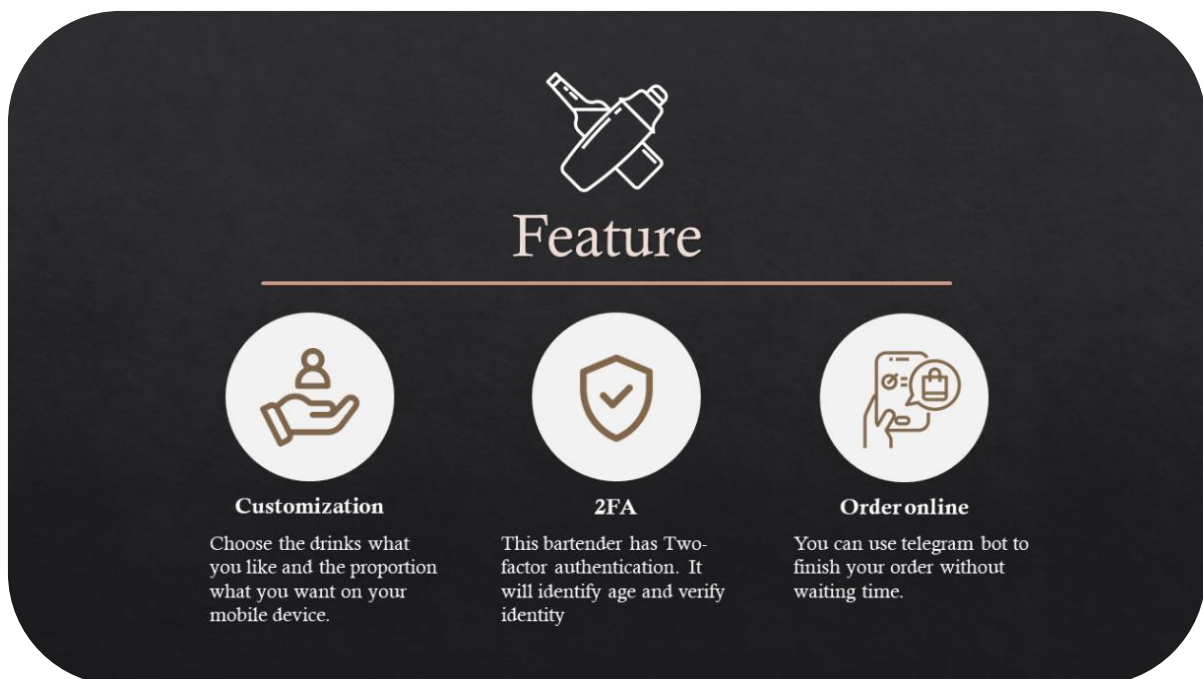# IoT-bartender Proposal

107403007 資管三顏婷蓁

- **Overview**

  This is an **AI bartender with Secondary verification**. Because of the working holiday in Orchid Island during the summer vacation, I want to share Original Cocktail that I met in this summer through this project.

  To implement this project, I would use five drinks and rice wine. As for user, there are three steps to operate.

a. First, user need to offer their selfie to identify age. If their age is less than 18 years old, they cannot choose rice wine as a component of drinks.
b. Second, user need to choose the drinks what they like and the proportion what they want on their mobile device.
c. Third, the mobile device will generate an qr-code and user can use it to pick their drink. When they pick up their drink, AI bartender will take a photo to verify identity.

Feature

Customization

Choose the drinks what you like and the proportion what you want on your mobile device.

2FA

This bartender has Two-factor authentication. It will identify age and verify identity

Order online

You can use telegram bot to finish your order without waiting time.

- **Component**
  - Hardward
    - Raspberry Pi 3 Model B *1
    - Intel® Neural Compute Stick 2 *1
    - Arducam Noir Camera for Raspberry Pi *1
    - DHT22 Temperature Humidity Sensor Module *1
    - 4xAA battery holder *2
    - AA battery
    - Jumper wires
    - breadboard
    - 12V DC Dosing Pump Peristaltic *6
    - Food Grade Silicone Tubing *3
    - 8 Channel DC 5V Relay Module *1
    - Bar code & QR code Scan Module *1
  - Software
    - Python 3.7
    - Open-Vino
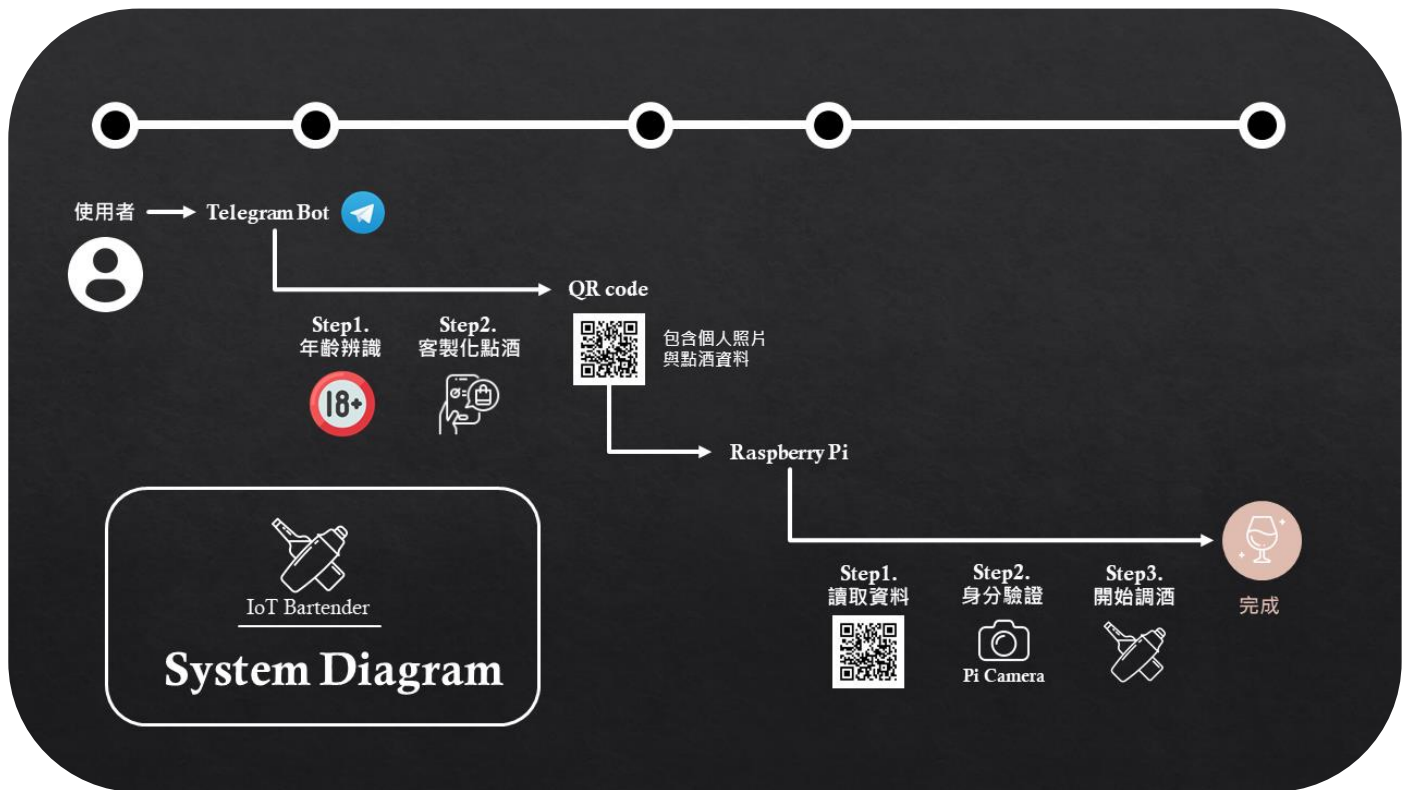   - Telegram
  - Accessories
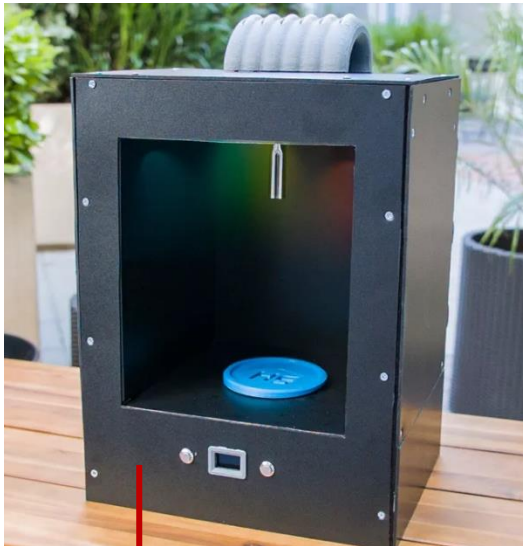   - 紅標米酒
    - 雪碧
    - 國農牛乳
    - 伯朗咖啡
    - 蔓越莓汁
    - 美粒果

  - List of componenets needed for implementation

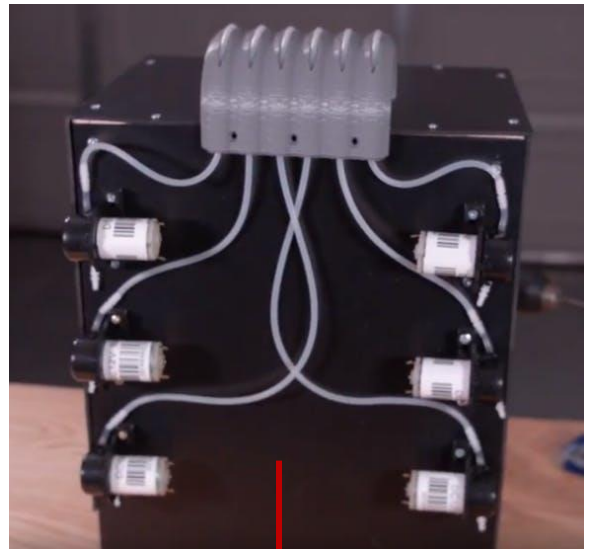| 品項	參考連結	價格	是否需要購買
直流電動抽水泵 12V *6	https://reurl.cc/d5kjzM	$1476	自行購買
食品及矽膠管內徑 2mm*外徑 4mm*長 1M *3	https://reurl.cc/bR8bZv	$45	自行購買
8 Channel DC 5V Relay Module*1	https://reurl.cc/WLQZaD	$210	是
Bar code & QR code Scan Module	https://reurl.cc/x0Mjxe	$988	是

1. Iot-bartender 外型

正面: 雷切木材製作外箱

背面

2. Raspberry pi 如何與 Telegram Bot 串接

- Telegram Bot 產生 QR-code

  a. 使用 Python packages - qrcode 6.1

     Install: pip install qrcode

  b. Generate and Decode QR Codes in Python document

- Raspberry pi 掃描 QR-code

  a. 使用 Barcode Scanner Module 掃描辨識模組
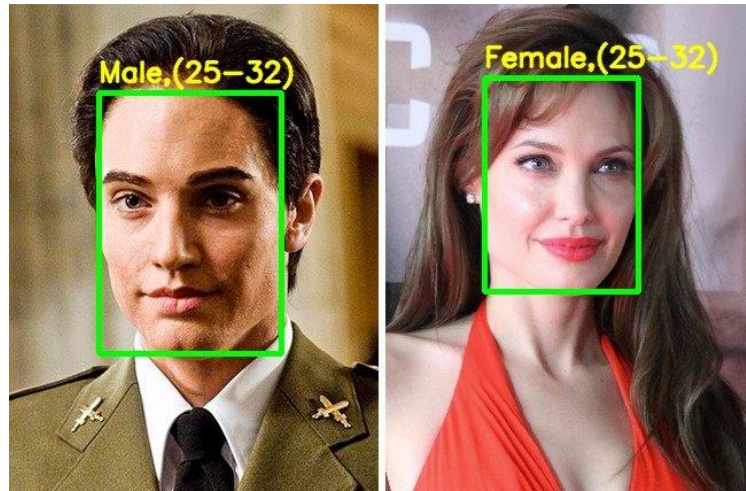

  b. 相關使用手冊

3. 如何實作 2FA　(Two-factor authentication)

- Telegram Bot - Age Classification

  a. 使用者傳送圖片給 telegram bot，telegram bot 運用 OpenCV 年齡辨識，並回傳是否滿 18 歲的資訊

b. [OpenCV with Telegram Bot](#)
c. [Age Classification using OpenCV](#)

- Raspberry Pi - Face Verification

  a. 將使用者傳送給 telegram bot 的圖片存在 QR-code 內，並運用 Raspberry Pi 拍照識別與 OpenCV、OpenVINO 以驗證使用者是否為同一人
  b. [參考門禁系統](#)、[人臉辨識解析](#)

4. Telegram Bot UI 設計

- Plan B
  - AI bartender with customization bartending

  Overview

  This plan will be similar to the original plan. The difference is that it will cancel the feature of Secondary verification.

- References

  a. Bartender-pi

    - Smart Bartender
      https://www.hackster.io/hackershack/smart-bartender-5c430e
    - 用 Arduino DIY 自動調酒機
      https://arduino.nxez.com/2018/01/16/6-shooter-arduino-drink-mixing-station.html
    - cocktail-pi
      https://github.com/saubury/cocktail-pi
    - Raspberry Pi Off-World Bartender
      https://www.raspberrypi.org/blog/raspberry-pi-off-world-bartender/
    - Pitender
      https://hackmd.io/@nl3k8IIMTUuNhfYnYiVKlQ/rklX1RllU
    - 原住民調酒
      http://winelist.niusnews.com/post/3k2kt84

  b. telegram bot

    - 設定 telegram bot on raspberry-pi

      https://www.instructables.com/Set-up-Telegram-Bot-on-Raspberry-Pi/

    - Chatbot with raspberry-pi

      https://github.com/The-Assembly/Home_automation_chatbot

    - telegram bot api

      https://core.telegram.org/bots/api

      https://medium.com/front-end-augustus-study-notes/telegram-bot-api-1-e4ea74d3b064

- python QR Code generator

  https://pypi.org/project/qrcode/

  https://github.com/lincolnloop/python-qrcode

- python QR Code generate and decode

  https://medium.com/better-programming/how-to-generate-and-decode-qr-codes-in-python-a933bce56fd0

- telegram bot opencv

  https://github.com/meinside/telegram-bot-opencv

c. Age Classification

- Gender & Age Classification using OpenCV Deep Learning

  https://www.learnopencv.com/age-gender-classification-using-opencv-deep-learning-c-python/

- OpenCV using Python

  https://blog.gtwang.org/programming/python-opencv-dlib-face-detection-implementation-tutorial/

- OpenCV with Telegram Bot

  https://github.com/LincolnUehara/bot-opencv-telegram