1. Esp32
    - program with Arduino
    - can't access in Python programs (payvegan_cases), not webcam
    - medium resolution, can see words on slip (not clearly), e.g. Esp32 < Droidcam
    - high mobility, work in anywhere with registered Wifi network in Arduino program, restricted by length of usb cable, only power supply needed (usb Micro-B)
    - flash mode, 5V->5V, TXD->UOR, RXD->UOT, GND->GND, IO0->GND
    - normal mode, usb Micro-B cable
    - works with external storage SD card, Wifi module
    - QR decode after image taken, and moved to source folder
    - webcam server program and SD card program
    - webcam server program: connect targeted Wifi network, and access IP address on browser, webcam control presented
        - image processing in interface provided
        - resolution, brightness, contrast, etc.
        - higher resolution, more laggy
        - problem of same IP address, how to access all 3 Esp32 at once
    - SD card program: press RST button to take picture, without interface of camera image, image save to SD card, by the help of card reader, image processing can be done on image
        - very raw image (without any image processing), greeny image
        - flash light provided
    - payvegan plan: 3 Esp32 on different angle to capture image and extract data
        - medium clear image on near object, not distanced image
        - for name-email slip, it should be ok for Esp32
        - for receipt, high resolution needed for accurate data extraction, Esp32 not recommended
        - cloud program, API needed for automation
        - one computing device maybe not capable of using 3 Esp32 at once
2. Pi camera
    - program with Python, act as a webcam
    - medium resolution, can see words on slip (not clearly), e.g. Esp32 = Pi cam
    - low mobility, restricted by the length of cable from pi to pi cam, and pi has to be at a distance for ease of control
    - treat as ordinary webcam, no specific programming mode needed
    - works with all payvegan_cases, webcam-needed, non webcam-needed

- QR decode in camera, and directly add data to result.txt
- doesn't have Wifi module, unlike Esp32, no webcam server
- high load for pi if use for full day long calculation or camera module, due to CPU difference between normal computers
- payvegan plan: 3 pi cam on different angle to capture image and extract data
    - medium clear on near object, not distanced object
    - for name-email slip, it should be ok for pi cam
    - for receipt, high resolution needed for accurate data extraction, pi cam not recommended
    - easy automation, saving frames in given time duration
    - since the cable from pi to pi cam is unique, 3 pi is needed for 3 pi cam
    - low economic efficiency

3. Cartbox
- program with Python, phone with droidcam client as webcam
- cartbox is for the controlled brightness of environment, for easier image processing
- high resolution, can see words clearly on slip, e.g. Cartbox > Esp32 = pi cam
- high mobility, different methods for connection, usb connection to computing device, wifi accessing webcam, highest among all methods
- treat as ordinary webcam, no specific programming mode needed
- works with all payvegan_cases, webcam-needed, non webcam-needed
- QR decode in camera, and directly add data to result.txt
- phone has Wifi, webcam server provided, installation on computing device needed
- high load for pi if use for full day long calculation or camera module, due to CPU difference between normal computers
- payvegan plan: setup a cartbox, put phone on top with camera facing bottom towards a hole in the cartbox, with an area indicated to put receipt in it, then do image processing in Python program
    - controlled environment, image processing is consistent, no multiple modes needed, minimal change, brightness controlled
    - LED may need to be equipped since environment around cartbox varies
    - length of receipt is varied, cartbox is designed to suite every size, folding receipt maybe needed
    - unlike other methods, only one device needed, later on device may vary from phone to high resolution webcam
    - easy automation, saving frames for every customers, only scanning in cartbox needed

- both ok for name-email slip and receipt, high resolution for accurate data extraction, with minimal image processing
- could be economic efficient if later on change from phone to webcam