

(ITCH) Inventory Tool to Catalog Hardware v0.1

This automated service, hereafter referred to as The System, allows quick inventory of hardware equipment that does not necessarily have consistent asset tags or proper corporate bar codes. The System assumes the only way to inventory the hardware is via model and serial number description and pictures of the equipment. It is understood that after The System creates the catalog or master inventory, subsequent processing might be needed, depending on how the real-life requirements turn out. Certain information, like model and serial numbers, might be required to be segregated into separate columns in Google Sheets. Still, since manufacturers have no uniform format, the pattern for relevant possible formats can only be determined after enough variants in the Master Inventory can be seen. This post-processing can be done as well, but for now, it is a deliberate decision not to perform this at this stage unless truly needed.

TL;DR

All humans have to do is take pictures and upload them to a shared drive according to the instructions. A master inventory of the associated photographs and hardware description will be automatically created. This is a quick prototype, and error handling is limited. It assumes intelligent and considerate users.

The assumed structure of files and folders in a shareable Google Drive must be followed.

The Process in More Detail.

1. This system is used simply by taking good, clear pictures of the serial number plate or area of the equipment using a typical 12 MP resolution from a phone app. 12 MP means a high-definition close-up or portrait. You can see this in the info of your photos when you hit the info icon on your camera app. Typical images of this resolution will take up around 2Mb of file size.
2. The pictures are then selected by the user and uploaded into the Upload folder in a Google Drive, which will be provided when the Author approves you as an authorized user.
3. Then, on an ad hoc basis or every day at a regular schedule, this inventory system will process the images and move them into a Processed folder, producing a record of that particular batch run for the day in the Logs folder. The TEMP*. Files in Logs are Google Sheets and will indicate the good scans with a good description, while bad photos will have a description that says ERROR and then a suggestion to retake images for that equipment.
4. Finally, a Master Inventory Google sheet is updated with all good scans in the Processed folder. If you are friendly, the Author will modify the code to include your e-mail of choice in an automatic e-mail notification and updated sheet for each batch run.

Architecture and End User's License Agreement (EULA)

This cost-effective automation uses a particular ML and REST API rather than full-blown AI API. An AI model will work, but it will require a pricier token-based consumption cost, and essentially an overkill for the job with no practical advantage. Certain design decisions and trade-offs were made to minimize paid services in the cloud and any API used.

Alternative infrastructure design is possible, but if you are not willing to give the Author money for it, then just use it as is. This includes avoiding any suggestions to the Author to use corporate cloud assets, as the security and compliance requirements arising from that will turn this three-night project into a six-month nightmare with all the questions, clarifications, obfuscations, tickets, meetings, and pre-meetings.

The avoidance of all the above issues is why the Author is shouldering all costs. This indulgence will remain until April 30th, 2025, then all the paid cloud infrastructure will be spun down.

The System was developed solely by the Author outside of office hours, using only development tools, software licenses, computers, and other resources and equipment owned and paid for by the Author without any other entity's help.

ALL RIGHTS BELONG TO THE AUTHOR, and any use granted to allow access to The System does not imply nor confer any rights on anyone else. No guarantees of any kind are extended to anybody using The System, and anyone that uses it agrees it is the user's sole responsibility, whatever the outcome. Furthermore, the act of using The System, including but not limited to the steps required to get access to The System, including contacting the Author for a user privilege, constitutes a tacit agreement to abide by these terms and conditions.

System requirements

1. A Google Drive from a personal account of the Author (Emmanuel Ablaza) will be shared for a limited period. This is limited to 10GB so the upper limit is 2,000 images. However, once we have scanned 1,000 images per month, including test runs, additional costs will be charged to the Author, so please be considerate. Additionally, a limitation of 5GB in the Google Cloud Storage is in play to try to manage this 1,000 images limit. DO NOT LOAD bad images (if you cannot read the serial number on your photo, retake it and do not upload). If you try uploading pictures of unrelated items, you will get banned.

2. The Google Drive has a specific structure of folders (namely, /Logs /Processed and /Upload folders, with a seed set up for the Master Inventory and Temp Google Sheets).

Have Fun and You are Welcome!