Documentation

User Documentation:

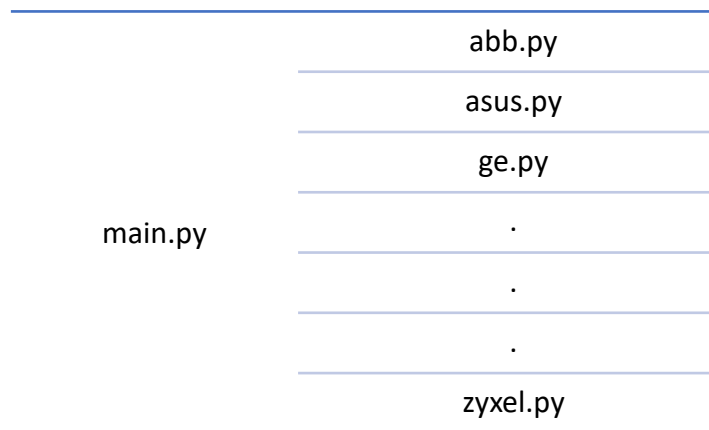1. Download the code from https://github.com/amosproj/amos2022ss01-firmware-downloader/tree/development page or a zip from https://github.com/amosproj/amos2022ss01-firmware-downloader/archive/refs/heads/development.zip
2. Unzip the folder into the local machine
3. Open using any IDE configured with Python
4. Install the dependable libraries from each module using
    a. Pip install xxx (xxx is the module name). Example: pip install selenium or
    b. Python -m pip install xxx
5. Install the chromium driver from and https://chromedriver.chromium.org/downloads and paste where the code is present

Software Architecture, code - design documentation:

High Level Architecture with code:
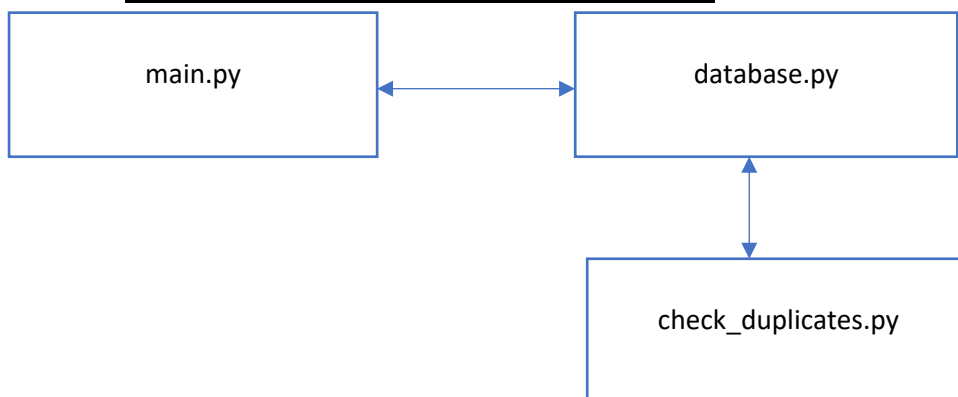
The main.py has individual modules which will use multi-threading to run each vendor modules.

main.py	abb.py
	asus.py
	ge.py
	.
	.
	.
	zyxel.py

Selenium Web driver is responsible for crawling each web in the main module

Vendor list:

https://github.com/amosproj/amos2022ss01-firmware-downloader/blob/main/Documentation/Vendors%20to%20be%20investigated.pdf

Sqlite3 is used for database configuration
- DB Config: https://github.com/amosproj/amos2022ss01-firmware-downloader/blob/main/Documentation/Database%20Model.pdf
- DB Architecture and Configuration:

S.No	Columns:	Data Base Field (Used in Python)	Acronym/ Description (with example)	Data Base (As per SQLite3 Config) Data Type	Constraint
	Data Base Field (Used in Python)		**Acronym/ Description (with example)**		
	Table Name:	FMDB	Firmware Database		
1	Manufacturer	Manufacturer	(e.g., Siemens, D-Link, AVM, ABB, …) • Please refer to the link for all vendors needed for the project: Vendors (https://github.com/amosproj/amos2022ss01-firmware-downloader/blob/main/Documentation/Vendors%20to%20be%20investigated.pdf)	TEXT	NOT NULL
2	Model/Name	Modelname	(e.g., S7-1500, DIR300, Scalance-X, …)	VARCHAR	NOT NULL
3	Version	Version	(e.g., 1.2.3)	TEXT	NOT NULL
4	Type	Type	(e.g., Router, Switch, Firewall, PLC, …)	TEXT	NOT NULL
5	Release Date	Releasedate	If available from web scraper	TEXT	-
6	Checksum	Checksum	sha512	TEXT	-
7	EMBA tested	Embatested	yes/ no	TEXT	NOT NULL
8	EMBA link to report	Embalinktoreport	filesystem	TEXT	-
9	EMBArk link to report	Embarklinktoreport	(http://…	TEXT	-
10	Firmware downloads link	Fwdownlink	vendor link	TEXT	NOT NULL
11	Firmware filesystem link	Fwfilelinktolocal	to find it on the filesystem	TEXT	NOT NULL
12	Firware File ID	Fwfileid	Firmware filesystem unique index id for each new file added into DB or local file system (In future, to integrate with EMBA/ EMBArk)	VARCHAR	PRIMARY KEY
13	Additional Data	Fwadddata	Additional Data (e.g., all additional description about the product)	BLOB	-
Note:	The data is assumed to as per the information available and can be changed at any moment based on the changes needed in the Project				

- https://github.com/amosproj/amos2022ss01-firmware-downloader/blob/main/Documentation/Data%20Base%20Config%2CSetup.png or

- https://github.com/amosproj/amos2022ss01-firmware-downloader/blob/main/Documentation/Data%20Base%20Config%2CSetup.xlsb

- The detailed architecture can be viewed at https://github.com/amosproj/amos2022ss01-firmware-downloader/blob/main/Documentation/Software%20Architecture.pdf

Build/ Deployment:

Please follow as listed above in User Documentation to run the code

Notes:

- For detailed project information please go through the documents at https://github.com/amosproj/amos2022ss01-firmware-downloader/tree/main/Project%20Description and
- For documentation of project individual modules please go trough https://github.com/amosproj/amos2022ss01-firmware-downloader/tree/main/Documentation

Final Build Expectations:

- To integrate the entire code with EMBA and Embark services for full firmware download and scanning the images
- Please visit https://github.com/e-m-b-a/emba for EMBA and https://github.com/e-m-b-a/embark for EMBArk pages