Inventory System
Developer Guide

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1. Introduction

XXX is an inventory system with functions such as pulling data from other seller platforms.

2. Setting up, getting started

Note: Only works on window

Install python: https://www.python.org/downloads/

Dependencies to install:

```
altgraph==0.17.2
async-generator==1.10
attrs==21.4.0
certifi==2022.5.18.1
cffi==1.15.1
charset-normalizer==2.0.12
cryptography==37.0.2
et-xmlfile==1.1.0
future==0.18.2
h11==0.13.0
idna==3.3
lazop-sdk==1.0.2
numpy==1.22.4
openpyxl==3.0.10
outcome==1.2.0
pandas==1.4.2
pefile==2022.5.30
pycparser==2.21
pyinstaller==5.2
pyinstaller-hooks-contrib==2022.8
pyOpenSSL==22.0.0
PySocks==1.7.1
python-dateutil==2.8.2
pytz==2022.1
pywin32-ctypes==0.2.0
requests==2.27.1
selenium==4.3.0
six==1.16.0
sniffio==1.2.0
sortedcontainers==2.4.0
trio==0.21.0
trio-websocket==0.9.2
urllib3==1.26.9
wsproto==1.1.0
```

Steps to set up configurations.ini:

1. Write the following paths in the configurations.ini file:

```
a.   PythonExePath = (where your python.exe is stored at)
b.   GetAllScriptPath = (where getAllData.py file is stored at)
c.   UpdateOrderScriptPath = (where updateOrders.py file is stored at)
d.   CombinedDataFilePath = (where Combined Data.xlsx file is stored at)
e.   SettingFilePath = (where Setting.xlsx is stored at)
```

```
f.   SinceDate = (determines which date to retrieve orders data from. For example,
     retrieving data from ecommerce platforms starting from 1 January 2022. Please key
     the date in this format: [date month year] (e.g. 1 January 2022).)
```

2. Access tokens (Getting a new authorisation code)
   a. Shopee
      i.
      ```
      print(generateAuthorisationUrl2())
      ```
      1. Run the above line of code in the LazadaAuthorisation.py file. It will return the authorisation url. Run a print statement to get the url.
      2. Use the url to grant the authorisation
      3. Copy the code from the parameters in the redirected url and paste it as a parameter in the function "get_token_shop_level" in ShopeeAPI.py line 146
   b. Lazada
      i.
      ```
      Authorisation().concatenate_authorization_url()
      ```
      1. Run the above line of code in the LazadaAuthorisation.py file. It will return the authorisation url. Run a print statement to get the url.
      2. Use the url to grant the authorisation
      3. Copy the code from the parameters in the redirected url and paste it in LazadaOrderAPI.py line 24 to assign it to the variable "CODE"
   c. Shopify
      i. Does not require any access token

3. Design

The system is split into 4 main functions, scrapping of data from ecommerce platforms, retrieving all orders data, updating the orders database and keeping a record of any stock adjustments. User-interface is based on macro VBA codes, this is linked to the backend by calling out python scripts.

3.1. Data scraping

Scrapping of data is performed using python script accessing e-commerce platforms' databases through APIs.

1. **Shopify**
   Only requires the API_KEY, PASSWORD, HOSTNAME, API_VERSION to return the data from the URL. We specify the respective field of data that is required and pull it out. There is a limit of 250 rows per request, so we loop the process until the respective data has been retrieved. We then cleaned the data to keep only the relevant columns: Order No., Created At, Fulfillment Status, Notes, Name, Address, Product, Platform, Item, Qty.
   For more info: https://shopify.dev/api/admin-rest/2022-04/resources/order

2. **Shopee**
   Only requires the PARTNER_ID, PARTNER_KEY, SHOP_ID, ACCESS TOKEN to return the data from the authorised URL (only lasts 1 year). Refresh token is required to retrieve the next access token. We specify the respective field of data that is required and pull it out. There is a page limit of 20? per request [see line 83 ShopeeAPI.py], so we loop the process until the respective data has been retrieved. We then cleaned the data to keep only the relevant columns: Order No., Created At, Fulfillment Status, Notes, Name, Address, Product, Platform, Item, Qty.
   For more info: https://open.shopee.com/documents/v2/v2.product.get_category?module=89&type=1

3. **Lazada**

Only requires the APP_KEY, APP_SECRET, SHOP_ID, ACCESS TOKEN to return the data from the authorised URL (only lasts 1 year). Refresh token is required to retrieve the next access token.

We specify the respective field of data that is required and pull it out. There is a limit of 100 per request, so we loop the process until the respective data has been retrieved. We then cleaned the data to keep only the relevant columns: Order No., Created At, Fulfilment Status, Notes, Name, Address, Product, Platform, Item, Qty.

For more info: https://open.lazada.com/doc/api.htm#/api?cid=8&path=/order/document/awb/html/get

3.2 Update Combined Data

If the "combined data" sheet does not exist, runs get all data function.

Else, runs update orders function.

3.2.a Get All Data:

Retrieve all data available from the various platforms, call out and run all data scraping modules.

Logic flow:

(VBA) Call Main.getAllData
- Runs the getAllData.exe

(Python) the code for getAllData.exe is from getAllData.py
- Pulls data from shopify, shopee and lazada
- Produce a combined data.xlsx

(VBA) Continue Main.getAllData
- Read and insert the combined data.xlsx into the system
- Match the data with product setting
- Add conditional formatting based on missing qty column

Estimated run-time for Get All Data: 3 mins

3.2.b Update Orders: Data scraping, update the latest data

Check for new orders against the orders database and

Logic flow:

Same as getAllData except in the python code, it pulls data based on the latest date (unfulfilled or fulfilled if all fulfilled)

Estimated run-time for Update orders: 2 mins

4. Errors, Malfunctions, and Emergencies

1. **Clean up path [path issues]**

   Check the config ini file regarding path file issues. The file should consist of the following file paths:
   - GetAllScriptPath
   - UpdateOrderScriptPath
   - CombinedDataFilePath
   - SinceDate

   If any of the following missing/file paths are incorrect the programme will break.

2. **Unable to retrieve data: Authorisation issue**

The most recent authorisation codes are stored in respective platform folders > config.ini. Please see the date modified to find the latest authorisation codes. The latest authorisation code is required for subsequent access to the APIs. Else, developers will need to reissue a new authorisation code.

<u>Shopee Authorisation Token</u> (renew yearly)
Kindly check the error log if shopee not showing the latest data. Shopee authorisation token expires every year, new authorisation token is needed. Please generate a new authorisation token (refer to 2. Setting up, getting up).

If the issue has yet to be resolved, there may have been changes to the API. Please refer to the API documentation of the respective e-commerce platforms:
Shopee: https://open.shopee.com/documents/v2/OpenAPI%202.0%20Overview?module=87&type=2

5. System upgrade: Additional Features
The following are some features to consider in order of priority:

- **Pull data from other e-commerce platforms** [redMart, Qoo10]
    - redMart currently only has data on inventory balance, rather than the order details. Additionally, redMart also has a security bot, which may restrict remote access into the system.
    - Use Qoo10 API, refer to API documentation:
- **Post data to the e-commerce platforms**
    - Update fulfilment status of the order from the inventory and it will automatically update on the e-commerce platform
- **Backup**
    - Set up an automatic backup system to keep an emergency copy of the database.
- **Allow multiple users with different devices to use the system simultaneously**
    - Syncing across the system across different devices
- **Mobile version**
    - Mobile system for the software