USER’S MANUAL FOR YTAUTOMATE SOFTWARE

A. QUICK START:

To run the program, you need to properly configure it into your local machine, acquire a valid license.lsc file, and obtain valid LOCK and KEY files for your YouTube channel.

1. Configure the program:

a) Enable macros for the default InputData.xlsm interface.
b) Place the license file (.lsc) into the <YTAutomate\bin> folder.
c) Go through 3-step configuration in the Setup sheet in the InputData.xlsm workbook.

2. Get LOCK file:

a) Use this wizard to create or select a project in the Google Developers Console and automatically turn on the API. Leave Create a project (no/yes) Click Agree & **Continue**, then **Go to credentials**.

b) On the **Add credentials to your project** page, click the **Cancel** button.

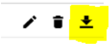
c) At the top of the page, select the **OAuth consent screen** tab. Select an **Email address**, enter a **Product name** if not already set, and click the **Save** button.

d) Select the **Credentials** tab, click the **Create credentials** button and select **OAuth client ID**.

e) Select the application type **Other**, enter the name of your project, and click the **Create** button.

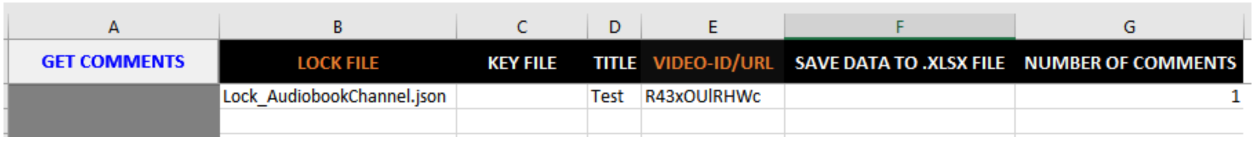
f) Click **OK** to dismiss the resulting dialog.

g) Click the file_download (Download JSON) button to the right of the client ID.



h) Move the downloaded file to your working directory and rename it as you wish while keeping the “.json” extension (E.g., *Lock_AudiobookChannel*.json)

3. Get KEY file:



A	B	C	D	E	F	G
GET COMMENTS	LOCK FILE	KEY FILE	TITLE	VIDEO-ID/URL	SAVE DATA TO .XLSX FILE	NUMBER OF COMMENTS
	Lock_AudiobookChannel.json		Test	R43xOUlRHWc		1

a) Open the InputData.xlsm. Go to CMGet sheet. Enter LOCK file .json (E.g., *Lock_AudiobookChannel.json*) in the LOCK FILE variable.
b) Leave the KEY FILE variable empty.
c) Copy a YouTube video URL or ID and paste it in the VIDEO-ID/URL column. Enter 1 for NUMBER OF COMMENTS.

d) Click ‘GET COMMETS’ button.
e) Login to your google account and authorize request.
f) Paste the authorization code in the CMD window and press enter.
g) The KEY file .json will be generated in your working directory and named as <LOCK> + _key.json (e.g., in this case: *Lock_AudiobookChannel_key.json*)
h) Rename the KEY file if you like.

B. COMPLETE MANUAL

1. YTAutomate Overview

1.1 InputData.xlsm

The InputData.xlsm is a macro-enabled excel workbook that serves as a flexible interface for the YTAutomate. This Excel-based interface facilitates remote controls as well as scheduled task performance without user attendance. This program allows users to fully control their YouTube channels without using web browsers or YouTube’s apps.

To run the program, the user first specifies values for different variables (defined as headers) in a worksheet corresponding to the specific task that they want the program to carry out. He/she then hits the run button on the left-hand-side panel to execute the task. The user can perform a task on multiple videos and multiple YouTube channels by filling different rows in a worksheet. The program will carry out actions in bulk in an ascending order. Since the workbook uses macros, please navigate to section 2.1 to learn how to enable macros before running the program.

There are 13 worksheets in InputData.xlsm workbook corresponding to 13 different tasks, including:

- Setup: allows the user to set up the license and working directory as well as checking the status of their license and update the program.

- Upload: allows users to upload videos to their YouTube channels.

- Update: allows users to update/modify details and properties of uploaded videos.

- Delete: allows users to delete videos from their YouTube channels.

- Download: allows users to download videos and audios from YouTube.

- Metadata: allows users to retrieve metadata (i.e., video properties and statistics) of any YouTube videos.

- CMGet: allows users to retrieve comments and replies from any YouTube videos.

- CMInsert: allows users to insert new comments to any YouTube videos.

- CMReply: allows users to reply to comments on any YouTube videos.

- CMUpdate: allows users to update their own comments or replies.

- CMHold: allows users to hold comments on their videos for later review.
- CMDelete: allows users to delete their own comments on YouTube videos.

For more information on license and program setup, please navigate to section 2.

For more information on how to run specific tasks, please navigate to section 4.

1.2 Folders

Below are specific folders included in the program:

- *bin*: contains all the executable and configuration files for the program to run. Please do not mess with this folder unless you know what you are doing.

These folders will be created the first time you run the program:

- *DOWNLOADED*: default folder to store downloaded videos and audios. When running the Download task, if the variable <Save Files To Folder> is empty, the video/audio will be downloaded to this default folder.
- *THUMBNAILS*: default folder for thumbnail files. When running the Upload and Update tasks, if thumbnail file name without path is present (e.g., figure1.jpg), the program will automatically search the *THUMBNAILS* folder for the file. If the thumbnail file is placed somewhere else on your machine, please use the full path instead (e.g., D:\Photo\figure1.jpg)
- *UPLOADING*: default folder to store videos for the Upload task. When running the Upload task, if video file name without path is present (e.g., the flying cat.mp4), the program will automatically search the *UPLOADING* folder for the file. If the video file is placed somewhere else on your machine, please use the full path instead (e.g., D:\Videos\the flying cat.mp4).
- *XLSX*: default folder to store the resulting .xlsx and .txt files. When running Upload, Download, Metadata, CMGet, and CMInsert tasks, if you only specify file names without paths for variables < save data to .xlsx file>, < save downloaded id to .txt file>, and < save comment id to .xlsx file> (e.g., uploadedIDs.xlsx), the program will automatically save these files to the XLSX folder. If you want to save the files to somewhere else on your machine, please use the full paths instead (e.g., D:\Results\uploadedIDs.xlsx).

2. YTAUTOMATE SETUP

The program requires three elements listed below:

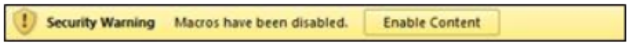
- Macro-enabled Excel (to open the default InputData.xlsm interface)

- A valid license for your machine.

- Proper configuration of license and bin folder in InputData.xlsm workbook.

2.1 Enabling macros:

The InputData.xlsm workbook includes different macros that read user's input data to run specific tasks. For the program to run, macros need to be enabled in for this workbook (if they have not been). If you receive the below Message Bar, you need to follow the steps listed below to enable macros for your workbook. For more details on how to enable macros, please visit Microsoft Office help documents.

Message Bar: 

Security Warning Macros have been disabled.

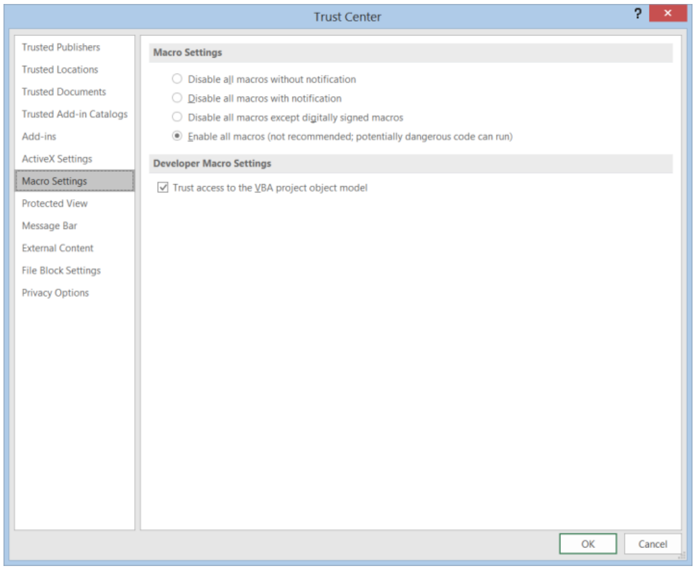
Option 1: Temporarily Enable macros:

Click on the **Enable Content** button to temporarily enable macros for the current session.

You will have to perform this action every time you run the program.

Option 2: Permanently enable macros from the Trust Center:

1. From Excel, click the **File** tab.
2. Click **Options**.
3. Click **Trust Center**, and then click **Trust Center Settings**.
4. In the **Trust Center**, click **Macro Settings**.
5. Change Macro settings to **Enable all macros**.
6. Click **OK**.



Trust Center

Macro Settings

○ Disable all macros without notification
○ Disable all macros with notification
○ Disable all macros except digitally signed macros
● Enable all macros (not recommended; potentially dangerous code can run)

Developer Macro Settings

☑ Trust access to the VBA project object model

The following image is the **Macro Settings** area of the Trust Center.

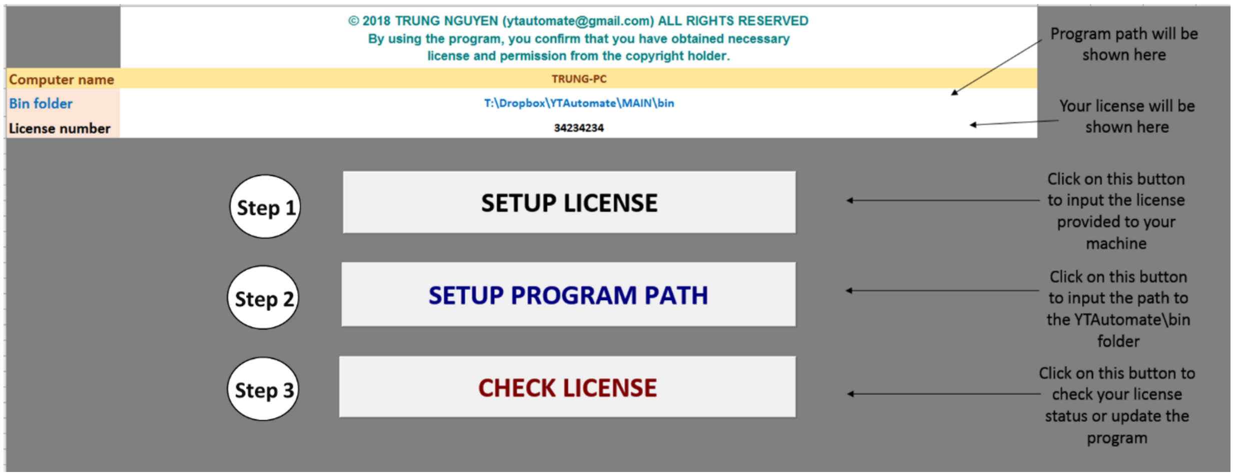
2.2 Placing License file in the .bin folder

Copy and paste the .lsc file that you received with the program in the <YTAutomat\bin> folder.

If you do not have a .lsc file, please contact Trung Nguyen at ytautomate@gmail.com

2.3 Configuring the InputData.xlsm

Please follow the step sequence in the below figure to configure the Setup worksheet in the InputData.xlsm workbook.



© 2018 TRUNG NGUYEN (ytautomate@gmail.com) ALL RIGHTS RESERVED
By using the program, you confirm that you have obtained necessary license and permission from the copyright holder.

Computer name	TRUNG-PC
Bin folder	T:\Dropbox\YTAutomate\MAIN\bin
License number	34234234

Program path will be shown here

Your license will be shown here

Click on this button to input the license provided to your machine

Click on this button to input the path to the YTAutomate\bin folder

Click on this button to check your license status or update the program

3. SECURITY

3.1 Security process overview

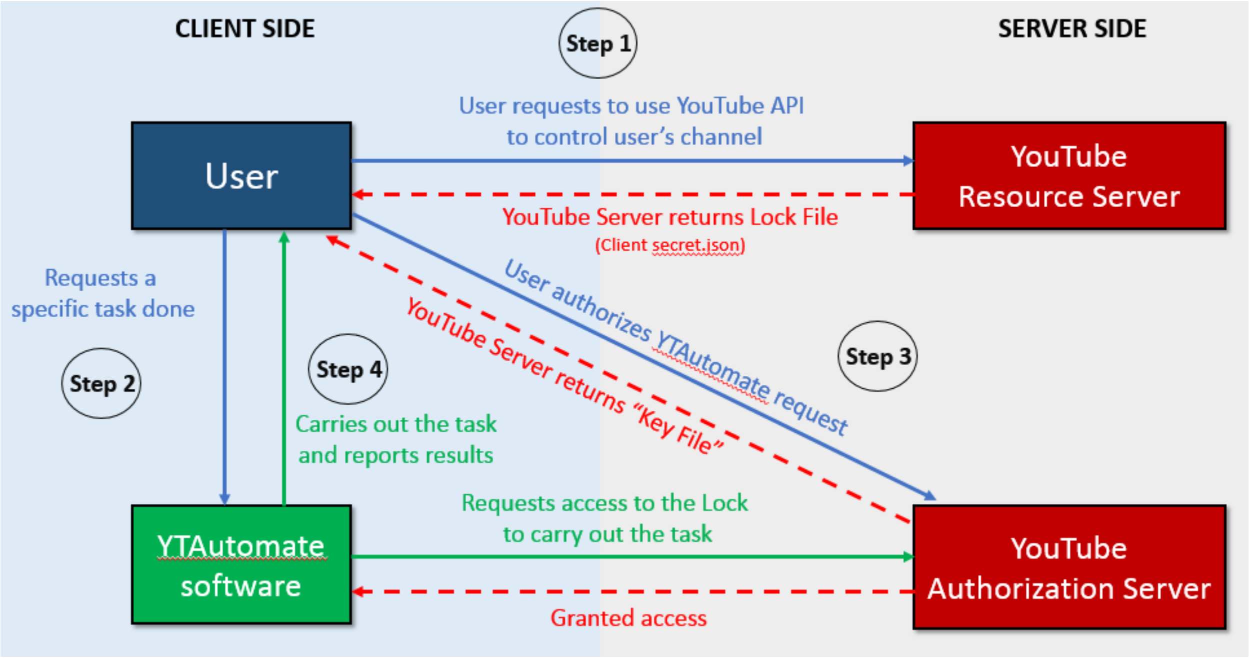
YTAutomate uses YouTube API for automating basic tasks. The API employs the OAuth 2.0 protocol for authentication and authorization. For more information on the security process, please visit Google Identity Platform. Below is a high-level summary of the OAuth 2.0 protocol implemented by YTAutomate.

The process of authentication and authorization is carried out in four main steps:

> **Step 1:** The user requests the use of YouTube API to control their channel from YouTube Resource Server. This is often done manually in the Google console (see section 3.2 for more details). YouTube approves and returns an OAuth 2.0 client credentials (normally stored in Client secrete.json file) for the user to download. This file is named as LOCK file in YTAutomate.
>
> **Step 2:** The user commands YTAutomate software to perform a specific task (e.g., upload a video) on their channel, which is identified by the specific LOCK they created earlier. YTAutomate will then send a request to YouTube Authorization Server asking for permission to perform the task.

Step 3: YouTube Authorization Server notifies the user for authorization. Once the request has been authorized by the user, YouTube will grant YTAutomate access to the API to perform the task. YouTube will also send the user a KEY file that allows the user to re-access the API in the future. This KEY file contains an 'access token' that will expire in one hour to ensure security and a 'refresh token' that can be used to obtain a new 'access token' when the user wants to perform a different task. These files should be kept confidential by the user in trusted machines. YTAutomate does not store or access these files without permission.

Step 4: YTAutomate performs the requested task and reports the results back to the user.


CLIENT SIDE
Step 1
SERVER SIDE
User requests to use YouTube API to control user's channel
User
YouTube Resource Server
YouTube Server returns Lock File
(Client secret.json)
Requests a specific task done
User authorizes YTAutomate request
YouTube Server returns "Key File"
Step 2
Step 4
Step 3
Carries out the task and reports results
Requests access to the Lock to carry out the task
YTAutomate software
YouTube Authorization Server
Granted access

3.2 Obtaining LOCK FILE

Below are the steps to obtain the LOCK FILE.json:

1) Use this wizard to create or select a project in the Google Developers Console and automatically turn on the API. Leave Create a project (no/yes) Click Agree & **Continue**, then **Go to credentials**.

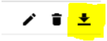
2) On the **Add credentials to your project** page, click the **Cancel** button.

3) At the top of the page, select the **OAuth consent screen** tab. Select an **Email address**, enter a **Product name** if not already set, and click the **Save** button.

4) Select the **Credentials** tab, click the **Create credentials** button and select **OAuth client ID**.

5) Select the application type **Other**, enter the name of your project, and click the **Create** button.

6) Click **OK** to dismiss the resulting dialog.

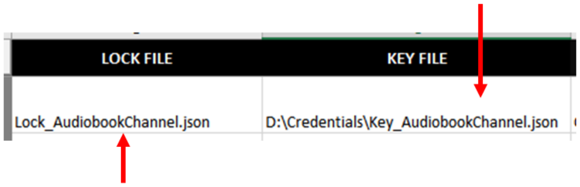
7) Click the file_download (Download JSON)  button to the right of the client ID.

8) Move the downloaded file to your working directory and rename it as you wish while keeping the ".json" extension (e.g., *Lock_AudiobookChannel*.json)

3.3 Obtaining KEY FILE

The KEY FILE will be automatically generated when you execute a task in the InputData.xlsm. Simply enter the name of the file that ends with ".json" (e.g., *D:\Credentials\Key_AudiobookChannel.json*) into the field < KEY FILE >. This file will be created after you have authorized with YouTube. If you enter file name without a folder path (e.g., *Key_AudiobookChannel.json*), the file will be created into the root folder (same folder with the InputData.xlsm file). Once you have created the KEY FILE, you can use it to authenticate other tasks in the same YouTube channel.

Enter file name/full path to an existing/to-be-created KEY FILE



LOCK FILE	KEY FILE
Lock_AudiobookChannel.json	D:\Credentials\Key_AudiobookChannel.json

Enter file name/full path to the LOCK FILE obtained from Google Console

When you run a task for the first time, a <cmd window> will pop up with an off-line verification link. Your default browser (e.g., Chrome or FireFox) will also automatically pop up with a prompt for verification. Sign in to the account that you used to create the LOCK FILE (section 3.2) and authorize the request. Copy the authorization code and paste it in the <cmd window>.

In case your web browser does not open automatically, please copy the link and manually paste it into your web browser to continue the authorization process. To copy the link in window command prompt, please follow these steps:

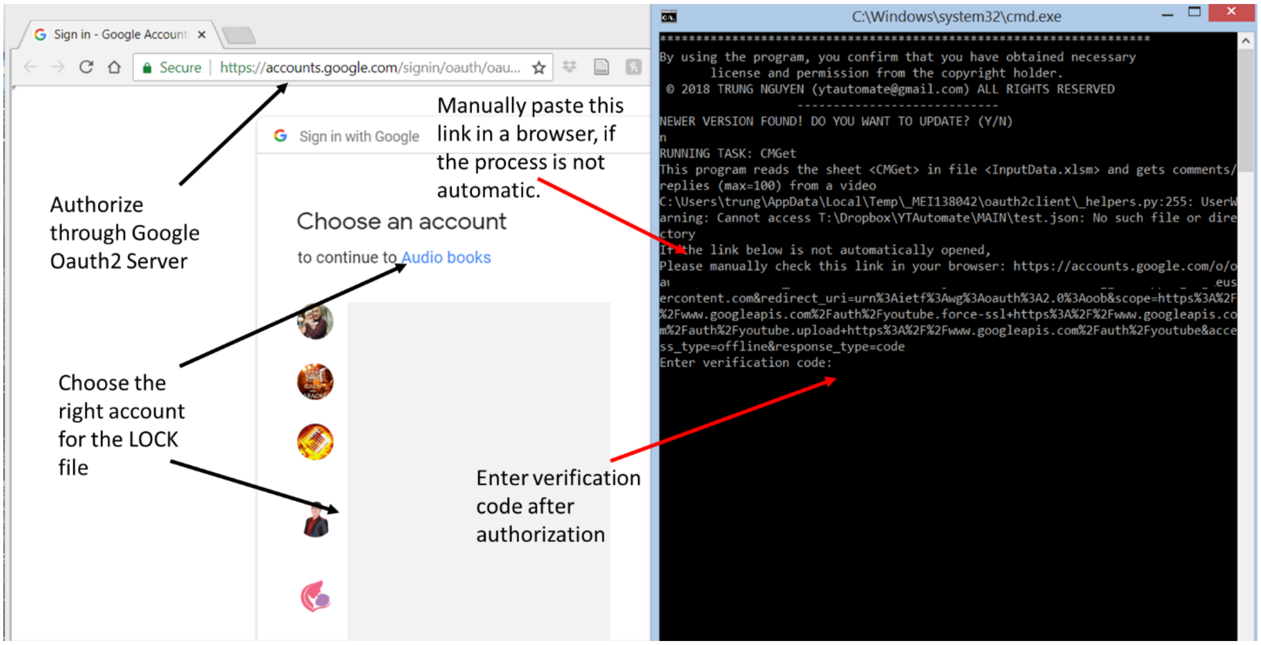
- right-click and choose 'Mark',

- highlight the whole link and press enter to copy.

- paste the link in Word or Notepad.

- remove all the white spaces in the link (make sure all the characters are continuously connected).

- copy and paste the corrected link into a web browser and press enter.


Sign in - Google Account
Secure
https://accounts.google.com/signin/oauth/oau...
Sign in with Google
Choose an account
to continue to Audio books
C:\Windows\system32\cmd.exe

Authorize through Google Oauth2 Server

Manually paste this link in a browser, if the process is not automatic.

Choose the right account for the LOCK file

Enter verification code after authorization

```
************************************************************************
By using the program, you confirm that you have obtained necessary
       license and permission from the copyright holder.
 © 2018 TRUNG NGUYEN (ytautomate@gmail.com) ALL RIGHTS RESERVED
                   -------------------------------
NEWER VERSION FOUND! DO YOU WANT TO UPDATE? (Y/N)
n
RUNNING TASK: CMGet
This program reads the sheet <CMGet> in file <InputData.xlsm> and gets comments/
replies (max=100) from a video
C:\Users\trung\AppData\Local\Temp\_MEI138042\oauth2client\_helpers.py:255: UserW
arning: Cannot access T:\Dropbox\YTAutomate\MAIN\test.json: No such file or dire
ctory
If the link below is not automatically opened,
Please manually check this link in your browser: https://accounts.google.com/o/o
a[redacted]eus
ercontent.com&redirect_uri=urn%3Aietf%3Awg%3Aoauth%3A2.0%3Aoob&scope=https%3A%2F
%2Fwww.googleapis.com%2Fauth%2Fyoutube.force-ssl+https%3A%2F%2Fwww.googleapis.co
m%2Fauth%2Fyoutube.upload+https%3A%2F%2Fwww.googleapis.com%2Fauth%2Fyoutube&acce
ss_type=offline&response_type=code
Enter verification code:
```

4. SPECIFIC TASKS

4.1 Understanding YouTube quota

The YouTube Data API uses a quota to limit user's operation. YouTube gives you 1,000,000 quotas per day to perform tasks via its API. In brief, different types of operations have different quota costs. For example, a simple read operation that only retrieves the ID of a video/comment has a cost of approximately 1 unit; a write operation has a cost of approximately 50 units; and a video upload has a cost of approximately 1600 units.

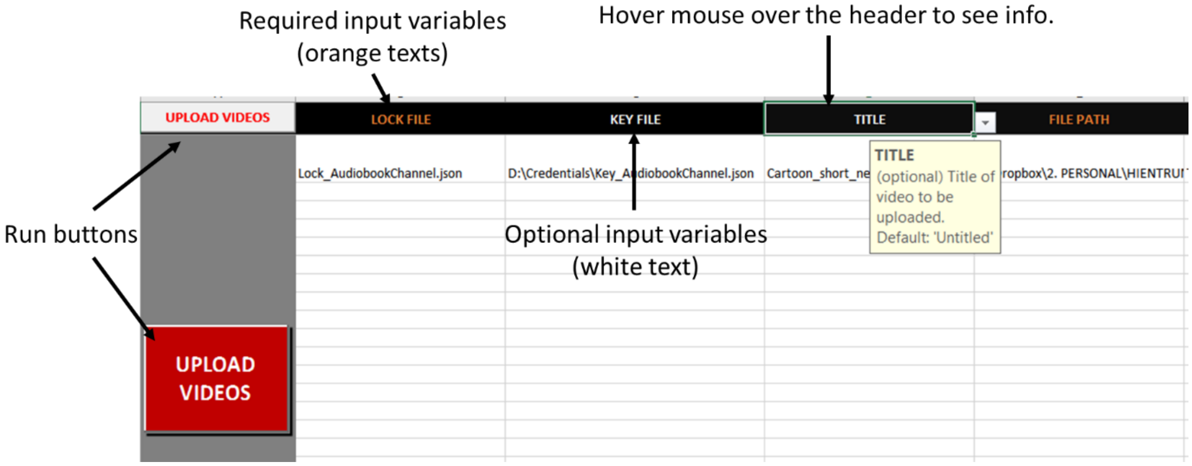
To calculate the quota cost, use this link: Determine quota cost

If you schedule automated Upload tasks without your attendance with YTAutomate, make sure to keep the number videos upload below 150 videos per day and use a wait time (>30 sec) between uploads to avoid errors.

4.2 Running tasks

To run the program, the user first specifies values for different variables (defined as headers) in a worksheet in the **InputData.xlsm** workbook corresponding to the specific task that they want the program to carry out. The user must input values for all required fields (**orange headers**) for the program to run. Optional fields are formatted as **white headers**. The user then hits the run button on the left-hand-side panel (or at the "A1" cell) to execute the task. The user can perform a task on multiple videos and multiple YouTube channels by filling different rows in a worksheet. The program will carry out actions in bulk in an ascending order.

Below are the definitions of the variables in the InputData.xlsm. Users can hover computer mouse over the headers in the InputData.xlsm to visualize the definition box.



UPLOAD VIDEOS	LOCK FILE	KEY FILE	TITLE	FILE PATH
	Lock_AudiobookChannel.json	D:\Credentials\Key_AudiobookChannel.json	Cartoon_short_ne	ropbox\2. PERSONAL\HIENTRUI

TITLE
(optional) Title of video to be uploaded.
Default: 'Untitled'

4.3 Description of input variables

Variables	Status	Description	Note
		Common Variables	
LOCK FILE	required	The <LOCK FILE>.json identifies YouTube channel.	This .json file should be acquired from https://goo.gl/habw7x.
KEY FILE	optional	Name of the <KEY FILE.JSON> file. If you do not have one, please enter a filename, it will be automatically generated after you have authenticated your channel. If left empty, key file will be default as <LOCK FILE> + "_KEY.JSON".	If left empty, key file will be created as <LOCK FILE> + "_KEY.JSON" in the root folder (same directory with InputData.xlsm)
TITLE	optional	Title of video to perform task on.	Default: 'Untitled'
FILE PATH	required	The path to the video	
DESCRIPTION	optional	The text that will go into the description box beneath each video on YouTube.	Use Alt+Enter to add new lines. Default: No description
TAGS	optional	The list of key words that will be used as tags for the video.	Key words need to be separated by comma. Default: No tags
PLAYLIST	optional	List of playlists that the video will be added to.	Playlists need to be separated by comma. Default: No playlist
PRIVACY	optional	Set the status of the video. This metric only takes 'public', 'unlisted', or 'private'.	Default: public
THUMBNAIL PATH	optional	The path to the image file that will be used as thumbnail for the uploaded video	Thumbnail is only allowed for verified channels!!! Default: No thumbnail
CATEGORY	optional	The category of the video (select from dropdown menu)	Default: Music Some categories might not be available in some country. Use

			this **Link** to check before performing tasks.
SAVE DATA TO .XLSX FILE	optional	The .xlsx file to store the information (e.g., ID and other metadata) of the videos.	If no file path is provided, the file will be saved to XLSX folder. Default: No storing of information
VIDEO-ID/URL or ID/URL	required	Specify if an URL/ID is just a single video, playlist of videos, or a whole channel Choose 'Yes' if the URL is a playlist or channel. Choose 'No' if the URL is a single video	Default: No
CHANNEL-ID	required	The ID of the specific channel controlling YTAutomate	
PLAYLIST/CHANNEL?	optional		
COMMENT/REPLY-ID	required	IDS of the top-level comments or of the replies in each top-level comment.	IDs can be acquired from running the CMGet. Note: for CMUpdate and CMDeletet Tasks, IDs must be for your **own** comments/replies.

Upload Task

MOVE UPLOADED TO FOLDER	optional	Move uploaded videos to this folder.	Default: No move files
WAIT TIME	optional	This is the break time in second between each upload.	Default: 20 (seconds)

Update Task

NEW TITLE	optional	New title of the video.	Default: 'Untitled'
NEW DESCRIPTION	optional	Update the video with the new description.	Use Alt+Enter to add new lines. Default: No description
NEW TAGS	optional	List of key words for the new tags.	Key words need to be separated by comma. Default: No tags

Download Task

RENAME	optional	Re-name the downloaded videos. Input name of video or audio without extension.	Rename is not effective when downloading playlists or channels. Default: No renaming
SAVE DOWNLOADED ID TO .TXT FILE	optional	The .txt file to store the downloaded video IDs If specified, downloaded videos will not be re-downloaded.	Default: No storing of downloaded IDs
SAVE FILES TO FOLDER	optional	Path to folder where the downloaded videos will be saved into	Default: videos will be saved into \DOWNLOADED
EXTRACT AUDIO	optional	Extract the audio streams of the downloaded videos. Yes: Extract audio No: No extracting video Audio only: Only download audio	Default: No
AUDIO FORMAT	optional	Format of the audio file. (choose from dropdown)	Default: mp3

		Possible options: best, mp3, wav, m4a, aac, flac, vorbis	
AUDIO QUALITY	optional	Quality of the audio file. Possible value is from 0 (best) - 9 (worse)	Default: 0

CMGet Task

NUMBER OF COMMENTS	optional	Number of comments to retrieve. Maximum of 100.	Default: 100

CMInsert Task

COMMENT TO INSERT	optional	The text to insert as a comment to a video.	Default: empty text
SAVE COMMENT ID TO .XLSX FILE	optional	The name of the .xlsx file to save comment IDs into.	If no directory, file will be saved to XLSX folder. Default: No saving

CMReply Task

TOP-LEVEL-ID	required	IDs of top-level comments.	IDs can be acquired from running the CMGet
COMMENT TO REPLY	optional	The text used to reply to top-level comment.	Default: empty text

CMupdate Task

NEW COMMENT	optional	The text used to update the existing comment or reply.	Default: empty text