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**Batch code:** MDTE007\_B

**Course Name:** Master Data Science

**Project Title:** YouTube Data Harvesting and Warehousing using SQL and Streamlit

**GitHub Link:** <https://github.com/SETHU0010>

**Skills take away From This Project:**

- Python scripting,
- Data Collection,
- Streamlit, API
- integration,
- Data Management using SQL

**Domain:**

Social Media

**Description:**

This project aims to create a Streamlit application that allows users to access and analyse data from multiple YouTube channels. The application facilitates the retrieval of various data points such as channel details, video information, playlists, and comments using the YouTube API. It also provides functionality to store this data in a SQL database MySQL and query it for analysis.

# YouTube Data Harvesting and Warehousing using SQL and Streamlit

## Problem Statement:

The problem statement is to create a Streamlit application that allows users to access and analyze data from multiple YouTube channels. The application should have the following features:

1. Ability to input a YouTube channel ID and retrieve all the relevant data (Channel name, subscribers, total video count, playlist ID, video ID, likes, dislikes, comments of each video) using Google API.
2. Ability to collect data for up to 10 different YouTube channels and store them in the data lake by clicking a button.
3. Option to store the data in a MySQL .
4. Ability to search and retrieve data from the SQL database using different search options, including joining tables to get channel details.

## Approach:

1. Set up a Streamlit app
2. Connect to the YouTube API
3. Store and Clean data
4. Migrate data to a SQL data warehouse
5. Query the SQL data warehouse
6. Display data in the Streamlit app

## Workflow:

1. Data Retrieval
2. Data Storage
3. SQL Data Warehouse
4. Data Analysis
5. Streamlit UI

# YouTube Data Harvesting and Warehousing using SQL and Streamlit

## Prerequisites:

Before using the application, ensure you have the following prerequisites set up:

1. **Python Environment:** Install Python on your system.
2. **Google API Key:** Obtain a Google API key from the Google Cloud Console for accessing the YouTube API.
3. **Dependencies:** Install required Python libraries using requirements.txt.
4. **SQL Database:** Set up MySQL or PostgreSQL database and configure connection details in the code.
5. **Streamlit:** Install Streamlit library for running the application.

## Required Python Libraries:

The following Python libraries are required for the project:

1. **google-api-python-client:** For interacting with the YouTube API.
2. **pandas:** For data manipulation and analysis.
3. **mysql-connector-python:** For connecting to MySQL database.
4. **Streamlit:** For building the user interface and web application.
5. **datetime:** For handling date and time operations.

You can install these libraries using pip:

```
--> pip install google-api-python-client pandas streamlit mysql-connector-python
```

# YouTube Data Harvesting and Warehousing using SQL and Streamlit

## Set up a Streamlit app:

```
Anaconda Prompt - streamlit  X + ▾

(base) C:\Users\SETHU>conda activate Youtube_data

(Youtube_data) C:\Users\SETHU>cd "C:\Users\SETHU\Music\Guvi"

(Youtube_data) C:\Users\SETHU\Music\Guvi>streamlit run Sethu.py

You can now view your Streamlit app in your browser.

Local URL: http://localhost:8501
Network URL: http://192.168.1.4:8501
```

## Migrate data to a SQL data warehouse:

### Channel Details:

The screenshot shows a database interface with the following details:

- Schemas:** project, youtube.
- Tables:** channel\_details, comment\_details, playlist\_details, video\_details.
- Query:** SELECT \* FROM project.channel\_details;
- Result Grid:** Displays data for 10 rows. The columns are: Channel\_Name, Channel\_Id, Subscribers, Total\_Videos, Total\_VIEWS, Channel\_Description, Playlist\_Id.

Channel_Name	Channel_Id	Subscribers	Total_Videos	Total_VIEWS	Channel_Description	Playlist_Id
MS <CREATIVE	UC_20hbuJG33wrfqOAnmNw	36000	7227185	12	VIT University is a progressive educational instit...	UU_20hbuJG33wrfqOAnmNw
Velore Institute of Technology	UCAG9prjK9g2CvPRDKyq	64200	15914233	677	Velore Institute of Technology	UUAG9prjK9g2CvPRDKyq
Methagu Thirakkalan	UCAQdpelGSV7CXUYEl4u3-g	38700	3770481	49	Methagu Thirakkalan	UUAQdpelGSV7CXUYEl4u3-g
GUVi	UCdUoIMB98t3KgU-2RgQ	214000	3978447	1437	GUVi is an IIT-M & IIM-A incubated edu-tech co...	UUDUoIMB98t3KgU-2RgQ
VIT Chennai	UCF2Jk0GSPpZx60-ls-WnRA	10300	1998864	132	VIT Chennai, one of the leading best top univer...	UUFC2Jk0GSPpZx60-ls-WnRA
Sethumadhavan	UCJfKsy4gE9k4yGWkUZP94A	9	1250	7	God is Love.	UUJfKsy4gE9k4yGWkUZP94A
Village Cooking Channel	UCk3277e53pg5AE68dFg	2470000	7249558600	235	Village grandpa cooking traditional village food, ...	UUk3277e53pg5AE68dFg
ARAVIND KARNEESWARAN	UC592bTTAProdXgkH_WCw	111000	13450909	8	Village grandpa cooking traditional village food, ...	UU592bTTAProdXgkH_WCw
Franj 4443	UIC73WRTUMydJ9Ma_1Yr3f3Q	257000	70502779	1	Franj 4443	UUIC73WRTUMydJ9Ma_1Yr3f3Q
Error Makes Clever Academy	UICwir-evhuz2ZgOfTq_IptL_A	634000	37888187	170	Error Makes Clever Academy	UUICwir-evhuz2ZgOfTq_IptL_A

- Information:** Shows the table structure for channel\_details.
- Output:** Shows the execution of the query: 1 21:53:43 SELECT \* FROM project.channel\_details LIMIT 0,1000. Message: 10 row(s) returned. Duration / Fetch: 0.000 sec / 0.000 sec.

# YouTube Data Harvesting and Warehousing using SQL and Streamlit

## Playlist Details:

Schemas

Tables

Views

Stored Procedures

Functions

Table: playlist\_details

Columns:

- Playlist\_Id
- Channel\_Id
- Channel\_Name
- PublishedAt
- Video\_Count

Object Info Session

Query Completed

playlist\_details x

Result Grid | Filter Rows: | Edit: | Export/Import: | Wrap Cell Content: | Fetch Rows: |

1 • SELECT \* FROM project.playlist\_details;

Playlist_Id	Title	Channel_Id	Channel_Name	PublishedAt	Video_Count
PL_9uM5be2ampwYWhmL12A6E8aCfF6B6	GUVT	UCdu0JMD8t3KuUJ-zBrQ	GUVT	2023-04-24 07:54:11	340
PL_H4vGdG5G-dgjExwhi-wqfagqyvNQ	Learn Video   GUVT	UCdu0JMD8t3KuUJ-zBrQ	GUVT	2023-04-24 07:54:03	279
PL_H4vGdG5G-dgjExwhi-wqfagqyvNQ	Learn Video   GUVT	UCdu0JMD8t3KuUJ-zBrQ	GUVT	2018-01-15 06:11:23	231
PL_H4vGdG5G-dgjExwhi-wqfagqyvNQ	Cooking & Eating	UCdu0JMD8t3KuUJ-zBrQ	Village Cookin...	2018-05-15 16:37:48	216
PL_H4vGdG5G-L7Qh2WPrphn62QzQ	Indian Cuisine	UCdu0JMD8t3KuUJ-zBrQ	Village Cookin...	2018-01-13 12:22:16	137
PL_H4vGdG5G-MhYABs7l4adNFnP0IS	Non Veg Recipes	UCdu0JMD8t3KuUJ-zBrQ	Village Cookin...	2018-09-09 12:42:26	137
PL_H4vGdG5G-fBv3nwtz2SuV7R	Quick and Easy Recipes	UCdu0JMD8t3KuUJ-zBrQ	Village Cookin...	2018-09-02 11:15:52	87
PL_9uM5be2ampwYWhmL12A6E8aCfF6B6	30 Day Webinar	UCdu0JMD8t3KuUJ-zBrQ	GUVT	2020-03-16 12:00:20	85
PL_NHvGdG5G-12mPQ2AxNmlv5Suq1Cp	Mutton Recipes	UCdu0JMD8t3KuUJ-zBrQ	Village Cookin...	2018-07-17 09:58:16	61
PL_NHvGdG5G-958kVxypbGfklke2JzWk	Vegetarian Recipes	UCdu0JMD8t3KuUJ-zBrQ	Village Cookin...	2018-09-09 12:43:05	52
PL_9uM5be2ampwYWhmL12A6E8aCfF6B6	Learn with Industry Expert - ...	UCdu0JMD8t3KuUJ-zBrQ	GUVT	2023-04-17 05:36:46	49
PL_9uM5be2ampwYWhmL12A6E8aCfF6B6	How To   GUvt Series	UCdu0JMD8t3KuUJ-zBrQ	GUVT	2023-08-18 05:23:52	45
PL_NHvGdG5G-MLvRvXOjy-MFu16G6k	Fish Recipes	UCdu0JMD8t3KuUJ-zBrQ	Village Cookin...	2018-06-09 13:15:11	45
PL_NHvGdG5G-6v59H1tyabc_CU_JnrUsc	Seafood Recipes	UCdu0JMD8t3KuUJ-zBrQ	Village Cookin...	2018-05-04 20:46:03	41
PL_NHvGdG5G-_Abbee-TDdYs3y36EE7	Goat's Parts Recipes	UCdu0JMD8t3KuUJ-zBrQ	Village Cookin...	2018-12-20 15:48:04	40
PL_NHvGdG5G-8B00dadqt442bzWb103bc	Chicken Recipes	UCdu0JMD8t3KuUJ-zBrQ	Village Cookin...	2018-12-03 15:48:59	39

Output

Action Output

#	Time	Action	Message	Duration / Fetch
1	21:53:43	SELECT * FROM project.channel_details LIMIT 0, 1000	10 row(s) returned	0.000 sec / 0.000 sec
2	21:54:30	SELECT * FROM project.playlist_details LIMIT 0, 1000	108 row(s) returned	0.000 sec / 0.000 sec

## Video Details:

Schemas

Tables

Views

Stored Procedures

Functions

Table: video\_details

Columns:

- Channel\_Name
- Channel\_Id
- Video\_Id
- Title
- Tags
- Thumbnail
- Description
- Published\_Date
- Duration
- Views
- Likes
- Comments
- Favorite\_Count
- Definition
- Caption\_Status

Object Info Session

Query Completed

video\_details x

Result Grid | Filter Rows: | Edit: | Export/Import: | Wrap Cell Content: | Fetch Rows: |

1 • SELECT \* FROM project.video\_details;

Channel_Name	Channel_Id	Video_Id	Title	Tags	Thumbnail	Description
GUVT	UCdu0JMD8t3KuUJ-zBrQ	_IBRzJQzQ9k	Creating URL Shortener App   Rajavasantha   ... url tool app in thinkable, url app in thinkable, t...	https://i.ytimg.com/vi/_IBRzJQzQ9k/hddefault...		
Vellore Institute of Technology	UCAgprnkg2bcvPRDRkY	_SdCwZ533u	MBA Applications Open   MBA Applications   ... mba admissions, mba applications, mba program...	https://i.ytimg.com/vi/_SdCwZ533u/hddefault...		
Vellore Institute of Technology	UCAgprnkg2bcvPRDRkY	_78s-8dCwPM	MBA Admissions Open   MBA Applications   ... mba admissions, mba applications, mba program...	https://i.ytimg.com/vi/_78s-8dCwPM/hddefault...		
GUVT	UCdu0JMD8t3KuUJ-zBrQ	_TDFx0u1	Java intro	https://i.ytimg.com/vi/_TDFx0u1/hddefault...		
Methagu Thrakalam	UCAgprnkg2bcvPRDRkY	_Jm8Pp0o	Stack and Heap eng	https://i.ytimg.com/vi/_Jm8Pp0o/hddefault...		
Village Cooking Channel	UCdu0JMD8t3KuUJ-zBrQ	_Ahn1AP8PU	500 KG WATERMELON   Summer Health Drinks   ... 500 kg watermelon, watermelon juice, watermel...	https://i.ytimg.com/vi/_Ahn1AP8PU/hddefault...		
Vellore Institute of Technology	UCAgprnkg2bcvPRDRkY	_AU2FDcJuT	Robots performing Ayuda Puja at VIT, Vellore	https://i.ytimg.com/vi/_AU2FDcJuT/hddefault...		
GUVT	UCdu0JMD8t3KuUJ-zBrQ	_JxgBo1ou2A	List	https://i.ytimg.com/vi/_JxgBo1ou2A/hddefault...		
Vellore Institute of Technology	UCAgprnkg2bcvPRDRkY	_PTlwOUlJ2	Official Guinness World Record Video   #AIFor...	https://i.ytimg.com/vi/_PTlwOUlJ2/hddefault...		
Vellore Institute of Technology	UCAgprnkg2bcvPRDRkY	_dJtSPVYTQ	"Yoga for Health - Yoga at Home" online Session	https://i.ytimg.com/vi/_dJtSPVYTQ/hddefault...		
GUVT	UCdu0JMD8t3KuUJ-zBrQ	_JD4E414	Utilize this time for Upskilling   Dr.Marie Wilson   ...	https://i.ytimg.com/vi/_JD4E414/hddefault...		

video\_details x

Output

Action Output

#	Time	Action	Message	Duration / Fetch
1	21:53:43	SELECT * FROM project.channel_details LIMIT 0, 1000	10 row(s) returned	0.000 sec / 0.000 sec
2	21:54:30	SELECT * FROM project.playlist_details LIMIT 0, 1000	108 row(s) returned	0.000 sec / 0.000 sec
3	21:55:30	SELECT * FROM project.video_details LIMIT 0, 1000	1000 row(s) returned	0.000 sec / 0.031 sec

Schemas

Tables

Views

Stored Procedures

Functions

Table: video\_details

Columns:

- Channel\_Name
- Channel\_Id
- Video\_Id
- Title
- Tags
- Thumbnail
- Description
- Published\_Date
- Duration
- Views
- Likes
- Comments
- Favorite\_Count
- Definition
- Caption\_Status

Object Info Session

Query Completed

video\_details x

Result Grid | Filter Rows: | Edit: | Export/Import: | Wrap Cell Content: | Fetch Rows: |

1 • SELECT \* FROM project.video\_details;

Thumbnail	Description	Published_Date	Duration	Views	Likes	Comments	Favorite_Count	Definition	Caption_Status
url app in thinkable, t...	URL shortening is a technique on the World Wide Web to shorten long URLs.	2020-03-18 07:37:59	01:08:11	589	15	0	0	hd	false
https://i.ytimg.com/vi/_IBRzJQzQ9k/hddefault...	After witnessing the technical bona, also re...	2023-09-23 12:36:10	00:00:31	843	21	0	0	hd	false
https://i.ytimg.com/vi/_SdCwZ533u/hddefault...	MBA 2023 Applications Open   ...	2023-01-26 04:13:38	00:00:31	25533	27	0	0	hd	false
https://i.ytimg.com/vi/_78s-8dCwPM/hddefault...	VIT made a substantial impact in Ranking and Accreditations - 2023	2023-12-28 05:30:07	00:00:31	479	18	0	0	hd	false
https://i.ytimg.com/vi/_TDFx0u1/hddefault...	Java intro	2015-05-11 13:21:27	00:02:08	455	4	0	0	sd	false
https://i.ytimg.com/vi/_Jm8Pp0o/hddefault...	Glimpses of Riviera 2020 at VIT	2017-07-05 06:40:27	00:07:08	54	0	0	0	hd	false
https://i.ytimg.com/vi/_Ahn1AP8PU/hddefault...	Methagu - II Official Motion Poster   https://youtu...	2022-01-12 12:29:10	00:00:31	53509	6728	75	0	hd	false
https://i.ytimg.com/vi/_AU2FDcJuT/hddefault...	gravity food fun	2023-09-23 12:36:10	00:00:31	90001839	546392	8339	0	hd	false
https://i.ytimg.com/vi/_JxgBo1ou2A/hddefault...	MBA 2023 Applications Open   ...	2020-03-07 12:03:51	00:00:30	55087	1477	0	0	sd	false
https://i.ytimg.com/vi/_PTlwOUlJ2/hddefault...	Ranking and Accreditations - 2023	2017-07-11 11:15:16	00:05:00	36	1	0	0	hd	false
https://i.ytimg.com/vi/_dJtSPVYTQ/hddefault...	Guinness World Record Video   #AIFor...	2021-04-23 06:40:14	00:02:38	11889	294	59	0	sd	false
https://i.ytimg.com/vi/_dJtPDRex/hddefault...	Robotics performing Ayuda Puja at VIT, Vellore	2019-05-11 13:26:04	00:00:31	1358	15	0	0	hd	false
https://i.ytimg.com/vi/_dJtPVPv7Q/hddefault...	"Yoga for Health - Yoga at Home" online Session	2020-06-21 10:54	00:04:56	461	22	0	0	hd	false
https://i.ytimg.com/vi/_dJtEPHs14/hddefault...	Stay on top of your industry by interacting with...	2020-04-28 13:48:45	00:01:19	2398	73	2	0	sd	false

video\_details x

Output

Action Output

#	Time	Action	Message	Duration / Fetch
1	21:53:43	SELECT * FROM project.channel_details LIMIT 0, 1000	10 row(s) returned	0.000 sec / 0.000 sec
2	21:54:30	SELECT * FROM project.playlist_details LIMIT 0, 1000	108 row(s) returned	0.000 sec / 0.000 sec
3	21:55:30	SELECT * FROM project.video_details LIMIT 0, 1000	1000 row(s) returned	0.000 sec / 0.031 sec

# YouTube Data Harvesting and Warehousing using SQL and Streamlit

## Comment Details:

The screenshot shows the MySQL Workbench interface with the 'comment\_details' table selected. The table has columns: Comment\_Id, Video\_Id, Comment\_Text, Comment\_Author, and Comment\_Published. The data grid displays numerous comments from various users like @rajanation47, @user-kn6ms8tg7, etc., published between 2023-03-08 and 2023-12-09.

Comment_Id	Video_Id	Comment_Text	Comment_Author	Comment_Published
Ugw_9Bq6zJ8atYqrN44aABAg	XToNuSDW8w	I love this song	@rajanation47	2023-03-08 17:23:30
Ugw_aClzDkBEvRJ244aABAg	bGER-32n8w	Today video is sound kamyai erukuthu	@karthiin4074	2023-04-28 14:36:52
Ugw_eH_l4pRg_xl344aABAg	IEctY-77w	hi	@saiprabhas142	2023-05-01 14:16:44
Ugw_CdPmuC_wtkd4AaABAg	oeGGx_773g	Unkalukkum Chernnam enna ..? Neenga Joly ...	@sevensmar1549	2023-12-09 19:05:21
Ugw_egBF0tstjPaZt4AaABAg	_kg2zuyvOKk	Popcorn videokum million likes niga matun thaan	@indumathes	2021-11-18 03:29:47
Ugw_FBD8F0509Pq4x4AaABAg	UHEVb0o8BA	Camera man வ ஏ ஏ ஏ ஏ	@Satya_7	2022-07-21 12:35:13
Ugw_F835344aABAg	UHfXQD000Q	Bhagavathy log ko kabhi maaf nahi karega	@nehtidairies9494	2022-08-27 14:45:53
Ugw_Jd27HmTqG44aABAg	UJ-AvLcFt	ஏங்கள் முடிசு	@rajakulara138	2021-03-27 14:52:07
Ugw_Jd6ed56qdyhV44aABAg	0824hyo24uA	5 minutes epusum sanda poduma they Mari e...	@ashdeuday2329	2023-03-27 16:11:59
Ugw_Jd6ed56qdyhV44aABAg	100f5CBMkvA	What happened to that Anna always full energy...@vishnuishu4356	@vishnuishu4356	2021-12-24 15:42:52
Ugw_Li_kz7Tg2z4AaABAg	XToNuSDW8w	Looks yummy	@musratbahannaya	2023-05-17 14:41:06
Ugw_oO5mPQ2VW3dp4AaABAg	fgrfJcpTp0	Super டெ டெ	@aadhyababilash5584	2023-03-27 08:17:11
Ugw_pvYmm746AGL4AaABAg	K57LQODvhI	ஏந்தெந்த காலமாகவிட அதனாமறம் ஏடு...	@jevaraj7753	2022-11-13 18:16:16
Ugw_qBSQfSLNKO-AR4AaABAg	QnERUQStqA	Grand pa is back ☺	@GaturRahman-p3nt	2024-05-01 23:36:05
Ugw_bqVi594SAV4AaABAg	JGHL1_SHYE	Amazing cooking skills ☺	@KhomPark88	2022-11-18 12:09:34
Ugw_vDmzHvADdAaABAg	m-7JhnyvDl	Well Tr_Drastic Da_ Thank You_ Still best now	@KeanaE339	2023-12-14 17:17:44

## Display data in the Streamlit app:

### Home Page:

The Streamlit app home page features a sidebar with developer information, contact details, and project skills. The main area displays a title 'YouTube Data Harvesting and Warehousing using SQL and Streamlit' and a section for entering channel details. It also includes a table of channels and a section for running SQL queries.

**About the Developer**  
Sethumadhavan V

**Contact Details**  
Email: [sethumadhavanyelu2002@example.com](mailto:sethumadhavanyelu2002@example.com)  
Phone: 9159299878  
[LinkedIn ID](#)

**Skills take away From This Project**  
Python Scripting  
Data Collection  
Streamlit  
API Integration  
Data Management using MySQL

**Domain**  
Social Media

**YouTube Data Harvesting and Warehousing using SQL and Streamlit**

Enter the channel ID

Collect and store data

Select the Channel

MS -CREATIVE

SELECT THE TABLE FOR VIEW

CHANNELS  
 PLAYLISTS  
 VIDEOS  
 COMMENTS

Channel_Name	Channel_Id	Subscribers	Total_VIEWS	Total_Videos	Chai
MS -CREATIVE	UC_2Ohbu1G33swfqxOAnmNw	35,900	7,217,340	12	
Tamil Annai	UC80KOaz1JWoRWFJOK8zbw_Q	23,100	6,274,438	135	
Sethumadhavan	UCJVKsy4gEpK4yG6WKUZPj4A	9	1,250	7	God
Mr Tamilian International Movies	UCodhh8zXzyb1wVCRkpr1w	107,000	12,497,064	35	Expl
SMART MACHI FF	UCpg07Wap31f_UczM1HgdJbw	6,690	644,308	180	FRE
Its Ak	UCPpH1MhLKRcQg-UgkaVdtw	2,820	127,967	125	Foc
Data Science Tamil	UCuISXcJyynHa5k_IqDzAgwQ	1,020	152,703	71	Wel

**Comprehensive Analysis of YouTube Videos and Channels Using SQL Queries**

Select the SQL query

1. What are the names of all the videos and their corresponding channels?

# YouTube Data Harvesting and Warehousing using SQL and Streamlit

## Enter the channel ID

The screenshot shows a Streamlit application running in a browser window titled "Sethu - Streamlit". On the left, there's a sidebar with "About the Developer" containing a profile picture of a man in a blue shirt and the name "Sethumadhavan V". Below it are "Contact Details" with email "sethumadhavanvelu2002@example.com" and phone "9159299878", and a "LinkedIn ID". Under "Skills take away From This Project", there are "Python Scripting" and "Data Collection". The main content area has a title "YouTube Data Harvesting and Warehousing using SQL and Streamlit". It includes a text input field with the placeholder "Enter the channel ID" containing the value "UCStXlbTIAPrqdJGktX\_WCw", a button "Collect and store data", a dropdown "Select the Channel" set to "MS -CREATIVE", and a section "SELECT THE TABLE FOR VIEW" with radio buttons for "CHANNELS" (selected), "PLAYLISTS", "VIDEOS", and "COMMENTS". A table below shows data for two channels:

Channel_Name	Channel_Id	Subscribers	Total_Views	Total_Videos	Chai
MS -CREATIVE	UC_2Ohbu1G33swfqxOAnmNw	35,900	7,217,340	12	
Tamil Annai	UC80KOaz1JWoRWFJ0K8zbw_Q	23,100	6,274,438	135	

## Channel Details Upload Successfully:

This screenshot shows the same Streamlit application after the channel details have been uploaded. The "Collect and store data" button is now green and displays the message "Upload completed successfully". The rest of the interface remains the same, including the sidebar with developer information and the main form area with the channel ID input and table view.

# YouTube Data Harvesting and Warehousing using SQL and Streamlit

## Channel Details:

Channel_Name	Channel_Id	Subscribers	Total_VIEWS	Total_Videos	Channel_Description	Playlist_Id
MS-CREATIVE	UC_2Ohbu1IG33swfqxOAnmNw	36,000	7,227,185	12		UU_2Ohbu1IG33swfqxOAnmNw
Vellore Institute of Technology	UCA9pirjKrKlg2bCvPKRDkyg	64,200	15,914,233	677	VIT University is a progressive educational institution that is dedicated to the pursuit	UUA9pirjKrKlg2bCvPKRDkyg
Methagu Thiraikkalam	UCAQdpeUG5V7CXUYE1uu3-g	38,700	3,770,481	49	தமிழ்மூத்தையும், தமிழ்த்தேசிய சித்தாந்தங்களையும், தமிழ்த்தேச	UUAQdpeUG5V7CXUYE1uu3-g
GUVI	UCdulolMfd8tT3KoU0-zBRgQ	214,000	3,978,447	1,437	GUVI is an IIT-M & IIM-A incubated edu-tech company that offers Wide range of online	UUdulolMfd8tT3KoU0-zBRgQ
VIT Chennai	UCF2JkNSGPzLz60-ls4BtWRA	10,300	1,998,864	132	VIT Chennai, one of the leading best top university in India and over the world. This u	UUf2JkNSGPzLz60-ls4BtWRA
Sethumadhan	UCJVksy4gEpk4yG6WKUZPj4A	9	1,250	7	God is Love.	UUJVksy4gEpk4yG6WKUZPj4A
Village Cooking Channel	Uck3Jzr7eS3pg5AGEvBdEvFg	24,700,000	7,248,958,600	235	Village grandpa cooking traditional village food, country foods, and tasty recipes for	UUK3Jzr7eS3pg5AGEvBdEvFg
ARAVIND KARNEESWARAN	UCstXlbTIApqrqJGktX_WCw	111,000	13,450,909	8		UUSXlbTIApqrqJGktX_WCw
Franj 4443	UCT3WRTLMydU9Ma1_Vrf3zIq	257,000	70,502,779	1		UUT3WRTLMydU9Ma1_Vrf3zIq
Error Makes Clever Academy	UCwrv-huzGzgDFrq_1pLt_A	634,000	37,888,187	170	Empowering developers to level up their skills through training in software developr	UUwr-evhuzGzgDFrq_1pLt_A

## Playlists Details:

Playlist_Id	Title	Channel_Id	Channel_Name	PublishedAt	↓ Video_Count
PL_9uM5be2ampWjMVHLN2A6GE8cOFGet8G	Shorts   Guvi	UCdulolMfd8tT3KoU0-zBRgQ	GUVI	2023-04-24 07:54:11	340
PL_9uM5be2amqYCG5KmehgW9gN2xoFZHQ2	Latest Video   Guvi	UCdulolMfd8tT3KoU0-zBRgQ	GUVI	2023-04-26 08:18:03	279
PL-NHxGqGGGk8gi9EXxwh-ioBMajeyt9V8	Village Cooking Videos	Uck3Jzr7eS3pg5AGEvBdEvFg	Village Cooking C	2018-11-15 06:11:23	231
PL-NHxGqGGGk9ddr6yKRghJfvafKPU-n0tT	Cooking and Eating	Uck3Jzr7eS3pg5AGEvBdEvFg	Village Cooking C	2018-08-15 16:37:48	216
PL-NHxGqGGGk-MYhABlletjHa6oNFPpOtS	Non Veg Recipes	Uck3Jzr7eS3pg5AGEvBdEvFg	Village Cooking C	2018-05-09 12:42:26	137
PL-NHxGqGGGk-LZNQh2WFfR9zNmb_MZQcr	Indian Cuisine	Uck3Jzr7eS3pg5AGEvBdEvFg	Village Cooking C	2018-07-13 12:22:16	137
PL-NHxGqGGGk8fx5bYnjwxHZr5v8C_0T-R	Quick and Easy Recipes	Uck3Jzr7eS3pg5AGEvBdEvFg	Village Cooking C	2018-09-02 11:15:52	87
PL_9uM5be2ampwmkKdL7xVzzOTroWP2jc4	30 Day Webinar	UCdulolMfd8tT3KoU0-zBRgQ	GUVI	2020-03-16 12:00:20	85
PL-NHxGqGGGk92mbPKX2AXnwiv35uq1Cfp	Mutton Recipes	Uck3Jzr7eS3pg5AGEvBdEvFg	Village Cooking C	2018-07-17 09:58:16	61
PL-NHxGqGGGk96lkVjvpBKGfIdKE2lwk	Vegetarian Recipes	Uck3Jzr7eS3pg5AGEvBdEvFg	Village Cooking C	2018-05-09 12:43:05	52
PL_9uM5be2ampjCzf-3Njxyw9ADWV7otvb	Learn with Industry Expert - We	UCdulolMfd8tT3KoU0-zBRgQ	GUVI	2023-04-17 05:36:46	49
PL-NHxGqGGGk-MLvlRK0kOy-MgFu16Gi6k	Fish Recipes	Uck3Jzr7eS3pg5AGEvBdEvFg	Village Cooking C	2018-08-09 13:15:11	45
PL_9uM5be2amqDOa_4CsWNVnkYEefbjTFK	How To   Guvi Series	UCdulolMfd8tT3KoU0-zBRgQ	GUVI	2023-05-18 05:23:52	45
PL-NHxGqGGGk8Xr69IH1yabcCU_knrUsc	Seafood Recipes	Uck3Jzr7eS3pg5AGEvBdEvFg	Village Cooking C	2018-05-04 20:46:03	41
PL-NHxGqGGGk_cAsbee-TDdYs3yl36EE7	Goat's Parts Recipes	Uck3Jzr7eS3pg5AGEvBdEvFg	Village Cooking C	2018-12-03 15:48:04	40
PL-NHxGqGGGk8BIX0adstQ442qbwh1O3XbC	Chicken Recipes	Uck3Jzr7eS3pg5AGEvBdEvFg	Village Cooking C	2018-12-03 15:48:59	39
PL-NHxGqGGGk-mWRryD98PiDf_OUb0eG-C	Easy Snack Recipes	Uck3Jzr7eS3pg5AGEvBdEvFg	Village Cooking C	2018-08-21 18:03:17	37
PL_9uM5be2amp-kjUV63wsdjFM6J46jSo2	C++ Course	UCdulolMfd8tT3KoU0-zBRgQ	GUVI	2019-03-20 01:56:12	36
PL_9uM5be2amoYL3WAwcL0AOgd2SXg80Q0	ReactNative	UCdulolMfd8tT3KoU0-zBRgQ	GUVI	2019-06-18 15:00:36	35
PL-NHxGqGGGk-JL4R9qtvd9AG9OCj9gMgp	Snack Recipes	Uck3Jzr7eS3pg5AGEvBdEvFg	Village Cooking C	2018-09-02 11:19:33	34
PL-NHxGqGGGk8RrehRjfZWhiJUsnSbj-TR	Indian Street Food Recipes	Uck3Jzr7eS3pg5AGEvBdEvFg	Village Cooking C	2018-07-13 12:23:04	31
PL_9uM5be2amqgN9r4iBc9jE-1mDs78fD	Zen Class by GUVI - Testimonial	UCdulolMfd8tT3KoU0-zBRgQ	GUVI	2023-03-17 05:30:28	31
PLvepBxfiao2qCm6QgUay9LUAhvBglOb	Java Programming Tutorial Ser	UCwrv-huzGzgDFrq_1pLt_A	Error Makes Cle	2024-04-01 10:40:13	28
PLvepBxfiao1h01vPoSkQ1X4dbjGX9bm	Python Programming Tutorial S	UCwrv-huzGzgDFrq_1pLt_A	Error Makes Cle	2023-05-08 05:07:14	27
PL_9uM5be2amoCeaZNVq6vk5aGMhp0QDUu	PHP Hindi	UCdulolMfd8tT3KoU0-zBRgQ	GUVI	2020-03-30 10:54:13	26
PL-NHxGqGGGk97SP4Met9SJ6mQqsK71-VG	Vegan Recipes	Uck3Jzr7eS3pg5AGEvBdEvFg	Village Cooking C	2018-07-13 12:20:11	22
PL_9uM5be2amqc6DkyZ4k3fS7eOWuRoOAu	payITforward   Arun Prakash   P	UCdulolMfd8tT3KoU0-zBRgQ	GUVI	2023-05-04 06:24:55	22
PL-NHxGqGGGk-3nur5KV2DXG4A8Sk0JtU	Egg Recipes	Uck3Jzr7eS3pg5AGEvBdEvFg	Village Cooking C	2018-04-29 18:29:57	21

# YouTube Data Harvesting and Warehousing using SQL and Streamlit

## Videos Details:

## **Comments Details:**

Comment_Id	Video_Id	Comment_Text	Comment_Author	Comment_Published
Ugw__5gJejo_R3eidV4AaABAgn	GQghpFMFmHLE	Varala varalaaa samakaratha pakala vaaaa	@petter_2k714	2021-11-09 13:37:45
Ugw__53f0CE5362u5FV4AaABAgn	2Ny5GR9djKM	Super	@kishanyadav-j8wk	2023-01-02 14:09:14
Ugw__6jEctybqlJyGp4AaABAgn	5YvuFoszfc	Good cooking your videos again your hardword 😊😊	@Guhan742	2022-04-13 01:38:35
Ugw__9Bq6zJi8atYqrN4AaABAgn	XT0nNuSDW8w	🔥🔥🔥🔥	@rajanation47	2023-03-08 17:23:30
Ugw__aClzDkcBEVrJZ4AaABAgn	bdGER-3Zm8w	I love this song	@user-kn6ms8tg7j	2023-11-05 16:25:51
Ugw__C1TgqqVX6AKXn54AaABAgn	H7aGRi70wbU	Today video la sound kamiya erukuthu	@karthikm4074	2023-04-28 14:36:52
Ugw__cEh_l4bPgR_xLJ4AaABAgn	ltEtcYY-T7w	hii	@saiprabha6142	2023-05-01 14:16:44
Ugw__CsNtPmuC_wt0kd4AaABAgn	oekGGx_h73g	Ungalukkum Chennai� enna ..? Neenga Joly yea irun	@sevensmart5449	2023-12-08 19:05:21
Ugw__egBBFOstaUPaZt4AaABAgn	_kgZduyROlk	Popcorn videokum million likes inga matum thaan	@indumathies	2021-11-18 03:29:47
Ugw__FBIXwnz06VPq4x4AaABAgn	Li4nEWbobBA	Camera man 🚨⚠️⚠️⚠️⚡⚡⚡	@Sathy_7	2022-07-21 12:35:13
Ugw__GUS63Mmo_MQ4l54AaABAgn	sQcMKXJDpbQ	Bhagwan tum log ko kabhi maaf nhi karega	@nehjiitdairies9494	2022-05-31 09:10:53
Ugw__IUFZJtbnT9clqJ4AaABAgn	czrAvEBKrf4	సూపర్ మద్ది	@rajukakara188	2021-10-27 14:52:07
Ugw__ju8keoD6jughN4AaABAgn	082Mqyo24xA	5 members eppaum sanda podama ithey Mari eppaum i	@ashdeuday2329	2023-03-27 16:11:59
Ugw__JxaNkdmzamT9nZ4AaABAgn	KXHf3CBMnvk	What happened to that anna always full energy voice at	@praveenkumarbolte6	2021-12-24 18:38:35
Ugw__KqUMa16faKE3Px4AaABAgn	KXHf3CBMnvk	Super Anna's 👏 keep rocking 👏	@vishuvishu4356	2021-12-24 15:42:52
Ugw__Li_trs27-Ig2oZ4AaABAgn	XT0nNuSDW8w	Looks yummy ❤	@nusratjhannaysa	2023-05-17 14:41:06
Ugw__oO-5mnPQ2VM3dp4AaABAgn	fqrqFJcqTp0	Super 🌟🌟🌟	@aadhyabhilash5584	2023-03-22 08:17:11
Ugw__pWYrm7liiNGJLJ4AaABAgn	K57TLQQbdhl	எங்கள் குலத்தொழில் பண்ணமரம் ஏறுதல் ↗	@jesuraj57753	2022-01-13 18:16:16
Ugw__qB5dOLSInK0-AR4AaABAgn	QmEf6UC5lqA	Grand pa is back 😊	@GaziurRahman-ip3m	2024-05-04 23:36:05
Ugw__txqlvI5945AVy4AaABAgn	JG4tLI_5HYE	Amazing cooking skills 😊	@KhornPark88	2022-11-15 12:09:34

# YouTube Data Harvesting and Warehousing using SQL and Streamlit

## SQL Query Output need to displayed as table in Streamlit Application:

1. What are the names of all the videos and their corresponding channels?

	Video_Name	Channel_Name
0	Creating URL Shortener App   Rajavasanthan   #30daysWebinar   GUVI	GUVI
1	gravitas food fun	Vellore Institute of Technology
2	MBA 2023 Admissions Open   MBA Applications   MBA Programme @ VITBS   VIT	Vellore Institute of Technology
3	VIT Ranking & Accreditations - 2023	Vellore Institute of Technology
4	Java intro	GUVI
5	Stack and Heap eng	GUVI
6	Methagu-II Official Motion Poster 🎬 <a href="https://youtu.be/EKHSJtFyES4">https://youtu.be/EKHSJtFyES4</a> #Methagu2 #GUVI Methagu Thiraikkalam	Methagu Thiraikkalam
7	500 KG WATERMELON   Summer Health Drinks   WaterMelon Juice from Farm Fresh Fr	Village Cooking Channel
8	Glimpses of Riviera 2020 at VIT!	Vellore Institute of Technology
9	Robots performing Ayudha Puja at VIT, Vellore	Vellore Institute of Technology
10	List	GUVI
11	Official Guinness World Record Video   #AIforIndia Virtual event - GUVI   BUDDI.AI	GUVI
12	VITEEE 2019 Counselling   Col. Saurabh Kant Sharma (Parent)	Vellore Institute of Technology
13	"Yoga for Health - Yoga at Home" online Session	Vellore Institute of Technology
14	Utilize this time for Upskilling   Dr.Marie Wilson   Jeppiar Institute of Technology   GUVI	GUVI
15	013 JavaScript Arrays	GUVI
16	Vellore Institute of Technology, an Institution of Eminence	Vellore Institute of Technology
17	Danger Alert : Fake Experience #shorts #emc #jobhacks #jobsearch	Error Makes Clever Academy
18	♦ VIT is my Best Decision 🎉	VIT Chennai
19	B.Tech Student Testimonial   Last Date to Apply for VITEEE : 31st March 2023	Vellore Institute of Technology
20	👉👉👉   GUVI   #shortsvideo #govi #shortsyoutube #shortsfeed #shorts	GUVI
21	"Thanks To Guvi"   GUVI   Data Science  Testimonial	GUVI
22	How to Improve Your Math Skills?   GUVI   #shortsvideo #shortsyoutube	GUVI
23	Salary Parithabangal  GUVI   #shortsvideo #govi #shortsyoutube #shortsfeed #shortv	GUVI
24	POPCORN   Spicy Butter Popcorn Recipe Cooking In Village   Home Made Easy Popcor	Village Cooking Channel
25	The Average salary for developers and programmers in India #govi #developerlife #ar	GUVI
26	Stop complaining and Start Doing 💪🌟 #money	Error Makes Clever Academy
27	GUVI Encourages Women in Technology	GUVI
28	சுதந்திர தமிழ்மே ஒரே தீர்வு   மேதகு   METHAGU	Methagu Thiraikkalam
29	Time complexity Analysis  Arun Prakash   GUVI	GUVI

## YouTube Data Harvesting and Warehousing using SQL and Streamlit

2. Which channels have the most number of videos, and how many videos do they have?

	Channel_Name	Video_Count
0	GUVI	1,437
1	Vellore Institute of Technology	677
2	Village Cooking Channel	235
3	Error Makes Clever Academy	170
4	VIT Chennai	131

3. What are the top 10 most viewed videos and their respective channels?

	Video_Name	Channel_Name	Views
0	WATERMELON JUICE   Farm Fresh Fruit Juice Making   Watermelon Craft   Watermel	Village Cooking Channel	251,286,120
1	FRUIT SALAD   Colourful Healthy Fruits mixed salad recipe   Fruits Cutting and Eat	Village Cooking Channel	157,948,090
2	INSIDE MUTTON BIRYANI   Full Goat Mutton Cooking with Stuffed Biryani   Mutton Ins	Village Cooking Channel	140,189,733
3	FULL CHICKEN ROAST   Whole Fried Chicken Recipe Cooking in village   Free Range Ch	Village Cooking Channel	137,251,691
4	BIG ICE CREAM   Biggest Stick ice making   Watermelon ice   Kiwi ice   Milk ice   Fruit ic	Village Cooking Channel	116,147,192
5	VILLAGE MARRIAGE FOOD   Mutton Curry   Fish Fry   Boiled Egg Raththa Poriyal   Villag	Village Cooking Channel	99,694,665
6	MUTTON BIRYANI   Layered Mutton Biryani Recipe Cooking In Village   Goat Biryani Co	Village Cooking Channel	92,891,202
7	500 KG WATERMELON   Summer Health Drinks   WaterMelon Juice from Farm Fresh Fr	Village Cooking Channel	90,001,839
8	1000 PANI PURI   Golgappa Recipe Cooking in South Indian Village   How to make Pan	Village Cooking Channel	89,695,189
9	ARABIAN MUTTON BIRYANI with 2 FULL GOAT   Mutton Biryani Recipe with Grilled Go	Village Cooking Channel	86,371,213

## YouTube Data Harvesting and Warehousing using SQL and Streamlit

4. How many comments were made on each video, and what are their corresponding video names?

	Video_Name	Comment_Count
0	POPCORN   Spicy Butter Popcorn Recipe Cooking In Village   Home Made Easy Popcor	9,328
1	Stop complaining and Start Doing 🚀 💥 #money	62
2	DAY-14 Linux Job Opportunities in India   Learn Linux for a Lucrative Career! #linux #s	66
3	10 MILLION TINY FISHES   Ayira Meen   Rare River Fish Cleaning and Cooking In Village	9,119
4	#7 Aggregate Functions in SQL   SQL Tutorial for Beginners Series   SQL in Tamil   EMC	54
5	BUTTER GARLIC PRAWNS   Shrimp Roast with Butter   Spicy Prawn Recipe Cooking in	3,257
6	TURKEY SOUP   Traditional Turkey Soup Recipe Cooking in Village   Vaan Kozhi   Healt	5,232
7	NATURAL JUICE   Red Tender Coconut Sarbath   Healthy Juice Making in Village   Sum	3,810
8	BIG ICE CREAM   Biggest Stick ice making   Watermelon ice   Kiwi ice   Milk ice   Fruit ice	6,817
9	200 Pounds BIG TUNA FISH   Tuna Fish Cutting and Cooking in Village   Tuna Fish Stea	5,758
10	🔗 LinkedIn Premium Hack: Chat Without a Subscription! 🔗	19
11	SOAN PAPDI   Mega Ghee Soan Papdi Making in Indian Village   Indian Sweet Recipe   !	2,685
12	RAMBUTAN FRUIT   100 KG Rambutan Fruits for Cooking Fruit Pickle Recipe   Curd Ric	4,030
13	DAY 12 : Understanding Data Structures   Simplified Explanation #datastructures #shc	118
14	Nee Kavithaigala   Maragatha Naanayam   Aravind Karneeswaran   Cover Version   Dhi	594
15	2000 CHICKEN HEARTS FRY   Spicy Hearts Recipe Cooking in Village   Chicken Parts Re	4,183
16	Cloud Computing in 30 seconds. Clear definition about cloud in tamil.	159
17	BONE LESS MEAT   Meat Ball Recipe Cooking in Village   Mutton Keema Recipe   Mutto	3,444
18	FRIED CHICKEN DRUMSTICK   Chicken Fry Recipe with Mashed Potato   Chicken Recip	7,567
19	#07 Java Data Types Explained  Java Tutorial Series 📕 in Tamil   EMC Academy	13
20	Use the power of AI 🚀 ❤️ #ai #chatgpt #english	99
21	TINY SNAIL   Oomachi   Snail Hunting Cleaning Cooking and Eating in South Indian Vi	5,191
22	INSIDE MUTTON   Mud Mutton Recipe   Clay Covered Full Goat and Cooking in Direct F	3,679
23	#2 SQL vs NOSQL   Structured vs Unstructured   Relational vs Non Relational   Error M	116

## YouTube Data Harvesting and Warehousing using SQL and Streamlit

5. Which videos have the highest number of likes, and what are their corresponding channel names?

	Video_Name	Channel_Name	Likes
0	BIG MOMENT   RAHUL GANDHI Join In Village Cooking   Mushroom Biryani   Village Co	Village Cooking Channel	2,343,302
1	FULL CHICKEN ROAST   Whole Fried Chicken Recipe Cooking in village   Free Range Ch	Village Cooking Channel	1,818,239
2	DIAMOND BUTTON UNBOXING   First Time in South India   Meeting TN Chief Minister	Village Cooking Channel	1,663,148
3	WATERMELON JUICE   Farm Fresh Fruit Juice Making   Watermelon Craft   Watermelon	Village Cooking Channel	1,360,590
4	1000 PANI PURI   Golgappa Recipe Cooking in South Indian Village   How to make Pan	Village Cooking Channel	1,265,092
5	VILLAGE MARRIAGE FOOD   Mutton Curry   Fish Fry   Boiled Egg Raththa Poriyal   Villag	Village Cooking Channel	1,237,315
6	MUTTON BIRYANI   2 FULL GOAT Biryani recipe cooking and eating in village   Arabic F	Village Cooking Channel	1,232,129
7	FRUIT SALAD   Colourful Healthy Fruits mixed salad recipe   Fruits Cutting and Eating	Village Cooking Channel	1,213,300
8	MUTTON BIRYANI   Layered Mutton Biryani Recipe Cooking In Village   Goat Biryani Co	Village Cooking Channel	1,125,522
9	KING of VEGETABLE Recipe   SAMBAR Recipe with Four Side Dish   Veg Village Food Cc	Village Cooking Channel	1,027,881

6. What is the total number of likes and dislikes for each video, and what are their corresponding video names?

	Video_Name	↓ Total_Likes	Total_likes
311	BIG MOMENT   RAHUL GANDHI Join In Village Cooking   Mushroom Biryani   Village Co	2,343,302	2,343,302
1,793	FULL CHICKEN ROAST   Whole Fried Chicken Recipe Cooking in village   Free Range Ch	1,818,239	1,818,239
2,068	DIAMOND BUTTON UNBOXING   First Time in South India   Meeting TN Chief Minister	1,663,148	1,663,148
991	WATERMELON JUICE   Farm Fresh Fruit Juice Making   Watermelon Craft   Watermelon	1,360,590	1,360,590
267	1000 PANI PURI   Golgappa Recipe Cooking in South Indian Village   How to make Pan	1,265,092	1,265,092
949	VILLAGE MARRIAGE FOOD   Mutton Curry   Fish Fry   Boiled Egg Raththa Poriyal   Villag	1,237,315	1,237,315
1,787	MUTTON BIRYANI   2 FULL GOAT Biryani recipe cooking and eating in village   Arabic F	1,232,129	1,232,129
2,066	FRUIT SALAD   Colourful Healthy Fruits mixed salad recipe   Fruits Cutting and Eating	1,213,300	1,213,300
990	MUTTON BIRYANI   Layered Mutton Biryani Recipe Cooking In Village   Goat Biryani Co	1,125,522	1,125,522
2,458	KING of VEGETABLE Recipe   SAMBAR Recipe with Four Side Dish   Veg Village Food Cc	1,027,881	1,027,881
2,369	PESHAWARI CHAWAL   Pakistan Special Golden Pulao Recipe Cooking in Indian Villag	997,924	997,924
974	INSIDE MUTTON BIRYANI   Full Goat Mutton Cooking with Stuffed Biryani   Mutton Ins	964,146	964,146
1,718	FULL CHICKEN FRY   Yummy Fried Chicken Recipe Cooking in Village   Healthy Countr	940,075	940,075
2,169	COUNTRY CRAB SOUP   Mud Crab Catching and Cooking in Agricultural land   Vayal Ni	934,148	934,148
1,463	BIRYANI   MUTTON BIRYANI with Eggs   Traditional Biryani Recipe cooking in Village   V	899,252	899,252
1,306	MUTTON BONE MARROW   Chettinad Mutton Bone Marrow Cooking and Eating in Vill	894,312	894,312
1,857	5 FULL GOAT GRILL   Grilled Mutton Recipe Cooking in Village   Whole Lamb Roast wit	883,500	883,500
1,923	BAMBOO BIRYANI   Mutton Biryani Cooking in Bamboo   Steamed Bamboo Biryani Re	878,357	878,357
500	1500 EGGS   Three Types Of Scrambled Egg Recipes Cooking In Village   Quick and Ea	757,257	757,257
2,042	NOODLES   Yummy Hakka Noodles Recipe Cooking and Eating in Village   Chinese Foo	749,922	749,922
1,471	ARABIAN MUTTON BIRYANI with 2 FULL GOAT   Mutton Biryani Recipe with Grilled Go	736,765	736,765
35	10 MILLION TINY FISHES   Ayira Meen   Rare River Fish Cleaning and Cooking In Village	715,021	715,021
376	BIRYANI   QUAIL BIRYANI Made with 200 Quail   Marriage Biryani Cooking In Village   B	681,437	681,437
2,121	Snail Cooking and Eating   Healthy Snail Recipe   Cooking South Indian Snails in Vill	662,015	662,015

## YouTube Data Harvesting and Warehousing using SQL and Streamlit

7. What is the total number of views for each channel, and what are their corresponding channel names?

	Channel_Name	Total_VIEWS
0	GUVI	3,978,815
1	Vellore Institute of Technology	15,917,480
2	Methagu Thiraikkalam	3,720,859
3	Village Cooking Channel	7,251,792,056
4	Error Makes Clever Academy	37,906,590
5	VIT Chennai	2,023,519
6	MS -CREATIVE	7,233,655
7	ARAVIND KARNEESWARAN	13,457,314
8	Sethumadhavan	1,250
9	Franj 4443	70,522,508

8. What are the names of all the channels that have published videos in the year 2022?

	Channel_Name
0	Methagu Thiraikkalam
1	GUVI
2	Village Cooking Channel
3	MS -CREATIVE
4	Vellore Institute of Technology
5	VIT Chennai
6	ARAVIND KARNEESWARAN

## YouTube Data Harvesting and Warehousing using SQL and Streamlit

9. What is the average duration of all videos in each channel, and what are their corresponding channel names?

	Channel_Name	Average_Duration
0	GUVI	845.8344
1	Vellore Institute of Technology	1,676.8626
2	Methagu Thiraikkalam	474.1429
3	Village Cooking Channel	612.3915
4	Error Makes Clever Academy	1,034.6471
5	VIT Chennai	2,087.2672
6	MS -CREATIVE	317.0833
7	ARAVIND KARNEESWARAN	147
8	Sethumadhavan	135.8571
9	Franj 4443	462

10. Which videos have the highest number of comments, and what are their corresponding channel names?

	Video_Name	Channel_Name	Comment_Count
0	INSIDE MUTTON BIRYANI   Full Goat Mutton Cooking with Stuffed Biryani   Mutton Inside Biryani Recipe	Village Cooking Channel	13,941
1	PAROTTA   Soft Layered Paratha Recipe Cooking In Village   Homemade Parotta Recipe	Village Cooking Channel	11,958
2	WATERMELON JUICE   Farm Fresh Fruit Juice Making   Watermelon Craft   Watermelon Smoothie	Village Cooking Channel	11,229
3	BAMBOO BIRYANI   Mutton Biryani Cooking in Bamboo   Steamed Bamboo Biryani Recipe	Village Cooking Channel	11,018
4	POPCORN   Spicy Butter Popcorn Recipe Cooking In Village   Home Made Easy Popcorn Recipe	Village Cooking Channel	9,328
5	CHICKEN OMELETTE   Huge Eggs With Chicken Meat   Protein Rich Omelette Recipe Cooking In Village	Village Cooking Channel	9,258
6	10 MILLION TINY FISHES   Ayira Meen   Rare River Fish Cleaning and Cooking In Village	Village Cooking Channel	9,119
7	POTATO OMELETTE   BIG Spanish Omelette Recipe Cooking in Indian Village   Egg Recipe	Village Cooking Channel	7,788
8	WATERMELON MILKSHAKE   Summer Healthy Drinks   Fresh Watermelon Juice Making Recipe	Village Cooking Channel	7,612
9	FRIED CHICKEN DRUMSTICK   Chicken Fry Recipe with Mashed Potato   Chicken Recipe	Village Cooking Channel	7,567