YouTube Channel Analytics Dashboard

PROJECT-1

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- GitHub Link: https://github.com/subhash2312res664/YouTube-Channel-Dashboard

PROBLEM STATEMENT

YouTube Channel Analytics Dashboard

Description:

Analyze and visualize key metrics for a YouTube channel.

Expected Outcome:

- **Line:** Views over time
- **Bar:** Views per video
- **Pie:** Engagement (Likes/Dislikes/Comments)

Input: VideoID, Title, UploadDate, Views, Likes, Dislikes, Comments

📌 Project Objective

- Analyze and visualize YouTube channel performance using Python.
- Gain insights into views, engagement (likes, dislikes, comments), and uploads.
- Create an interactive dashboard to explore the dataset.

🧰 Tools & Libraries Used

- Python
- Pandas – for data handling
- Matplotlib – for data visualization
- CSV file – as dataset input

📁 Dataset Overview

- File Used: youtube_channel_data.csv
- Columns: Title, UploadDate, Views, Likes, Dislikes, Comments.
- Null and formatting issues were checked and handled.

Data View df

1-100 5,654 rows × 7 cols

	VideoID	Title	UploadDate	Views	Likes	Dislikes	Comments
0	3UMBcd3TyhQ	What is SEO (Search E…	2015-08-22 14:25:10+0…	419504	3713	NaN	295
1	8RvAdYyvtcM	SEO Tutorial - What i…	2015-09-06 13:50:41+0…	147843	1061	NaN	76
2	O6RZPzYxMls	TYPES OF SEO: White H…	2015-09-19 08:25:17+0…	127662	1082	NaN	48
3	nmX-C9emvEs	On-Page SEO: Big Guid…	2015-09-19 10:38:26+0…	248356	2389	NaN	256
4	2IXS-B_Zafk	Google Keyword Planne…	2015-09-25 19:01:11+0…	135444	1429	NaN	310
5	LtK-IJU5_R8	Tag Optimization | Me…	2015-10-04 13:35:42+0…	75909	645	NaN	70
6	l2UbaPlI_5U	How to create a sitem…	2015-10-09 15:33:13+0…	66666	387	NaN	53
7	40hlRNOpaks	How to create a Robot…	2015-10-17 09:45:15+0…	58469	392	NaN	46
8	EZtFZgpfJOw	How to submit sitemap…	2015-10-26 08:28:12+0…	44194	210	NaN	39
9	jC7T0QByn7A	Working of Google Web…	2015-11-05 14:51:55+0…	47120	280	NaN	66
10	WP7PhA7DHRA	Google Analytics | Su…	2015-11-21 14:44:11+0…	33516	166	NaN	24
11	5QhkfcfZNjA	Google Analytics Intr…	2015-11-30 16:51:17+0…	38661	301	NaN	38
12	yXSzg2v9UhY	How to Add Location o…	2015-12-14 07:16:02+0…	32778	234	NaN	33
13	KsvmOSvDcqQ	Off-Page SEO कैसे करे…	2015-12-20 07:38:11+0…	147225	1910	NaN	148
14	64gSo8Ptlew	Google Page Rank | Pa…	2015-12-26 14:00:23+0…	35431	222	NaN	22
15	Rmajomop8J8	What is web directory…	2016-01-11 15:20:42+0…	107816	1145	NaN	152

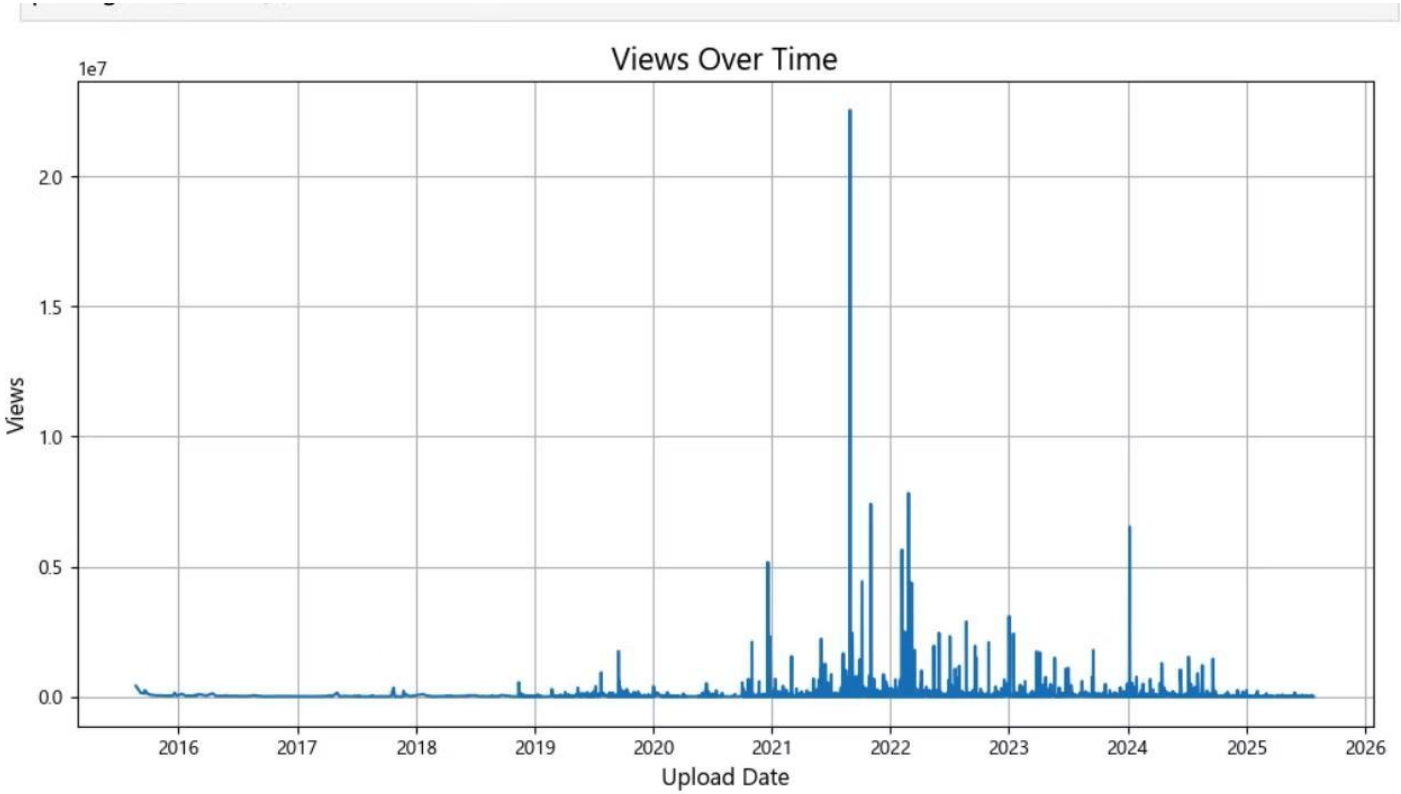
🧹 Data Cleaning Steps

- Converted UploadDate to datetime format.
- Handled N/A values using fillna(0).
- Ensured numeric types for Views, Likes, Dislikes, and Comments.

```
14  # Data Cleaning & Preparation
15
16  df1 = df.copy()     # We make a duplicate for original data, and we perform action on copied data.
17
18  # Convert 'UploadDate' to datetime
19  df1['UploadDate'] = pd.to_datetime(df1['UploadDate'])
20
21  # Handle 'N/A' values in Dislikes and Comments columns
22  df1['Dislikes'] = pd.to_numeric(df1['Dislikes'], errors='coerce').fillna(0)
23  df1['Comments'] = pd.to_numeric(df1['Comments'], errors='coerce').fillna(0)
24
25  # Check and handle 'N/A' values in 'Views' and 'Likes' if any, though the inspection showed they are numeric
26  df1['Views'] = pd.to_numeric(df1['Views'], errors='coerce').fillna(0)
27  df1['Likes'] = pd.to_numeric(df1['Likes'], errors='coerce').fillna(0)
28
```

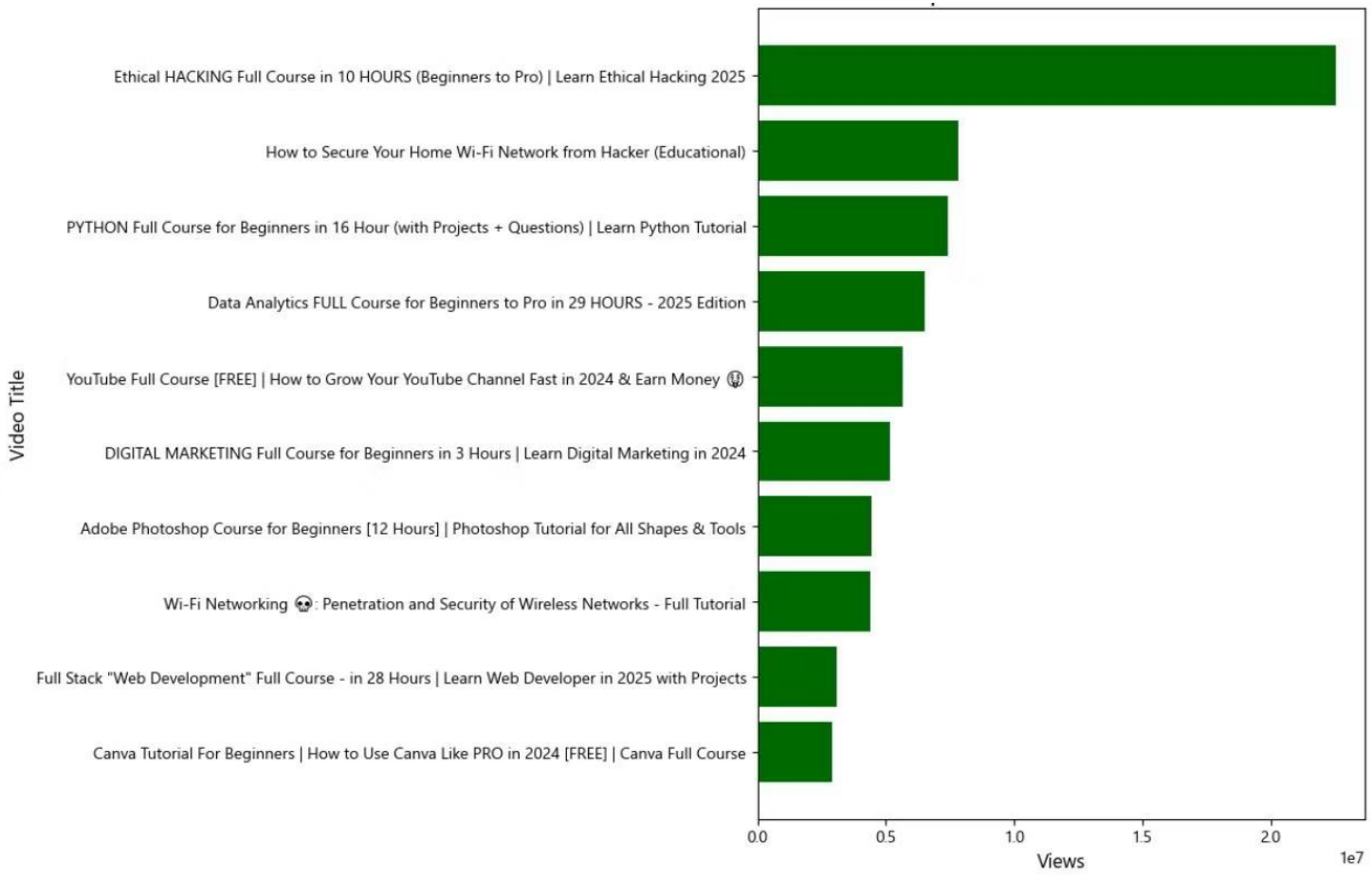
📈 Line Plot – Views Over Time

- Data sorted by UploadDate.
- Line graph shows trends in views over time.
- Helps identify high-performing periods.



📊 Bar Plot – Top 10 Most Viewed Videos

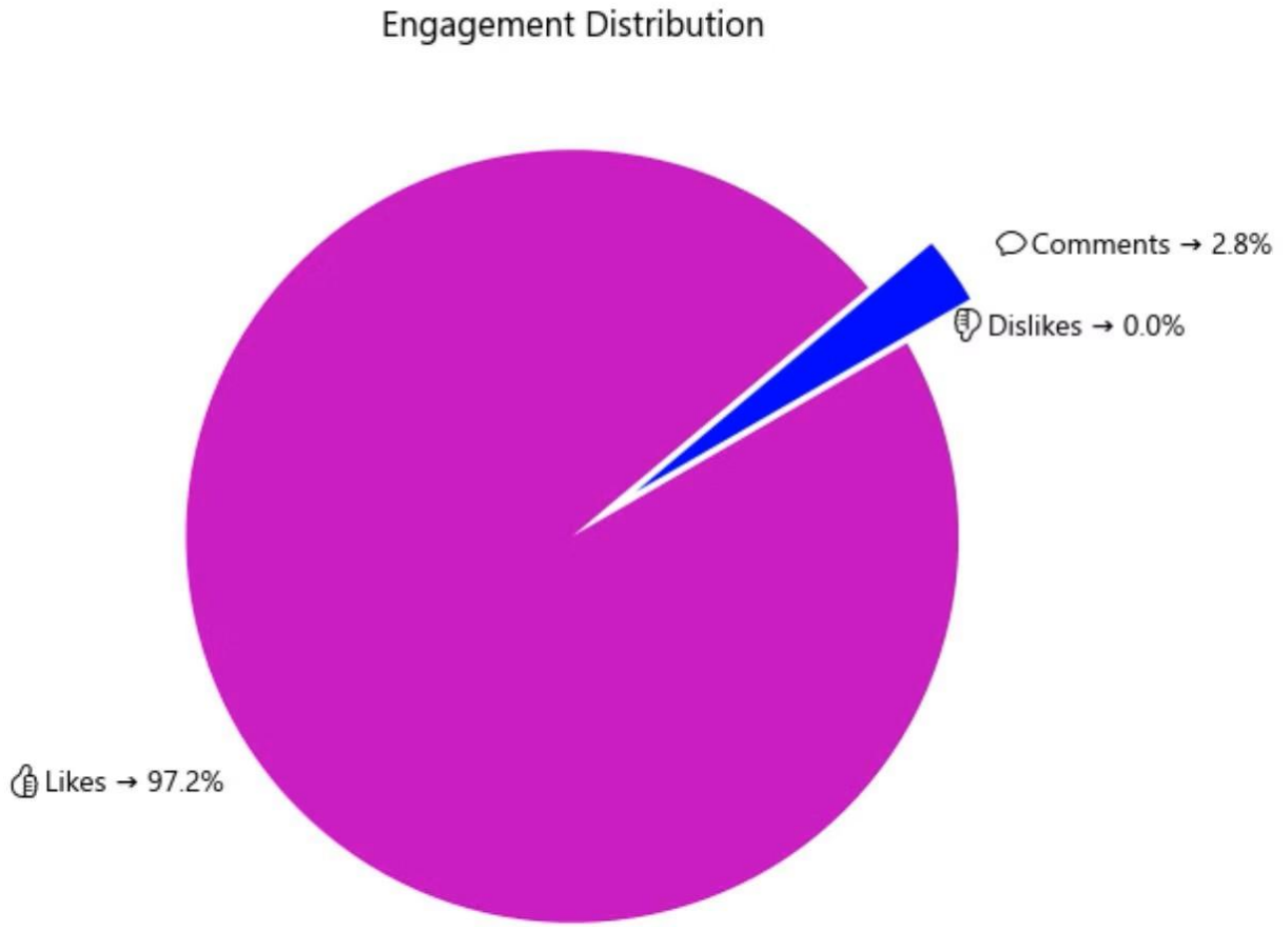
- Sorted by Views in descending order.
- Horizontal bar chart shows top 10 videos.



Pie Chart – Engagement Distribution

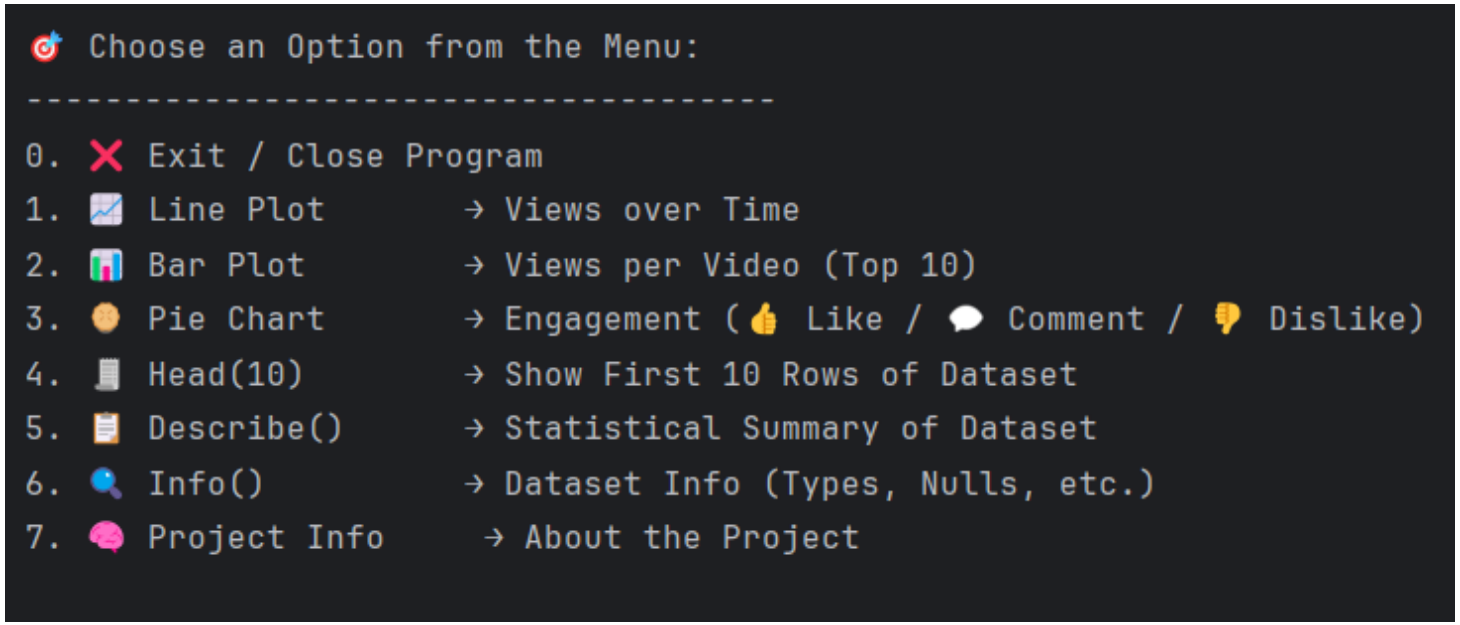
- Summed Likes, Dislikes, Comments.
- Displayed proportion of each using pie chart.
- Labels show percentage for clarity.

```
plt.show()
```



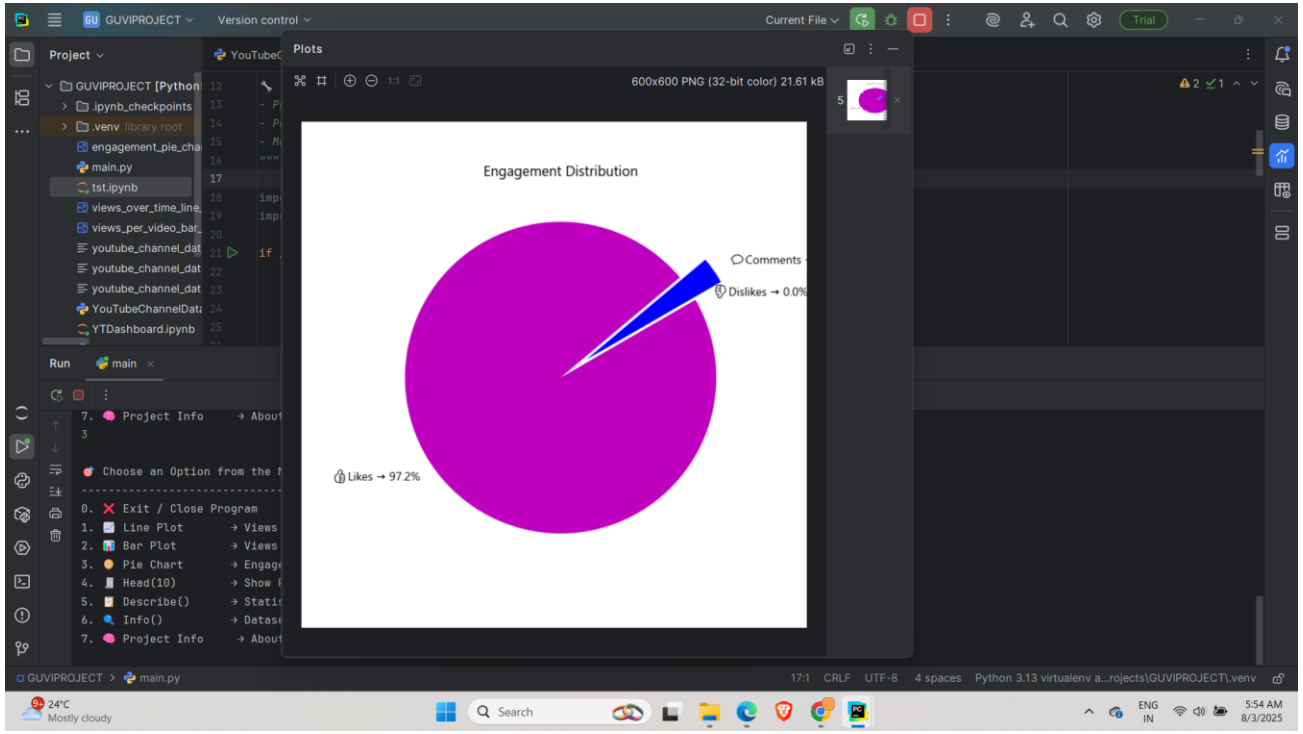
Console Menu Features

- Close/Exit
- Line Graph
- Bar Graph
- Pi Graph
- Describe (Statistics)
- Info (Data types, Nulls)
- Project Info
- User-friendly emoji menu



✅ Final Output & Report

- Outputs are accurate and visually clear.
- Labels, titles, and formatting enhance readability.
- Code is modular and reusable.



About Me

- Subhash Kumar Rana
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- Strong interest in Data Science and Python
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🙏 Thank You

Thank you for reviewing this project.

Indiansubhashkumar
4th Aug, 2025