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DEPARTMENT OF INFORMATION SCIENCE AND ENGINEERING

Innovative Experiment Report
On

“DATA SET PREPARATION IN EXCEL SHEET. API FOR FETCHING DATA AND LOADING DATA INTO EXCEL”

By

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CHAPTER 1
INTRODUCTION

An API (Application Programming Interface) is a set of rules and protocols that allow different software systems to communicate with one another. It serves as a bridge, enabling data exchange and functionality between applications. APIs are commonly used to connect different systems, such as web servers and browsers, allowing developers to build applications that can retrieve, send, or manipulate data on other platforms. For example, a mobile app might use an API to interact with a server to fetch user data or post updates. APIs typically define endpoints (specific URLs), which can be accessed through various methods like GET (to retrieve data) or POST (to send data). They usually exchange information in formats like JSON or XML. Common examples include the Google Maps API, which allows applications to integrate map services, and the Twitter API, which enables third-party apps to post tweets or access Twitter data. APIs are crucial in modern software development, allowing different services to work together seamlessly, enhancing both functionality and user experience.

APIs for the Bhagavad Gita allow developers to access structured data of the ancient text, including its chapters, verses, translations, and commentary. These APIs provide easy integration for applications that wish to display or analyze the teachings of the Bhagavad Gita. Typically, they offer endpoints to retrieve all chapters, fetch specific verses, or access translations and commentaries. For example, a developer might use an API to fetch a particular verse using a GET request, which would return data in a format like JSON. One such API is the Bhagavad Gita API from bhagavadgita.io, which provides comprehensive access to the text, enabling developers to build features like verse search or translation comparisons within their applications. APIs like these are valuable tools for making the Bhagavad Gita’s teachings accessible in digital platforms, allowing for broader reach and deeper integration into modern applications.

By leveraging these APIs, developers can build educational tools, spiritual apps, or websites that make the teachings of the Bhagavad Gita more accessible and interactive for users. This digitized approach helps bring ancient wisdom to contemporary platforms, enabling users to engage with the Gita’s teachings in new and dynamic ways.

CHAPTER 2

SOFTWARE REQUIREMENTS WITH VERSION, INSTALLATION PROCEDURES

This chapter elaborates on the software requirements, the system demands the installation of specific tools, frameworks, and libraries necessary for the development and execution of the project. The key components include:

2.1 Excel Sheet:

The Excel sheet facilitates data loading by importing external datasets, ensuring that all necessary data is preloaded and ready for analysis. For data fetching, it allows users to query specific data points or ranges, supporting efficient retrieval for further processing or reporting. Additionally, the Excel sheet handles data validation, formatting, and calculations, making it a versatile tool for managing and manipulating large datasets. It also supports integration with external systems for data export and synchronization.

2.2 Visual Studio Code:

Visual Studio Code (VS Code) is a popular, open-source code editor developed by Microsoft, known for its flexibility and powerful features. It provides intelligent code suggestions, built-in debugging tools, and support for a wide range of programming languages. Users can enhance their experience with a vast marketplace of extensions for additional functionality and themes. The integrated terminal allows for running command-line tasks directly within the editor, while the built-in Git support facilitates version control and collaboration. As of September 2024, the latest stable version of VS Code is 1.83, with updates available on the [officialwebsite](https://code.visualstudio.com/)or through the [release notes](https://code.visualstudio.com/updates).

To install Visual Studio Code (VS Code):

- Download: Go to the VS Code website and download the installer for your operating system (Windows, macOS, or Linux).
- Install on Windows: Run the downloaded `.exe` file and follow the installation wizard steps to complete the setup.
- Install on macOS: Open the `.dmg` file and drag the VS Code icon to the Applications

folder.

- Install on Linux: Use the terminal to install the `.deb` or `.rpm` package for your distribution, or run `sudo snap install code --classic` for a snap package.
- Launch: Open VS Code from your applications menu or start menu.
- Set Up: Customize settings and install extensions as needed after the initial launch.

CHAPTER 3
SOURCE CODE LINK (GITHUB):

The source link [Source Link](https://www.example.com) provides direct access to comprehensive information and resources relevant to the Bhagavad Gita. This link is crucial for obtaining accurate textual details, commentaries, and scholarly interpretations, which are essential for in-depth study and analysis. Utilizing this source ensures that you have reliable and authoritative references for your project or research.

The Bhagavad Gita is a revered 700-verse Hindu scripture that forms part of the Indian epic Mahabharata. It is presented as a profound dialogue between Prince Arjuna and the god Krishna, who serves as his charioteer. The conversation takes place on the battlefield of Kurukshetra, where Arjuna faces a moral and existential crisis about fighting in a war that pits him against his own kin. Krishna imparts spiritual wisdom and guidance to Arjuna, addressing the nature of duty, righteousness, and the paths to spiritual liberation.

Written in Sanskrit and traditionally attributed to the sage Vyasa, the Gita is divided into 18 chapters, each dealing with different aspects of life and philosophy. It explores various paths to spiritual realization, including devotion, knowledge, and disciplined action. The text is considered a cornerstone of Hindu philosophy and has inspired countless commentaries and interpretations over the centuries. For academic or project purposes, it is important to refer to the specific edition or translation of the Bhagavad Gita used. Different editions may offer varying perspectives and commentaries, which can significantly influence the interpretation of its teachings.

CHAPTER 4

LIST OF APIS WITH ITS PURPOSE

The tables below provides a clear and concise overview of the essential aspects of the created APIs, making it easy for users to understand and reuse:

Section	Details
API Overview	Name: Bhagavad Gita API Version: 1.0 Base URL: https://api.bhagavadgita.io/v1
Authentication	Method: API Key How to Obtain: Register on the API portal to obtain your API Key
Endpoints	GET /users/{id} Description: Retrieve a list of chapters Parameters: None Request Example: GET /chapters Response Example: [{ "chapterNumber": 1, "chapterName": "Arjuna Vishada Yoga", "totalVerses": 47 }]
Error Handling	404 Description: The requested resource (chapter/verse) does not exist 401 Unauthorized: Description: Invalid or missing API key
Rate Limiting	Limit: 1000 requests per hour Handling: Returns 429 status code if exceeded

Usage Examples	Python Example:
	import requests
	response = requests.get('https://api.example.com/v1/users/123', headers=[{ "chapterNumber": 1, "chapterName": "Arjuna Vishada Yoga", "totalVerses": 47 }]

Additional Resources	API Documentation: Full Documentation Support: Contact Support

This format provides a clear and concise overview of the essential aspects of the API, making it easy for users to understand and implement.

Section	Details
API Name	Bhagavad Gita API
Version	1.0
Base URL	https://api.bhagavadgita.io/v1

Authentication	API Key
Endpoint	GET /users/{id}
Description	Retrieve user details by ID
Parameters	None
Request Example	GET /verses/1
Response Example	{"sanskrit": "धृतराष्ट्र उवाच ...", "english": "Dhritarashtra Uvācha ...", "explanation": "Dhritarashtra, who is blind ...", "youtubeLink": "https://youtu.be/xFVUUXvYLJY?si=7BNm9w80ERiTqb_Z"}
Error Codes	404 Not Found: User ID does not exist 401 Unauthorized: Invalid or missing API key

CHATER 5

Description about each MODULE

5.1 Module 1: Data Set Preparation

5.1.1Objective:

The goal of this module is to extract the relevant data from an external source (such as Sanskrit documents or other repositories) and organize it into an Excel/CSV sheet. This sheet will serve as a standardized format for storing important chapter and verse information, such as Sanskrit text, English translation, explanations, relevant YouTube and image links.

5.2 Steps for Data Set Preparation:

1.Data Extraction from Source:

- Visit the resource (e.g., https://sanskritdocuments.org/upanishhat/ .) and manually extract chapter-wise data.
- For each chapter, gather the following attributes:
- Chapter Name: The title of the chapter.
- Chapter Number: Unique identifier for the chapter (numerical).
- Total Verses: Total number of verses in the chapter.
- Verse Number: Unique identifier for each verse.
- Sanskrit Text: The original Sanskrit text of the verse.
- English Translation: The English translation of the verse.
- Explanation: A brief or detailed explanation of the verse, providing context and meaning.
- YouTube Link: (Optional) A relevant video link that may further explain or recite the verse.
- Image Link: (Optional) A visual representation that can be associated with the verse (such as symbolic or artistic illustrations).

2. Organize into Excel/CSV:

Once the data is extracted, format it in an Excel or CSV file with the following columns:

Chapter Name

- Chapter Number
- Total Verses
- Verse Number
- Sanskrit Text
- English Translation
- Explanation
- YouTube Link (if applicable)
- Image Link (if applicable)

1.Sample Excel Data:

Chapter Name	Chapter Number	Total Verses	Verse Number	Sanskrit	English Translation	Explanation	YouTube Link	Image Link
Chapter 1-18	1	20	1	(Sanskrit Text)	(Translation)	(Explanation)	(YouTube URL)	(Image URL)

Outcome:

A structured dataset in Excel format that contains all the necessary information about the verses in the chapters, with the added benefit of multimedia links for deeper engagement.

5.3 Module 2: API for Fetching Data

5.3.1Objective:

This module focuses on reading the data stored in the Excel/CSV file, processing it, and converting it into a JSON format that can be used for API integration, web applications, or data manipulation purposes.

5.4 Steps for Creating the API:

1. Reading Data from CSV:

Use Python's csv module to read the content of the CSV file. This file contains information on chapters, verses, translations, explanations, and multimedia links.

Map each row of the CSV to a structured JSON format.

2. JSON Data Structuring:

For each row (which corresponds to a verse), organize the data under appropriate chapter and verse keys.

3. Data Mapping Logic:

For each Chapter (identified by Chapter Number), create a new entry with:

- Chapter Name: Chapter Name from the CSV
- Chapter Number: The Chapter Number
- Total Verses: The total number of verses in that chapter
- For each Verse (identified by Verse Number), create a sub-entry within the respective chapter
- Sanskrit : The Sanskrit text of the verse.
- English : The English translation of the verse.
- Explanation : Explanation of the verse.
- Youtube Link: Optional YouTube link associated with the verse.
- Image Link: Optional image link associated with the verse

Here is a description of each module used in the provided CSV to JSON conversion script:

1. csv Module

- Purpose: The csv module is a built-in Python library used to handle reading from and writing to CSV (Comma Separated Values) files. It provides functionalities to easily parse CSV files and access the data in a structured format.
- Usage in Script: In this script, the csv.DictReader class is used to read the CSV file and convert each row into a Python dictionary. Each key in the dictionary corresponds to a column header in the CSV file, and each value is the data under that column for a given row.

Key Methods/Functions:

- csv.DictReader(file): Reads the CSV file as a dictionary where keys are column headers.

2. json Module

- Purpose: The json module is a built-in Python library used for serializing (converting) Python objects to JSON format and deserializing JSON into Python objects. It ensures that data can be written to a file in JSON format or parsed from JSON to be used in Python.
- Usage in Script: In this script, the json.dump() function is used to convert the final output Python dictionary into JSON format and write it to a file.

Key Methods/Functions:

- json.dump(data, file, ensure_ascii=False, indent=4): Serializes data to JSON and writes it to file, with options for formatting and non-ASCII characters.

3. collections.defaultdict

- Purpose: The defaultdict is a container from the collections module that works like a standard Python dictionary, but with one key difference: if a key doesn’t exist in the dictionary, it automatically creates an entry for that key with a default value, instead of throwing a KeyError.
- Usage in Script: In this script, defaultdict is used to ensure that the output dictionary can automatically create nested dictionaries for chapters and verses. This simplifies the handling of the hierarchical structure without the need to check if keys exist.
- Key Methods/Functions:
- defaultdict(lambda: dict()): Automatically creates a dictionary if a key doesn’t exist.
- defaultdict(lambda: {"verses": defaultdict(dict)}): A more complex defaultdict that creates nested dictionaries for chapters and verses.

4. File Handling (with open())

- Purpose: The open() function is a built-in Python function that is used to open files for reading or writing. It allows the script to interact with external files, such as the CSV file (input) and the JSON file (output).
- Usage in Script: The open() function is used twice in the script—once to read the CSV file and once to write the output JSON file. The with statement ensures that the file is properly closed after reading or writing, even if an error occurs.

Key Methods/Functions:

- open(csv_file, mode='r', encoding='utf-8'): Opens the CSV file for reading.
- open('output.json', mode='w', encoding='utf-8'): Opens the JSON file for writing.

5. Error Handling (try-except Block)

- Purpose: Error handling in Python is done using try-except blocks to catch exceptions and prevent the program from crashing. The script can handle specific exceptions such as file not found or key errors and provide informative error messages.
- Usage in Script: The script uses try-except to catch errors that may arise while opening the file or processing the CSV. For example, if the CSV file is missing, a FileNotFoundError is caught, and if a required column is missing, a KeyError is caught.

Key Blocks:

- except FileNotFoundError: Handles the case when the CSV file cannot be found.
- except KeyError: Handles missing headers or data issues in the CSV file.
- except Exception: Catches any other unexpected errors.

5.5 Module 3: Loading Data into Excel and JSON

Objective:

This module ensures that the structured data from the previous steps is correctly loaded into both Excel and JSON formats. This allows the data to be easily shared, modified, or used in other applications.

5.6 Steps for Loading Data:

1. CSV to Excel:

   - If data is first available in CSV format, you can easily open it in Excel or convert it to Excel (.xlsx) format.
   - Tools like pandas in Python can help convert CSV to Excel:

Python code:

```
import pandas as pd

df = pd.read_csv('Shlokas - Sheet1.csv')

df.to_excel('Shlokas - Sheet1.xlsx', index=False)
```

2. Excel to JSON Conversion:

   - Once the data is available in CSV or Excel, the API (from Module 2) reads the data and converts it into a structured JSON file.
   - The generated JSON is stored as output.json for use in any web applications, APIs, or databases.

3. Validation:

   - Before using the JSON file in other applications, validate the output JSON file to ensure all verses, chapters, and multimedia links are correctly structured.

Outcome:

Data is successfully stored in both Excel (for manual use) and JSON (for API integration) formats, allowing flexibility in how the data is utilized.

FinalOutcome:
These modules together allow for the seamless preparation, extraction, and transformation of spiritual text data into structured formats (Excel and JSON), which can then be utilized in our BhagavadGita application, APIs, or for further analysis

CHAPTER 6

IMPLEMENTATION DETAILS WITH TOOLS USED

1. Tools and Technologies Used

Excel Sheet:

- Purpose: Used for data loading, data validation, formatting, calculations, and managing large datasets related to the Bhagavad Gita.
- Key Features: Efficient data retrieval, data export, and synchronization capabilities.

2. Visual Studio Code (VS Code):

- Version: 1.83 (latest as of September 2024)
- Purpose: Code editing, debugging, and project management.
- Key Features: Intelligent code suggestions, built-in debugging tools, integrated terminal, and Git support.

1. Python:
   - Libraries: `csv`, `json`, `collections` (specifically `defaultdict`), and other standard libraries for reading data, processing, and creating JSON outputs.
   - Purpose: Data processing and API integration to structure data from the Bhagavad Gita.
2. Bhagavad Gita API:
   - Purpose: To access structured data including chapters, verses, translations, and commentary, enabling the building of applications that display and analyze the teachings.

3. GitHub:

- Purpose: Version control and source code management, enabling collaboration and easy access to the project's code base.

CHAPTER 7

WORKING PROCEDURE

7. Step 1: Data Preparation

- Task: Load data from an Excel sheet containing chapters, verses, translations, and commentary of the Bhagavad Gita.
- Tool: Excel was used for organizing and validating data before processing.

Step 2: Data Processing with Python

Task: Read the data from the Excel sheet, process it, and convert it into a JSON structure using Python.

Procedure:

1. Use the `csv` module to read the data from the CSV file exported from Excel.
2. Use the `json` module to structure the data into a hierarchical JSON format, including chapters and verses.
3. The `defaultdict` from the `collections` module is used to handle nested data structures for chapters and verses.
4. Handle errors such as missing files or incorrect headers to ensure smooth data processing.

Step 3: API Integration

Task: Integrate Bhagavad Gita API to fetch data dynamically and allow real-time access to verses, translations, and chapter information.

Procedure:

1. Implement GET requests to fetch verses and translations.
2. Use the JSON format to structure the responses for display or further analysis.
3. API endpoints are accessed to retrieve specific data like chapter details or specific verses based on user queries.

Step 4: Data Output

Task: Export the processed data into a JSON file that can be used for front-end display or further analysis.

Procedure:

1. Use the `json.dump()` function to save the structured data into a file.
2. Ensure the JSON output is formatted and easily readable for developers.

Step 5: Source Code Management

- Task: Use GitHub for managing the source code, tracking changes, and collaborating.
- Procedure: the code used to run is,

```
 import csv
import json
from collections import defaultdict

# File path to your CSV
csv_file = r'C:\api\Shlokas - Sheet1.csv'

# Initialize the structure for the final JSON output
output = {"Chapters": defaultdict(lambda: {"verses":
defaultdict(dict)})}

try:
    # Open the CSV file
    with open(csv_file, mode='r', encoding='utf-8') as
file:
        reader = csv.DictReader(file)

        # Print CSV headers for debugging
        print("CSV Headers:", reader.fieldnames)

        # Process each row
        for row in reader:
            chapter_key = f"Chapter{int(row['chapter
Number']):02d}"  # Match with lowercase 'chapter Number'
            verse_key = f"verse{row['Verse Number']}"

            # Map CSV data to the JSON structure
```

```
output["Chapters"][chapter_key]["chapterName"] =
row["Chapter Name"]

output["Chapters"][chapter_key]["chapterNumber"] =
int(row["chapter Number"])
            output["Chapters"][chapter_key]["imageUrl"] =
row["Image url"]

output["Chapters"][chapter_key]["totalVerses"] =
int(row["Total Verses"])

output["Chapters"][chapter_key]["verses"][verse_key] = {
                "english": row["English Translation"],
                "explanation": row["Explanation"],
                "sanskrit": row["Sanskrit"],
                "youtubeLink": row["youtubeLink"]
            }

    # Convert the defaultdict to a regular dict for JSON
serialization
    output["Chapters"] = dict(output["Chapters"])

    # Write the output to a JSON file
    with open('output.json', 'w', encoding='utf-8') as
json_file:
        json.dump(output, json_file, ensure_ascii=False,
indent=4)

    print("JSON data has been saved to output.json")

# Handle errors
except FileNotFoundError as fnf_error:
    print(f"Error: {fnf_error}")

except KeyError as key_error:
    print(f"Error: {key_error}. Check if the CSV file has the correct headers: {reader.fieldnames}")

except Exception as e:
    print(f"An unexpected error occurred: {e}")
```

CHAPTER 8

RESULTS WITH ANALYSIS

Outcomes

- The application successfully retrieves and displays structured data from the Bhagavad Gita, allowing users to search verses, view translations, and understand commentary.
- The integration of the Bhagavad Gita API ensures that data is accurate, up-to-date, and easily accessible.
- OUTPUT.JSON

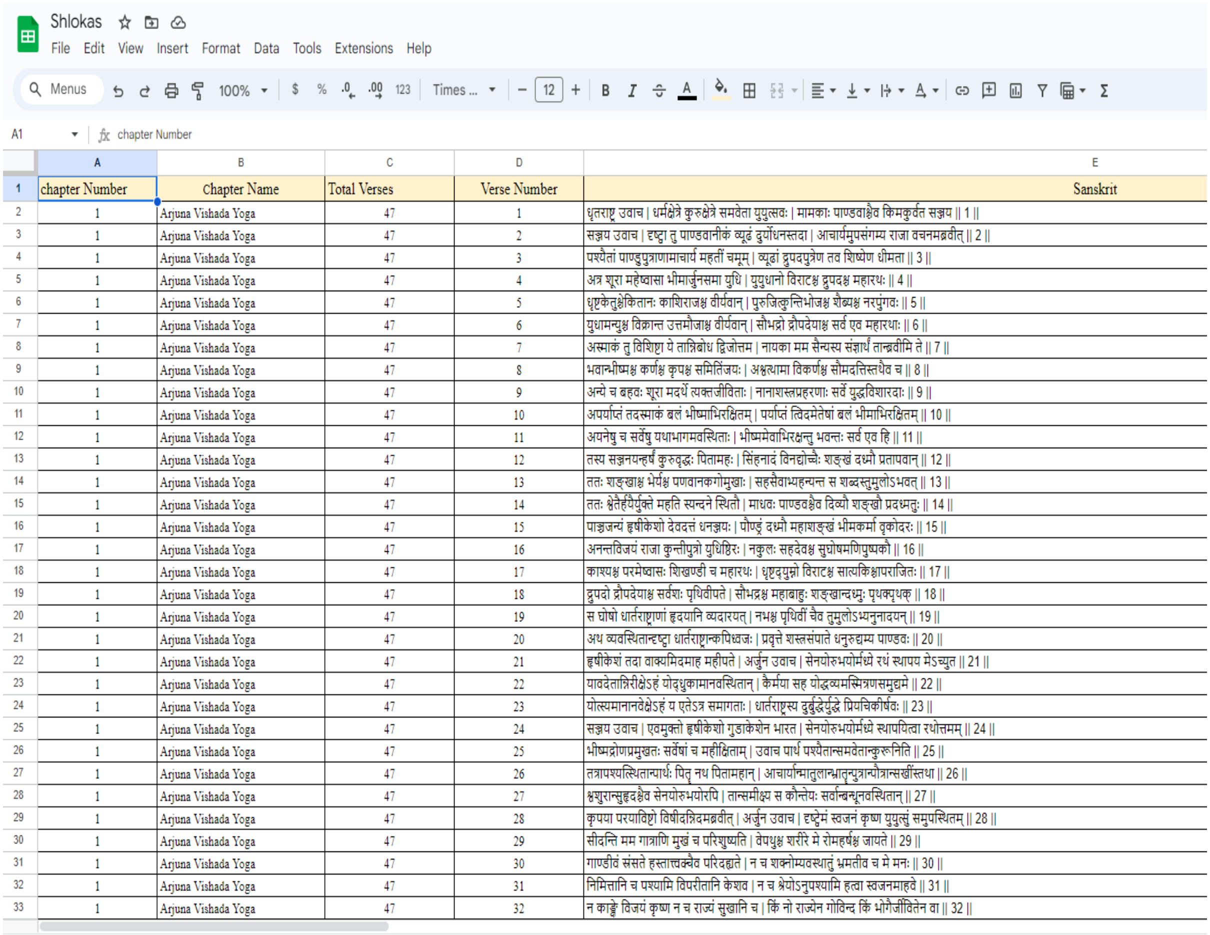
```
{
    "Chapters": {
        "Chapter01": {
            "verses": {
                "verse1": {
                    "english": "Dhritarashtra Uvācha:
Dharmakshetre Kurukshetre Samaveta Yuyutsavah | Māmakāh
Pāndavāshchaiva Kimakurvata Sanjaya || 1 ||",
                    "explanation": "Dhritarashtra, who is
blind, asks Sanjaya to narrate the events of the battlefield
of Kurukshetra, where the great war is about to take place
between his sons (the Kauravas) and the Pandavas.",
        "sanskrit": "धृतराष्ट्र उवाच | धर्मक्षेत्रे कुरुक्षेत्रे समवेता युयुत्सवः | मामकाः पाण्डवाश्चैव
किमकुर्वत सञ्जय || 1 ||",
                    "youtubeLink":
"https://youtu.be/xFVUUXvYLJY?si=7BNm9w80ERiTqb_Z"
                },
                "verse2": {
                    "english": "Sanjaya Uvācha: Drishtvā Tu
Pāndavāneekam Vyoodham Duryodhanastadā | Āchāryamupasangamya
Rājā Vachanamabraveet || 2 ||",
                    "explanation": "Duryodhana, the leader of
the Kauravas, sees the Pandava army ready for battle and goes
to his mentor, Dronacharya, to discuss the situation.",
            "sanskrit": "सञ्जय उवाच | दृष्ट्वा तु पाण्डवानीकं व्यूढं दुर्योधनस्तदा | आचार्यमुपसंगम्य
राजा वचनमब्रवीत् || 2 ||",
                    "youtubeLink": "https://youtu.be/gOpdQWkF-
gs?si=6WIRg-HV5GqV9_A8"
                },
                "verse3": {
                    "english": "Pashyaitām Pānduputrānām
Āchārya Mahateem Chamoom | Vyoodhām Drupadaputrena Tava
Shishyena Dheemataa || 3 ||",
                    "explanation": "Duryodhana points out to
Dronacharya that the Pandava army has been arranged
strategically by Dronacharya’s own disciple, Dhrishtadyumna,
the son of Drupada.",
            "sanskrit": "पश्यैतां पाण्डुपुत्राणामाचार्य महतीं चमूम् | व्यूढां द्रुपदपुत्रेण तव शिष्येण
धीमता || 3 ||",
                    "youtubeLink": "https://youtu.be/oi-
_Oqoe9j4?si=NnV-BDAIVZzfZ73j"
                },
```

Working Procedure:

- Data was prepared and validated using Excel.
- Python was employed to read, process, and structure data into a JSON format suitable for API integration.
- Integrated APIs to fetch and display real-time data from the Bhagavad Gita.
- Generated JSON output files for use in front-end applications.
- Code was managed on GitHub, with detailed documentation for easy access and modification.

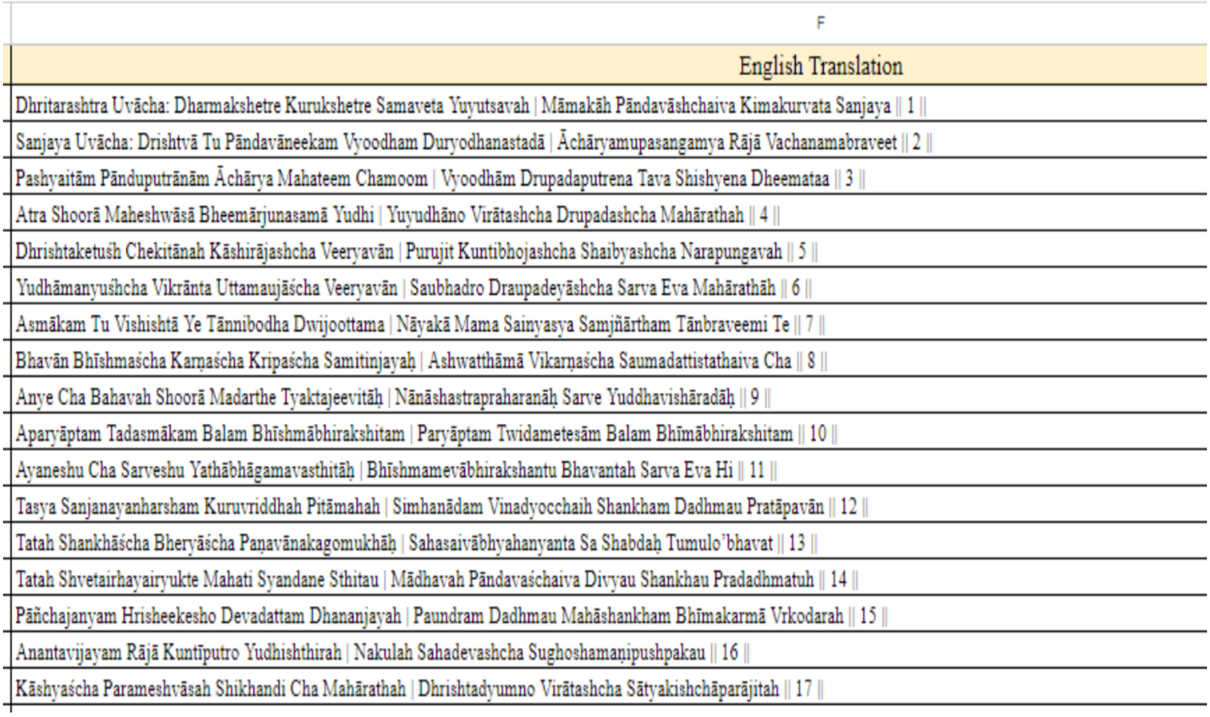
CHAPTER 9

SCREENSHOTS


Shlokas
File Edit View Insert Format Data Tools Extensions Help
Menus 100% $ % .0 .00 123 Times ... 12 B I A
A1
fx chapter Number
A B C D E

1	chapter Number	Chapter Name	Total Verses	Verse Number	Sanskrit
2	1	Arjuna Vishada Yoga	47	1	धृतराष्ट्र उवाच | धर्मक्षेत्रे कुरुक्षेत्रे समवेता युयुत्सवः | मामकाः पाण्डवाश्चैव किमकुर्वत सञ्जय || 1 ||
3	1	Arjuna Vishada Yoga	47	2	सञ्जय उवाच | दृष्ट्वा तु पाण्डवानीकं व्यूढं दुर्योधनस्तदा | आचार्यमुपसंगम्य राजा वचनमब्रवीत् || 2 ||
4	1	Arjuna Vishada Yoga	47	3	पश्यैतां पाण्डुपुत्राणामाचार्य महतीं चमूम् | व्यूढां द्रुपदपुत्रेण तव शिष्येण धीमता || 3 ||
5	1	Arjuna Vishada Yoga	47	4	अत्र शूरा महेष्वासा भीमार्जुनसमा युधि | युयुधानो विराटश्च द्रुपदश्च महारथः || 4 ||
6	1	Arjuna Vishada Yoga	47	5	धृष्टकेतुश्चेकितानः काशिराजश्च वीर्यवान् | पुरुजित्कुन्तिभोजश्च शैब्यश्च नरपुंगवः || 5 ||
7	1	Arjuna Vishada Yoga	47	6	युधामन्युश्च विक्रान्त उत्तमौजाश्च वीर्यवान् | सौभद्रो द्रौपदेयाश्च सर्व एव महारथाः || 6 ||
8	1	Arjuna Vishada Yoga	47	7	अस्माकं तु विशिष्टा ये तान्निबोध द्विजोत्तम | नायका मम सैन्यस्य संज्ञार्थं तान्ब्रवीमि ते || 7 ||
9	1	Arjuna Vishada Yoga	47	8	भवान्भीष्मश्च कर्णश्च कृपश्च समितिंजयः | अश्वत्थामा विकर्णश्च सौमदत्तिस्तथैव च || 8 ||
10	1	Arjuna Vishada Yoga	47	9	अन्ये च बहवः शूरा मदर्थे त्यक्तजीविताः | नानाशस्त्रप्रहरणाः सर्वे युद्धविशारदाः || 9 ||
11	1	Arjuna Vishada Yoga	47	10	अपर्याप्तं तदस्माकं बलं भीष्माभिरक्षितम् | पर्याप्तं त्विदमेतेषां बलं भीमाभिरक्षितम् || 10 ||
12	1	Arjuna Vishada Yoga	47	11	अयनेषु च सर्वेषु यथाभागमवस्थिताः | भीष्ममेवाभिरक्षन्तु भवन्तः सर्व एव हि || 11 ||
13	1	Arjuna Vishada Yoga	47	12	तस्य सञ्जनयन्हर्षं कुरुवृद्धः पितामहः | सिंहनादं विनद्योच्चैः शङ्खं दध्मौ प्रतापवान् || 12 ||
14	1	Arjuna Vishada Yoga	47	13	ततः शङ्खाश्च भेर्यश्च पणवानकगोमुखाः | सहसैवाभ्यहन्यन्त स शब्दस्तुमुलोऽभवत् || 13 ||
15	1	Arjuna Vishada Yoga	47	14	ततः श्वेतैर्हयैर्युक्ते महति स्यन्दने स्थितौ | माधवः पाण्डवश्चैव दिव्यौ शङ्खौ प्रदध्मतुः || 14 ||
16	1	Arjuna Vishada Yoga	47	15	पाञ्चजन्यं हृषीकेशो देवदत्तं धनञ्जयः | पौण्ड्रं दध्मौ महाशङ्खं भीमकर्मा वृकोदरः || 15 ||
17	1	Arjuna Vishada Yoga	47	16	अनन्तविजयं राजा कुन्तीपुत्रो युधिष्ठिरः | नकुलः सहदेवश्च सुघोषमणिपुष्पकौ || 16 ||
18	1	Arjuna Vishada Yoga	47	17	काश्यश्च परमेष्वासः शिखण्डी च महारथः | धृष्टद्युम्नो विराटश्च सात्यकिश्चापराजितः || 17 ||
19	1	Arjuna Vishada Yoga	47	18	द्रुपदो द्रौपदेयाश्च सर्वशः पृथिवीपते | सौभद्रश्च महाबाहुः शङ्खान्दध्मुः पृथक्पृथक् || 18 ||
20	1	Arjuna Vishada Yoga	47	19	स घोषो धार्तराष्ट्राणां हृदयानि व्यदारयत् | नभश्च पृथिवीं चैव तुमुलोऽभ्यनुनादयन् || 19 ||
21	1	Arjuna Vishada Yoga	47	20	अथ व्यवस्थितान्दृष्ट्वा धार्तराष्ट्रान्कपिध्वजः | प्रवृत्ते शस्त्रसंपाते धनुरुद्यम्य पाण्डवः || 20 ||
22	1	Arjuna Vishada Yoga	47	21	हृषीकेशं तदा वाक्यमिदमाह महीपते | अर्जुन उवाच | सेनयोरुभयोर्मध्ये रथं स्थापय मेऽच्युत || 21 ||
23	1	Arjuna Vishada Yoga	47	22	यावदेतान्निरीक्षेऽहं योद्धुकामानवस्थितान् | कैर्मया सह योद्धव्यमस्मिन्रणसमुद्यमे || 22 ||
24	1	Arjuna Vishada Yoga	47	23	योत्स्यमानानवेक्षेऽहं य एतेऽत्र समागताः | धार्तराष्ट्रस्य दुर्बुद्धेर्युद्धे प्रियचिकीर्षवः || 23 ||
25	1	Arjuna Vishada Yoga	47	24	सञ्जय उवाच | एवमुक्तो हृषीकेशो गुडाकेशेन भारत | सेनयोरुभयोर्मध्ये स्थापयित्वा रथोत्तमम् || 24 ||
26	1	Arjuna Vishada Yoga	47	25	भीष्मद्रोणप्रमुखतः सर्वेषां च महीक्षिताम् | उवाच पार्थ पश्यैतान्समवेतान्कुरूनिति || 25 ||
27	1	Arjuna Vishada Yoga	47	26	तत्रापश्यत्स्थितान्पार्थः पितॄ नथ पितामहान् | आचार्यान्मातुलान्भ्रातॄन्पुत्रान्पौत्रान्सखींस्तथा || 26 ||
28	1	Arjuna Vishada Yoga	47	27	श्वशुरान्सुहृदश्चैव सेनयोरुभयोरपि | तान्समीक्ष्य स कौन्तेयः सर्वान्बन्धूनवस्थितान् || 27 ||
29	1	Arjuna Vishada Yoga	47	28	कृपया परयाविष्टो विषीदन्निदमब्रवीत् | अर्जुन उवाच | दृष्ट्वेमं स्वजनं कृष्ण युयुत्सुं समुपस्थितम् || 28 ||
30	1	Arjuna Vishada Yoga	47	29	सीदन्ति मम गात्राणि मुखं च परिशुष्यति | वेपथुश्च शरीरे मे रोमहर्षश्च जायते || 29 ||
31	1	Arjuna Vishada Yoga	47	30	गाण्डीवं स्रंसते हस्तात्त्वक्चैव परिदह्यते | न च शक्नोम्यवस्थातुं भ्रमतीव च मे मनः || 30 ||
32	1	Arjuna Vishada Yoga	47	31	निमित्तानि च पश्यामि विपरीतानि केशव | न च श्रेयोऽनुपश्यामि हत्वा स्वजनमाहवे || 31 ||
33	1	Arjuna Vishada Yoga	47	32	न काङ्क्षे विजयं कृष्ण न च राज्यं सुखानि च | किं नो राज्येन गोविन्द किं भोगैर्जीवितेन वा || 32 ||

1	chapter Number	Chapter Name	Total Verses	Verse Number	Sanskrit
2	1	Arjuna Vishada Yoga	47	1	धृतराष्ट्र उवाच | धर्मक्षेत्रे कुरुक्षेत्रे समवेता युयुत्सवः | मामकाः पाण्डवाश्चैव किमकुर्वत सञ्जय || 1 ||
3	1	Arjuna Vishada Yoga	47	2	सञ्जय उवाच | दृष्ट्वा तु पाण्डवानीकं व्यूढं दुर्योधनस्तदा | आचार्यमुपसंगम्य राजा वचनमब्रवीत् || 2 ||
4	1	Arjuna Vishada Yoga	47	3	पश्यैतां पाण्डुपुत्राणामाचार्य महतीं चमूम् | व्यूढां द्रुपदपुत्रेण तव शिष्येण धीमता || 3 ||
5	1	Arjuna Vishada Yoga	47	4	अत्र शूरा महेष्वासा भीमार्जुनसमा युधि | युयुधानो विराटश्च द्रुपदश्च महारथः || 4 ||
6	1	Arjuna Vishada Yoga	47	5	धृष्टकेतुश्चेकितानः काशिराजश्च वीर्यवान् | पुरुजित्कुन्तिभोजश्च शैब्यश्च नरपुंगवः || 5 ||
7	1	Arjuna Vishada Yoga	47	6	युधामन्युश्च विक्रान्त उत्तमौजाश्च वीर्यवान् | सौभद्रो द्रौपदेयाश्च सर्व एव महारथाः || 6 ||
8	1	Arjuna Vishada Yoga	47	7	अस्माकं तु विशिष्टा ये तान्निबोध द्विजोत्तम | नायका मम सैन्यस्य संज्ञार्थं तान्ब्रवीमि ते || 7 ||
9	1	Arjuna Vishada Yoga	47	8	भवान्भीष्मश्च कर्णश्च कृपश्च समितिंजयः | अश्वत्थामा विकर्णश्च सौमदत्तिस्तथैव च || 8 ||



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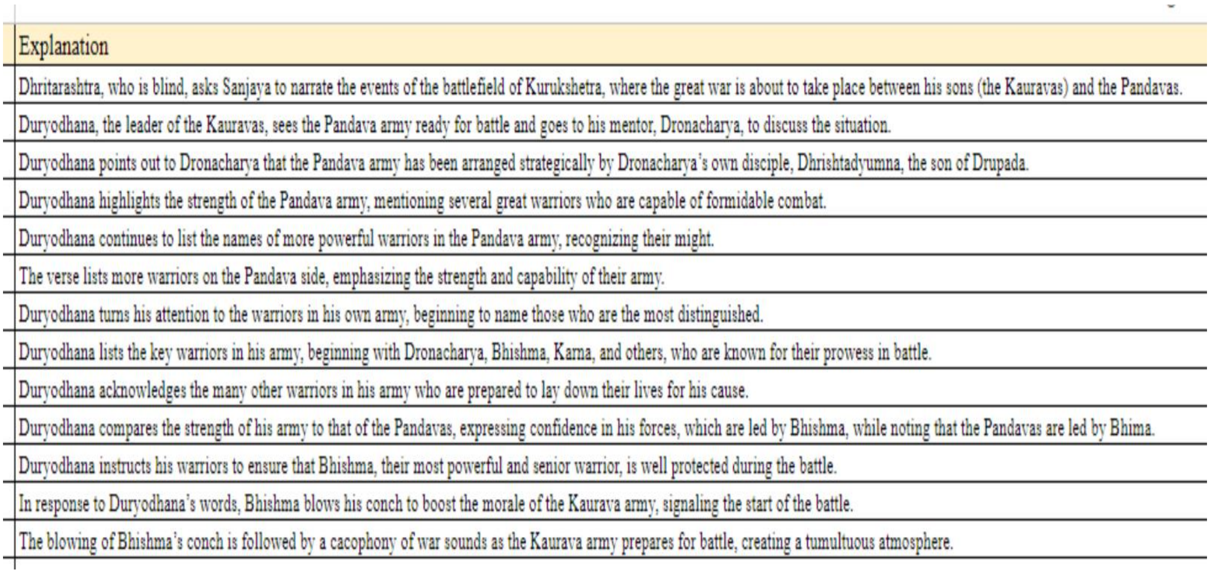
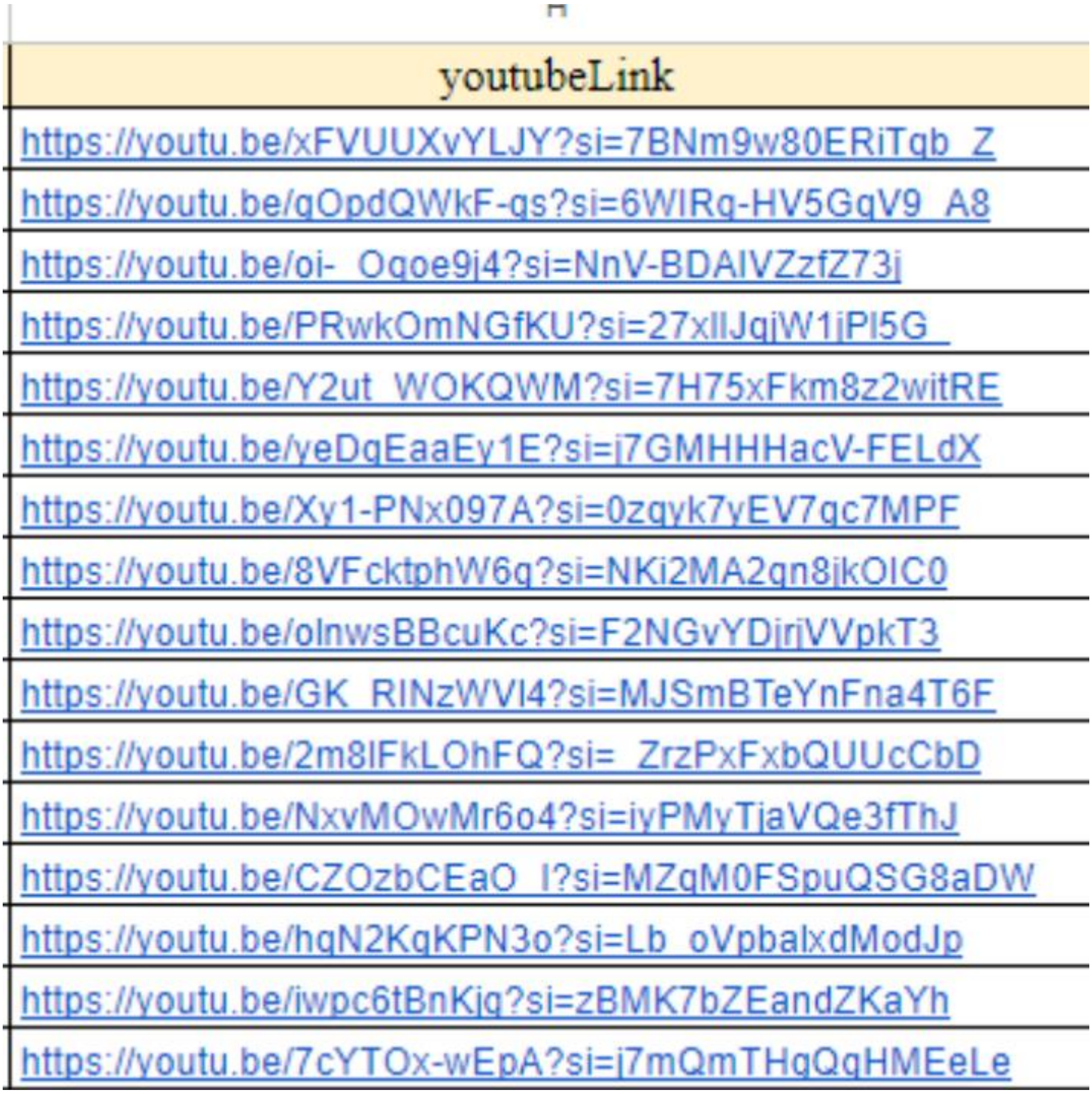
English Translation
Dhritarashtra Uvācha: Dharmakshetre Kurukshetre Samaveta Yuyutsavah | Māmakāh Pāndavāshchaiva Kimakurvata Sanjaya || 1 ||
Sanjaya Uvācha: Drishtvā Tu Pāndavāneekam Vyoodham Duryodhanastadā | Āchāryamupasangamya Rājā Vachanamabraveet || 2 ||
Pashyaitām Pānduputrānām Āchārya Mahateem Chamoom | Vyoodhām Drupadaputrena Tava Shishyena Dheemataa || 3 ||
Atra Shoorā Maheshwāsā Bheemārjunasamā Yudhi | Yuyudhāno Virātashcha Drupadashcha Mahārathah || 4 ||
Dhrishtaketuṡh Chekitānah Kāshirājashcha Veeryavān | Purujit Kuntibhojashcha Shaibyashcha Narapungavah || 5 ||
Yudhāmanyuṡhcha Vikrānta Uttamaujāścha Veeryavān | Saubhadro Draupadeyāshcha Sarva Eva Mahārathāh || 6 ||
Asmākam Tu Vishishtā Ye Tānnibodha Dwijoottama | Nāyakā Mama Sainyasya Samjñārtham Tānbraveemi Te || 7 ||
Bhavān Bhīshmaścha Karṇaścha Kripaścha Samitinjayaḥ | Ashwatthāmā Vikarṇaścha Saumadattistathaiva Cha || 8 ||
Anye Cha Bahavah Shoorā Madarthe Tyaktajeevitāḥ | Nānāshastrapraharanāḥ Sarve Yuddhavishāradāḥ || 9 ||
Aparyāptam Tadasmākam Balam Bhīshmābhirakshitam | Paryāptam Twidametesām Balam Bhīmābhirakshitam || 10 ||
Ayaneshu Cha Sarveshu Yathābhāgamavasthitāḥ | Bhīshmamevābhirakshantu Bhavantah Sarva Eva Hi || 11 ||
Tasya Sanjanayanharsham Kuruvriddhah Pitāmahah | Simhanādam Vinadyocchaih Shankham Dadhmau Pratāpavān || 12 ||
Tatah Shankhāścha Bheryāścha Paṇavānakagomukhāḥ | Sahasaivābhyahanyanta Sa Shabdaḥ Tumulo'bhavat || 13 ||
Tatah Shvetairhayairyukte Mahati Syandane Sthitau | Mādhavah Pāndavaśchaiva Divyau Shankhau Pradadhmatuh || 14 ||
Pāñchajanyam Hrisheekesho Devadattam Dhananjayah | Paundram Dadhmau Mahāshankham Bhīmakarmā Vrkodarah || 15 ||
Anantavijayam Rājā Kuntīputro Yudhishthirah | Nakulah Sahadevashcha Sughoshamaṇipushpakau || 16 ||
Kāshyaścha Parameshvāsah Shikhandi Cha Mahārathah | Dhrishtadyumno Virātashcha Sātyakishchāparājitah || 17 ||



Explanation
Dhritarashtra, who is blind, asks Sanjaya to narrate the events of the battlefield of Kurukshetra, where the great war is about to take place between his sons (the Kauravas) and the Pandavas.
Duryodhana, the leader of the Kauravas, sees the Pandava army ready for battle and goes to his mentor, Dronacharya, to discuss the situation.
Duryodhana points out to Dronacharya that the Pandava army has been arranged strategically by Dronacharya's own disciple, Dhrishtadyumna, the son of Drupada.
Duryodhana highlights the strength of the Pandava army, mentioning several great warriors who are capable of formidable combat.
Duryodhana continues to list the names of more powerful warriors in the Pandava army, recognizing their might.
The verse lists more warriors on the Pandava side, emphasizing the strength and capability of their army.
Duryodhana turns his attention to the warriors in his own army, beginning to name those who are the most distinguished.
Duryodhana lists the key warriors in his army, beginning with Dronacharya, Bhishma, Karna, and others, who are known for their prowess in battle.
Duryodhana acknowledges the many other warriors in his army who are prepared to lay down their lives for his cause.
Duryodhana compares the strength of his army to that of the Pandavas, expressing confidence in his forces, which are led by Bhishma, while noting that the Pandavas are led by Bhima.
Duryodhana instructs his warriors to ensure that Bhishma, their most powerful and senior warrior, is well protected during the battle.
In response to Duryodhana's words, Bhishma blows his conch to boost the morale of the Kaurava army, signaling the start of the battle.
The blowing of Bhishma's conch is followed by a cacophony of war sounds as the Kaurava army prepares for battle, creating a tumultuous atmosphere.



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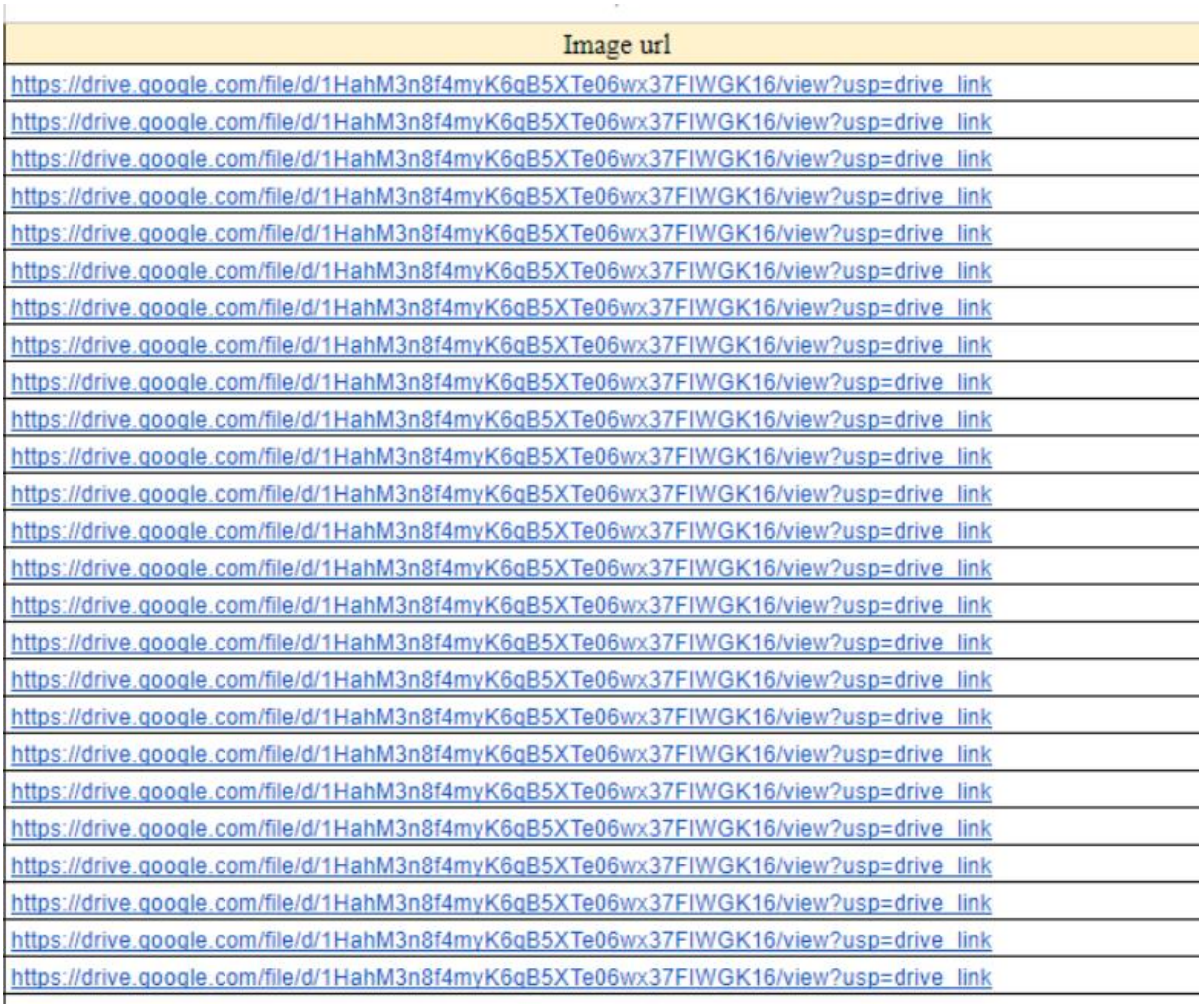

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CHAPTER 10

CONCLUSION

The Bhagavad Gita API provides a comprehensive and structured way to access the teachings of the Bhagavad Gita, making it a valuable resource for developers looking to integrate this ancient text into modern applications. Through endpoints that allow retrieval of chapters, verses, translations, and commentaries, the API facilitates easy access to detailed information about the Gita's content. Its clear authentication process using API keys ensures secure access, while rate limiting helps maintain service stability.

The well-documented endpoints and examples provided make it straightforward for developers to incorporate the API into various applications, such as educational tools, spiritual apps, or interactive websites. Error handling for common issues like missing or unauthorized API keys ensures a smoother integration experience. Overall, the Bhagavad Gita API is an effective tool for bringing the teachings of this timeless scripture to a wider audience, enhancing engagement and accessibility through digital platforms.