**📚 *BookScape Explorer - Book Data Analytics Project***

**Introduction**

BookScape Explorer is an advanced data analytics project that brings together the power of the Google Books API and data visualization to create a comprehensive book analysis platform. This project consists of two main components: a data extraction system and an interactive analytics dashboard.

**What Does This Project Do?**

The project serves two main purposes:

1. **Data Collection:** It harvests detailed book information from Google Books API across multiple categories like Programming, Data Science, English Literature, Maths etc.
2. **Data Analysis:** It provides an interactive dashboard where users can explore and analyze this book data through various visualizations and metrics.

**Project Components**

**1. BookData.py (Data Extraction)**

This script handles the data collection and database management portion of the project.

* API Integration:
  + Connects to Google Books API
  + Fetches comprehensive book data
  + Handles API rate limiting and pagination
  + Processes JSON responses
* Database Management:
  + Creates a normalized MySQL database structure
  + Handles data cleaning and validation
  + Manages relationships between different entities (authors, publishers, etc.)
  + Implements error handling for database operations
* Data Processing:
  + Extracts relevant information from API responses
  + Normalizes data across different tables
  + Handles missing or inconsistent data
  + Creates proper relationships between different data entities

**2. bookstream.py (Analytics Dashboard)**

This is the visualization and analysis component that provides an interactive web interface. Features include:

* Search and Discovery:
  + Full-text search across all books
  + Filter by various parameters
  + Sort and organize results
* Analysis Views:
  + Book Format Analysis
    - Compare eBooks vs Physical Books
    - Analyze format preferences
    - Price comparison between formats
  + Publisher Analysis
    - View top publishers by book count
    - Analyze publisher ratings
    - Track publishing trends
  + Price Analysis
    - Track price distributions
    - Analyze discounts
    - Compare prices across categories
  + Content Analysis
    - Page count distributions
    - Category-wise analysis
    - Language distribution
  + Author Analysis
    - Track prolific authors
    - Cross-publisher relationship

**Project Set Up**

1. **Pre-requisites**
   * Python 3.8 or higher installed
   * MySQL Server installed and running
   * A Google Books API key
   * Git installed (for cloning the repository)
2. **Installation**
   * Clone Repository

git clone https://github.com/Jeyavani2/BookScape.git

1. **API Configuration**
   * Replace the API key in BookData.py api\_key = 'your\_google\_books\_api\_key'

**Project Execution**

1. **Data Collection**
   * Run the data extraction script 'BookData.py'
   * This will:
     + Create all necessary database tables
     + Fetch book data from Google Books API
     + Process and store the data
2. **Launch Dashboard**
   * Start the analytics dashboard with 'streamlit run bookstream.py'
   * This will:
     + Launch the web interface
     + Connect to your database
     + Display all analysis options

**Search Categories**

The project collects data across various categories:

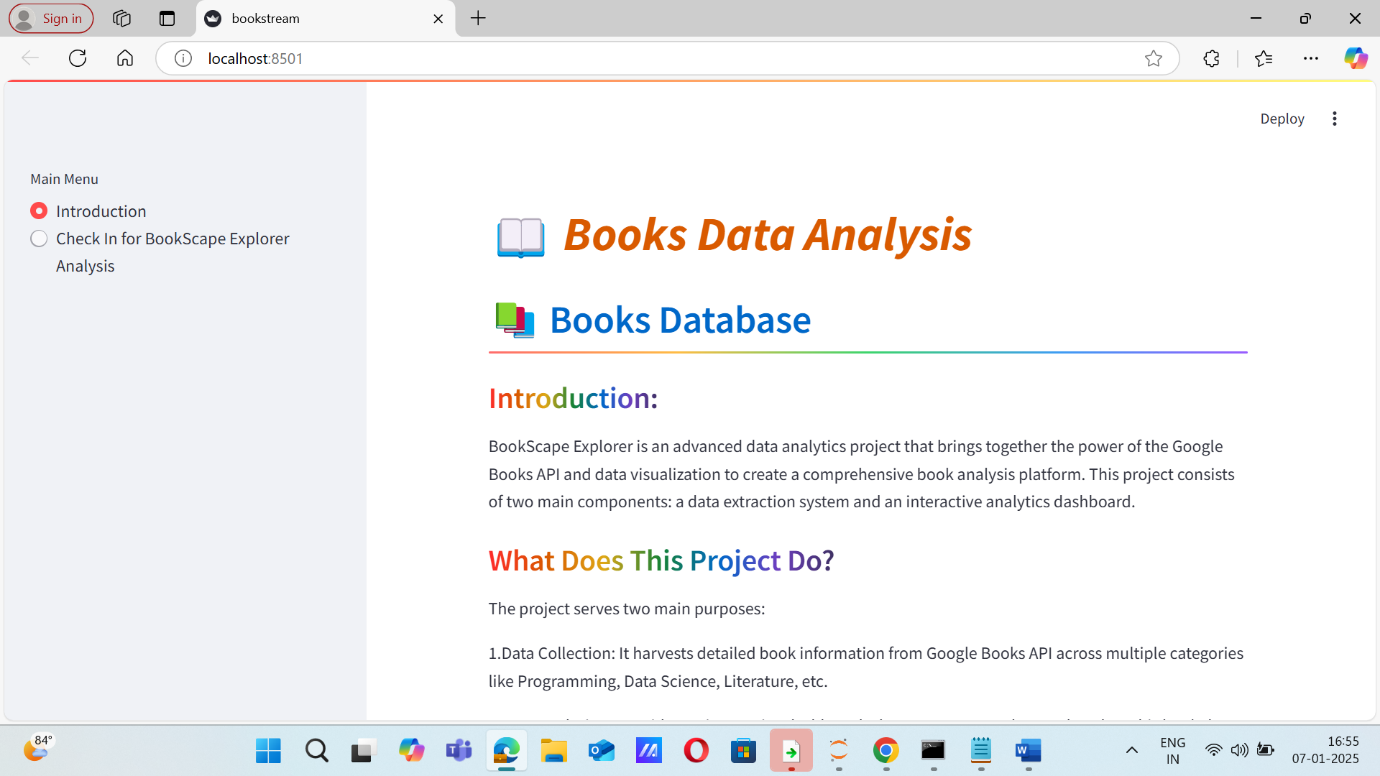
1. Technical
   * Python Programming
   * Data Science
   * Machine Learning
   * Web Development
2. Business & Economics
   * Economics
   * Business
3. General Interest
   * Cooking Book
   * English Literature
   * Human Psychology
   * Physics

**Troubleshooting Guide**

* Check if MySQL server is running
* Verify connection credentials
* Ensure database exists
* Verify API key is valid
* Monitor API rate limits
* Ensure all libraries are installed
* Check if database has data

**Additional Resources**

* Google Books API Documentation
* Streamlit Documentation
* MySQL Documentation

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