Study Material Provider Telegram Bot Using Python

SakibAyan Sheikh[1], Rohan Chaware[2], Madhavi Sadu[3]
[1,2] *B-Tech UG Students, CSE , RCERT Chandrapur*
[3] *Professor, CSE, RCERT Chandrapur*

Abstract*—This project introduces a Telegram bot that simplifies the access to study materials for students. A user-friendly inline keyboard is infused in the bot which enables the bot to let users interact easily by issuing commands for downloading certain educational resources. After the processing of a command is completed, the bot redirects users to a special file-sharing bot where they can download the necessary study materials. This would make accessing educational materials easier and add an interactive experience for the students to have an easier approach to the familiar messaging environment. The project reflects the very impressive effectiveness of integrating technology into education: how automated systems can help contribute to learning and access to resources.

Keywords: Telegram bot, Study materials, Inline keyboard, User interaction, Educational resources, Technology integration, File sharing

I. INTRODUCTION

Access to educational resources is one of the key factors in enhancing the quality of experiences of students in learning today. Technology development keeps introducing new innovations for diverse learners' needs. This paper develops and implements a Telegram bot specifically designed to make study materials more accessible to students.

A friendly user interface accompanied by mass popularity makes the Telegram medium an ideal interface for educational interaction. An inline keyboard of interactive type gives a bot opportunities to execute the commands of students with minimal effort, makes an interaction smooth, and thereby creates an even better learning experience. After processing a command, the bot transfers users to a special file-sharing bot designed for this kind of operation, in which one can easily download the necessary educational material.

This project not only automates something that was complicated in the acquisition of study materials but also provides an interactive learning environment in tune with the contemporary tastes of students. From its capability to incorporate automation and instant communication through the Telegram bot, it will easily be seen how technology might be applied to render the process of education more efficient and accessible. This paper discusses the processes undertaken to develop the bot, its functionality, and its probable value in reshaping student learning.

II. AIMS AND OBJECTIVES

The main objective of this project is to design a simple and efficient Telegram bot for providing centralized study material access to students. It will mainly achieve the following objectives .

1. Ease the process to find study materials: The bot will work as an intermediary to simplify the search for study materials, saving the students from going through numerous online sources.

2. Centralized repository: The bot will be the central storage place for most study materials that will make it simpler for learners to access multiple subjects and topics

3. Improved accessibility: Being accessible through the trending messaging app is an assured way through which the students will have easy access to study materials through their mobile devices.

4. Organization and management: It will sort out the study materials of the students in an orderly manner so that relevant study materials may become accessible at the appropriate point of time.

5. Efficient Learning: Convenient access and availability of study material through the bot can be employed for effective learning.

Overall, it aims to develop a valuable tool that is able to offer access to study materials easily, facilitates organization, and enhances the general learning experience for students.

III. METHODOLOGY

- Software Description

Programming Language: Python

Framework: Telegram Bot API

- Libraries:

requests: For making HTTP requests to API
telebot: wrapper for the Telegram Bot API

- Hardware Description

Minimal Requirements:
A computer or laptop or a mobile phone with an internet connection
A Telegram account

IV. MODULE DESCRIPTION

- Bot Configuration:

-Activation of all settings like api token, bot name, and a database connection in case it makes use of a database.
-Telethon library is helpful to complete the bot configuration process
-Commands or messages that the bot deals with along with respective handlers

- User Input:

-The input messages from users that are fetched by the bot
-This input message is parsed to identify a particular command or query
-Therefore, the appropriate handler is called
-The bot returns an informative response or an error message

- Search Capability

-The search algorithm like keyword match or semantic search is employed in creating study material
-The method employs libraries such as Elasticsearch or Whoosh for efficient indexing and searching
-It accepts filters depending on user preference or keyword for it to filter the search result

- Download File:

-Downloads the file from specified URL or any sources using requests library.
-Deals with potential errors that are likely to occur during the download, for instance, network error or file not found.
-Saves the downloaded files in a location specified.

- File Storage

-Stored downloaded files in a convenient place, such as a local directory or cloud storage.
- Files categorized by course, subject, or other applicable classifications.

- File Deletion and renaming facilities

-The bot includes exception and error trap to handle during run time
- Report errors on user console
-Errors logged for debugging End.

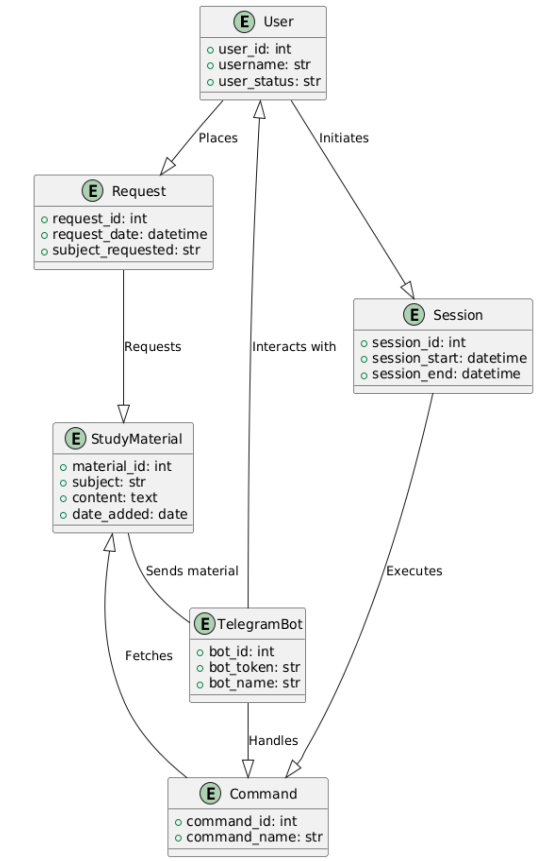
V. ALGORITHM DESCRIPTION

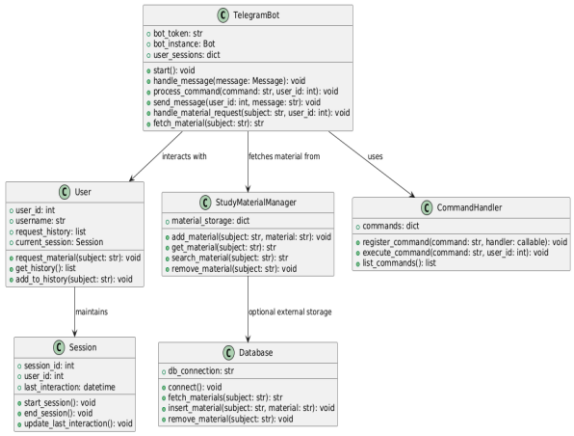
User Input:
- waits for a message from user
- If the message contained a command or question about course materials, then the system continues to the next section
Search:
- gathers keywords or query from input message
- it employs the opted search algorithm such as keyword based search, semantic search to obtain relevant study materials from its stored database or from external locations.
• The rank is a result of the output produced based on their relevance and similarity related to the query of the user.

File Download:
• If study materials relevant to it are available, the bot chooses the most preferred file according to the user's preference or any other specific criteria chosen.
• It downloads the file with the help of the requests library; it also provides the URL or file path for download.
• The bot has the functionality to deal with the error that would have occurred during the download process; some networks issues or the file not found.

File Storage:
It saves the downloaded file to a predetermined location, sorted by subject, course, or any other criterion.
Bot checks its database and local storages for verification of the status of the downloaded file.
Answer: Bot messages the user with the status of download and also provides with the address, link, or other details of the downloaded file.
When the bot faces an error during the download process, it sends an error message to the user and suggests some troubleshooting steps..

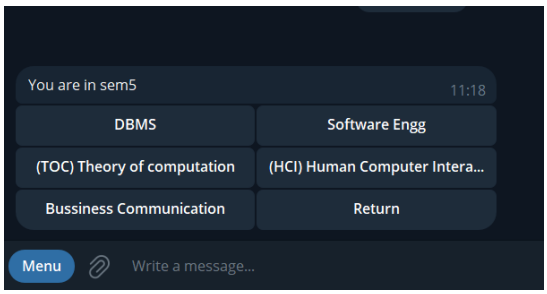
IV. UML/ER DIAGRAMS



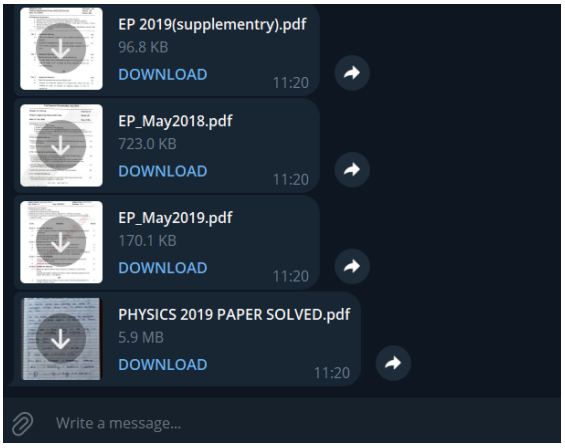


IV. EXPECTED OUTPUT

User Interaction:



Final Output:



APPENDIX

Description: The Telegram Study Material Bot allows students to easily access study resources through an interactive inline keyboard. Users can select commands to request specific materials, and the bot will redirect them to a file-sharing bot for quick downloads. It's a convenient way to enhance learning and access essential study materials anytime, anywhere.

Features:
Isnteractive Inline Keyboard: User-friendly navigation and choice of command.
Command Request: Easy way to get specific material for study.
Tainless Redirecting: Get redirected to a file sharing bot for easy download by any user.
Resource Library: Wide content range of material across several subjects.
Accessibility: Available anywhere and anytime, 24/7. It is very accessible for the student.
User Feedback: The options provided to give users feedback to improve the resource.
Regular Updates: Constantly uploading new contents and features..

Purpose: The purpose of the Telegram Study Material Bot is to provide students with quick and easy access to study resources through an interactive inline keyboard, allowing them to request materials and seamlessly redirecting them to a file-sharing bot for downloads.

REFERENCES

[1] Bot Father. (n.d.). Telegram Bot API Documentation. Retrieved from https://core.telegram.org/bots/api

[2] Telegram. (n.d.). Inline Keyboard Markup. Retrieved from https://core.telegram.org/bots/api#inlinekeyboardmarkup
[3] Gruber, J. (2019). Building Telegram Bots: A Practical Guide to Creating Bots for Telegram. O'Reilly Media.
[4] Kearney, M., & Maher, D. (2020). Chatbots in Education: A New Era of Learning. Springer.
[5] Python Telegram Bot. (n.d.). Python Telegram Bot Documentation. Retrieved from https://python-telegram-bot.readthedocs.io/
[6] Kearney, M. (2019). The Impact of Chatbots on Education: A Review. In Innovations in Learning Technologies for English Language Teaching (pp. 45-60). Routledge.