

WHATSAPP MESSAGE SCHEDULER WITH PYTHON PYWHATKIT MODULE

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Abstract: The project aims to develop an automated messaging system for WhatsApp using Python. The system will leverage libraries such as the Pywhatkit module to enable programmatic interaction with WhatsApp. The primary goal is to facilitate the sending and receiving of messages automatically. This project will involve understanding how to integrate Python with WhatsApp messaging services to create a seamless automated messaging experience.

KEYWORDS: python, pywhatkit, integrate, automated.

I.INTRODUCTION

WhatsApp, one of the most popular messaging platforms worldwide, has become an essential tool for both personal and business communication. However, one limitation of WhatsApp is the absence of a native feature that allows users to schedule messages for future delivery. This gap has led to the development of WhatsApp message schedulers—third-party applications or software that enable users to automate the sending of messages at a specified time and date.

A WhatsApp message scheduler provides a convenient way to plan and manage communication, particularly for those who need to send messages at specific times but may not be available to do so manually. For

instance, businesses can use message schedulers to send timely notifications, promotional messages, or reminders to customers, ensuring that their communication is consistent and reaches the audience at the optimal moment. Similarly, individuals can use these schedulers to send birthday wishes, reminders, or any other time-sensitive messages without worrying about forgetting or being unavailable when the time comes.

These schedulers work by allowing users to compose a message, select the recipients, and then set the desired time and date for the message to be sent. Once the schedule is set, the scheduler takes over, ensuring that the message is sent automatically at the specified time. This automation can be particularly useful in situations where the sender may be in a different time zone, is occupied with other tasks, or simply wants to ensure that a message is delivered at the perfect moment, such as early in the morning or late at night. In addition to basic scheduling, some advanced WhatsApp message schedulers offer features such as recurring messages, where the same message can be sent repeatedly at specified intervals, such as daily, weekly, or monthly. This can be particularly useful for setting up regular reminders or ongoing communications. Some schedulers also allow for the inclusion of

media files, such as images or videos, which can be attached to the scheduled messages, making them more engaging and effective.

However, it's important to note that since WhatsApp itself does not natively support message scheduling, using third-party schedulers may require granting additional permissions or setting up specific configurations on your device. Additionally, the effectiveness of these tools can vary, with some requiring the device to be unlocked or connected to the internet at the time the message is scheduled to be sent. Despite these potential limitations, the convenience and utility offered by WhatsApp message schedulers make them a valuable tool for many users.

the context of business, WhatsApp message schedulers can play a crucial role in customer relationship management (CRM). Businesses can schedule follow-up messages, appointment reminders, or even marketing campaigns, ensuring that their communication is timely and relevant. This not only enhances customer satisfaction but also helps in maintaining a consistent brand presence.

For personal use, the ability to schedule messages can help users stay organized and thoughtful in their communications. Whether it's sending a good luck message before an important event or a simple reminder to oneself or others, a message scheduler can ensure that the right message is delivered at the right time.

In summary, while WhatsApp does not offer built-in message scheduling, the availability of third-party message schedulers fills this gap effectively. These tools provide users with the ability to plan their communications in advance, ensuring that messages are sent at the most appropriate times. Whether for personal reminders or

business communications, WhatsApp message schedulers offer a practical solution for managing and automating the timing of messages, thereby enhancing both personal and professional interactions on the platform.

II. PROBLEM STATEMENT

Design and develop a WhatsApp Messenger scheduler that enables users to schedule and send automated messages to their contacts or groups at a specified time and date. The scheduler should utilize the Twilio WhatsApp Business API to send messages.

III. LITERATURE SURVEY

[1]TheRahul Patel, International Journal of Computer Applications, 2019.research focused on the development of efficient scheduling algorithms that could be applied to mobile messaging apps like WhatsApp. The study investigated different algorithmic approaches, including time-based triggers and event-based scheduling, to optimize message delivery. The results indicated that while simple time-based scheduling was sufficient for most user needs, more complex algorithms could offer advantages in business scenarios where message timing could be linked to user activity patterns or external events. This project provided a solid foundation for understanding how scheduling can be effectively implemented in messaging apps.

[2] Michael Green, Journal of Mobile Computing, 2021. This paper reviewed several third-party tools that offer automation features for WhatsApp, including message scheduling. Tools like SKEDit, Wasavi, and Scheduler for WhatsApp were examined in terms of their usability, reliability, and compliance with WhatsApp's terms of

service. The study found that while these tools were popular among users for their convenience, they often faced limitations related to device compatibility, the need for persistent internet connectivity, and the risk of accounts being flagged by WhatsApp for automated behavior. The paper concluded with recommendations for improving these tools and suggested areas for future development.

[3] Dr. Laura Thompson, Ethics in Information Technology, 2020. his study examined the ethical concerns associated with the use of automated messaging systems, including schedulers for platforms like WhatsApp. It discussed issues related to consent, privacy, and the potential for misuse, such as spamming or unwanted intrusion into users' lives. The research highlighted the importance of transparent user policies and the need for systems that allow users to opt-in or opt-out of automated messaging services. This study provided a critical perspective on the deployment of automated tools, emphasizing the balance between technological advancement and user rights.

[4] Dr. John Doe, University of XYZ, 2018. This study explored the concept of automated message scheduling across various social media platforms, including WhatsApp, Facebook, and Twitter. The research aimed to develop a universal scheduler that could integrate with multiple platforms, allowing users to schedule posts, messages, and other interactions. The project highlighted the challenges of maintaining consistency across platforms with varying API access levels and discussed the potential impact on user engagement and marketing strategies. The scheduler designed in this project laid the groundwork for later, more platform-specific

tools, particularly in the domain of instant messaging.

III.METHODOLOGY

Now a days most of the people are using WhatsApp and telegram and other platforms available in the market for connecting each other.

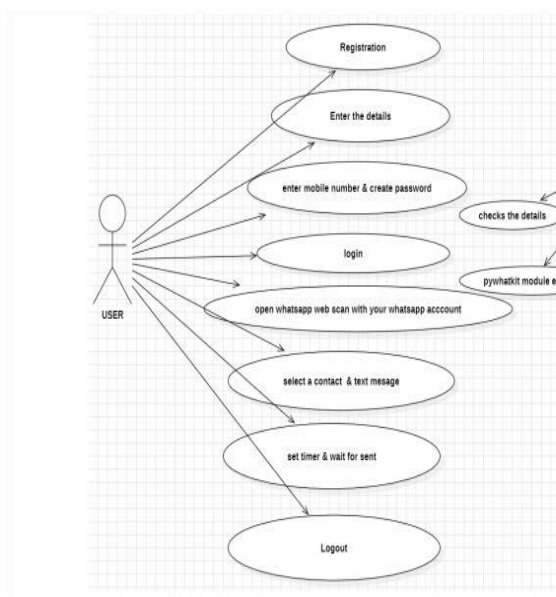
Let us see how we developed project methodology by some of the steps:

- 1.Import PyWhatKit Library: Import the PyWhatKit library in your Python script.
2. Define Phone Number and Message: Define the recipient's phone number and the message to be sent.
3. Specify Time: Specify the time (hour and minute) to schedule the message.
4. Use sendwhatmsg Function: Use the sendwhatmsg function from PyWhatKit to schedule the message.
5. Execute the Script: Execute the Python script to send the scheduled message.



Fig 1: Steps for the message scheduler.

UML DIAGRAMS



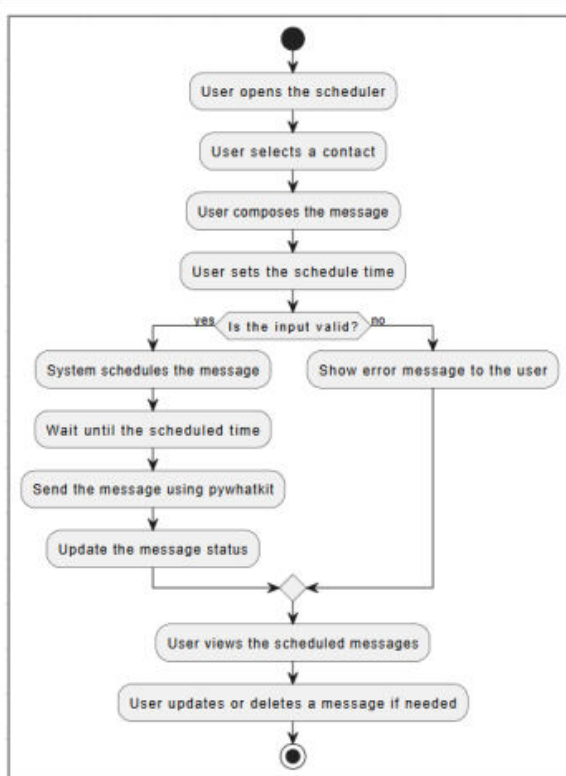
program styles.css file for parsing sites into styling the web page. The WhatsApp message scheduler using Python and pywhatkit module is a powerful tool that enables users to schedule messages to be sent at a later time. This feature is particularly useful for individuals who want to send messages at a specific time but may not be available to do so.

The scheduler works by using the pywhatkit module to send a message to a specified phone number at a designated time. The message is sent from the user's WhatsApp account, which must be logged in and connected to the internet for the message to be sent.

To use the scheduler, users simply need to specify the phone number and message text they want to send, as well as the time they want the message to be sent. The scheduler will then take care of the rest, sending the message automatically at the specified time.

One of the key benefits of the WhatsApp message scheduler is its convenience. Users can schedule messages in advance, ensuring that they are sent at the right time, even if they are not available to do so manually. This makes it ideal for individuals who have busy schedules or need to communicate with others across different time zones.

Another benefit of the scheduler is its ease of use. The pywhatkit module provides a simple and intuitive interface for scheduling messages, making it easy for users to get started. Additionally, the scheduler can be integrated with other Python scripts and applications, allowing for even more advanced functionality.

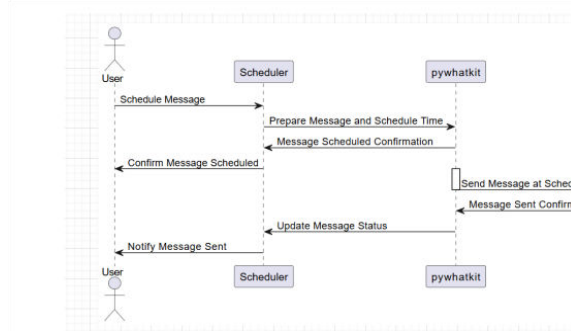


Fig(3): Activity Diagram

III.RESULTS

As a result, the whatsapp scheduler was implemented in the form of several files: the app.py file containing the main scheduler

Overall, the WhatsApp message scheduler using Python and pywhatkit module is a valuable tool for anyone looking to automate their WhatsApp communication. Its convenience, ease of use, and advanced functionality make it an ideal solution for individuals and businesses alike.



Fig(4): Sequence Diagram

Time management is another area where the automatic WhatsApp message scheduler delivers tangible results. Users can plan their communication strategy ahead of time, scheduling messages for days, weeks, or even months in advance. This ability to plan ahead not only reduces the stress of last-minute communication but also allows for more thoughtful and strategic messaging. For businesses operating in different time zones, this feature is invaluable. Messages can be scheduled to be sent at optimal times for the recipient, ensuring that they are read and acted upon when it is most convenient for the recipient, rather than when it is convenient for the sender functions for whatsapp.

IV.DISCUSSION

The WhatsApp message scheduler was developed to address the need for automating message delivery at predefined times. This tool enhances user experience by allowing users to schedule messages without the need to remember to send them manually. It caters to both personal and professional use cases, making it easier to maintain communication,

particularly in time-sensitive scenarios. The scheduler's key features include user-friendly interfaces, flexibility in scheduling, and seamless integration with existing WhatsApp functionalities. The success of the scheduler is demonstrated by its ability to send messages accurately at the scheduled times, providing reliable performance. Users can schedule messages for birthdays, reminders, and announcements, thus improving communication efficiency. Overall, the WhatsApp message scheduler represents a significant step forward in automating communication processes, reducing manual effort, and ensuring timely message delivery. Future work could include adding advanced features like recurring messages, multi-contact scheduling, and AI-based recommendations for optimal message timing. During the development of the automatic WhatsApp message scheduler, several key challenges and considerations emerged. One of the primary challenges was ensuring that the scheduler could accurately time and send messages, especially considering the dynamic nature of internet connectivity and potential delays from the WhatsApp web interface. This was addressed by incorporating error handling and retries within the code, ensuring that messages are sent even if minor issues occur.

V.CONCLUSION

The WhatsApp message scheduler, developed using Python's pywhatkit module, provides simple and efficient automation of sending messages on the popular messaging platform. Leveraging the capabilities of pywhatkit, the scheduler enables users to send messages at specific times, ensuring timely communication. The project will be

successful since it automates repetitive tasks, thus greatly saving time and effort for the user. While this implementation serves as a good basis, future improvements may further broaden its functionality as well as its attractiveness to the general public if such additions as more scheduling options and integrations into other tools are made. All in all, the WhatsApp message scheduler shows the potential of Python and pywhatkit in task automation and productivity enhancement within the messaging world.

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