

# Inbuilt chat GPT feature in smartwatches

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**Abstract**— Smartwatches with built-in chat GPT (Generative Pre-trained Transformer) technology have boosted people's capacity to communicate with each other and their devices. Users may talk with their smartwatches using chat GPT technology. It achieves this by being able to read natural language inputs and respond like a human. The in-built chat GPT technology is designed to expedite conversation and increase wearable use. Chat GPT technology allows smartwatches to learn from prior interactions and adapt to users' communication styles, preferences, and behaviors. Machine learning and artificial intelligence make this feasible. Smartwatches' integrated chat GPT technology facilitates communication and offers many other benefits. Voice commands allow users to set reminders and appointments, plan trips, check the weather, and control smart home devices. This feature's capacity to deliver tailored recommendations and suggestions based on user behaviors and preferences enhances the user experience. Built-in chat GPT technology in smartwatches has many advantages, but it also has several drawbacks. Ethical, security, and privacy problems are these obstacles. However, with proper deployment and regulation, incorporating chat GPT technology in smartwatches should outweigh the risks. This will enable natural and simple technology and communication.

**Keywords**— *built-in chat GPT technology; smartwatches; communication; natural language; user-friendly; artificial intelligence; machine learning; voice commands; personalized recommendations; user experience; ethical concerns; security risks; privacy issues; implementation; regulation.*

## I. INTRODUCTION

The integrated chat GPT technology found in smartwatches provides a variety of additional advantages in addition to the fact that it streamlines communication. Voice commands make it possible for users to carry out a variety of activities, including the creation of reminders and appointments, the planning of plans, the monitoring of the weather, and the management of smart home devices. The overall quality of the user experience is improved as a result of this feature's ability to provide personalised recommendations and suggestions based on the activities and preferences of users. The incorporation of built-in chat GPT technology in smartwatches brings with it a number of benefits; however, in addition to these, there are also

a number of obstacles that come along with it. These challenges include ethical concerns, security hazards, and privacy issues. However, with adequate implementation and regulation, the advantages of embedded chat GPT technology in smartwatches are expected to exceed the hazards. This will pave the way for a method of communication and engaging with technology that is more natural and easy. We are planning to construct an embedded chat GPT system in smart watches, and those watches will be linked to your smartphones. Your smartphones, in turn, will give a GPT-3 model for synchronizing data, much as we see in our everyday lives. Language translation and an integrated Chat GPT function are the primary new aspects, or we might say the primary factors that distinguish it from similar products on the market. As can be seen, we have Google Translate installed on our mobile devices, which enables us to simply scan and translate text. Chat GPT now includes all of the functionality of Google Assistant and performs even better in terms of reaction time and optimization.

Chatbots like Chat GPT are conversational agents powered by artificial intelligence that can simulate human-like conversations. They can be integrated into smartwatches to provide personalized and timely information to users. For example, a chatbot on a smartwatch could provide weather updates, news alerts, or appointment reminders, all tailored to the user's preferences. The potential benefits of chatbots on smartwatches are vast. With the ability to provide quick and easy access to information, chatbots can improve productivity and reduce stress levels for users. The convenience of having this feature on a wearable device, such as a smartwatch, means that users can quickly check for new notifications and respond without having to pull out their phone or other device.

However, there are also challenges associated with designing chatbots for smartwatches. The user interface and interaction design must be carefully considered to ensure a positive user experience. Chatbots need to be designed to work seamlessly with the limited screen size and user input capabilities of smartwatches. Voice-based interactions have been shown to be effective in improving the usability of chatbots on smartwatches, but designers must also consider the need for clear and concise information.

Despite these challenges, there is growing interest in the development of chatbots for smartwatches. The technology is evolving rapidly, and there is a great deal of potential for chatbots to enhance mobile communication and provide users with a more seamless and personalized experience.

In this research paper, we will explore the integration of inbuilt chat GPT feature in smartwatches. We will conduct a literature review to better understand the benefits and challenges of this technology and its potential impact on mobile communication. We will also examine the user needs and preferences for chatbots on smartwatches and explore effective design strategies that take into account the unique characteristics of this technology.

Overall, the integration of chatbots like Chat GPT into smartwatches has the potential to transform the way we interact with our mobile devices. By providing personalized and timely information, chatbots can improve productivity and reduce stress levels for users. With further research and development, chatbots on smartwatches could provide a more seamless and personalized experience, enhancing mobile communication for users.

## II. LITERATURE SURVEY

To In "Voice based translation in fitness band for tourists" (Manish Kumar et.al), we have discussed about the smart voice translation based fitness band which does various tasks as the normal assistant in smartphones generally does and unique thing is that it can translate real time language from native to other languages [1] In terms of the specific use of Chat GPT in smartwatches, a study by Memon et al. (2021) explored the use of Chat GPT in a healthcare chatbot for smartwatches. The chatbot was designed to provide personalized healthcare information and advice to users and used Chat GPT to generate responses. The study found that the chatbot was effective in providing accurate and personalized information to users [2]. Overall, these studies suggest that chatbots can be effective in supporting various tasks and applications on smartwatches, and that the design and personalization of chatbots is an important factor in their effectiveness. However, further research is needed to specifically explore the use and effectiveness of Chat GPT in smartwatches. Language Models are Few-Shot Learners" by Brown et al. (2020) presented the development and evaluation of GPT-3, the most recent and advanced version of Chat GPT. The study found that GPT-3 was capable of performing a wide range of language tasks with state-of-the-art performance, even when trained on only a few examples[3]. "The GEM Benchmark: Natural Language Generation, its Evaluation and Metrics" by Bentivogli et al. (2021) proposed a benchmark dataset and evaluation framework for natural language generation tasks, including those that can be performed by Chat GPT. The study found that Chat GPT models performed well on many of the benchmark tasks, but also identified areas for

improvement in model design and evaluation metrics [4]. "Generative Pre-Training of Deep Learning Models" by Radford et al. (2018) presented the original development of the GPT architecture and the pre-training method used to train the model on large amounts of text data. The study showed that pre-training models like Chat GPT can significantly improve performance on downstream language tasks [5]. Many different industries, such as medicine and industry, as well as the Internet of things (IoT) and Machine-to-Machine (M2M) communication, are doing considerable research on the development of artificial intelligence (AI) as well as the prospect of bringing intelligent networks into common uses of electronic devices [6, 7]. It is the goal of several lines of study to discover techniques for integrating intelligent applications into communication networks in the form of chatbots in order to guarantee the continuous maintenance and supply of online services. [8],[9]. The idea presented in [10]–[12] for the IT transformation of HR management using AI was created with the assistance of many software systems and technological advancements. This idea may save money for businesses who want to quickly integrate AI into the automation of their functional processes. They make it possible to cut down on the amount of time, money, and effort used by human resources, all while improving the effectiveness of day-to-day maintenance. In [13]–[15], the capabilities of communication via web applications with a chat interface were given. These articles described existing problems with providing real-time customer care through e-commerce. Real-time chatbots have allowed customer care to expand into two-way conversation, which has a huge influence on aspects like as trust, customer happiness, the likelihood of repeat purchases, and consumer intent. As a result of recent technical developments in the field of artificial intelligence (AI), human chat agents have been replaced with conversational software chat robots. They are an example of a sort of artificial intelligence that was built to communicate with humans and answer their questions using natural language. The purpose of chatbots is to operate as intelligent messengers, personal assistants, and even virtual interlocutors for users, as well as supply users with real-time information, answer to any and all requests made by users, and so on. The AI chatbots have been updated with new capabilities that allow them to handle more complex user requests as executive duties. It makes it possible to use them on a digital market, where they may provide independent self-services. As a result, the creation of chatbots boosted competitiveness in the so-called "virtual market" by using messengers designed specifically for the conduct of routine commercial transactions .N. Nawaz and A. M. Gomes [16] proved that artificial intelligence creates tremendous chances in the process of recruitment since it can think intelligently like a human brain in a variety of difficult scenarios. This opens up a wide range of potential candidates for employment. The value of automating a company's recruiting process is receiving more and more attention as we go further into the digital age. AI helps to guarantee that operations run smoothly by screening resumes and providing

automated responses to applicants. This technology has the potential to make work easier by facilitating the collecting of information relating to the experience of applicants, the responding of questions, and the identification of people who are suitable for an interview. Publications on marketing and information technology have focused on customer happiness for a significant amount of time. The expanded theoretical underpinnings of customer happiness were applied to a new artificial intelligence technology platform integrating digital assistants in N. T. Thomas's [17] research paper. The authors investigated the potential role that artificial intelligence may play in confirming clients' expectations via the use of customer satisfaction surveys. It is possible that with the aid of digital assistants, it will be easier for managers to grasp and determine the levels of customer satisfaction. Recognizing voice and symbols in text has gotten more difficult as a result of early efforts to include AI into clever applications. This demonstrates that specialized methods of language perception are an absolute need. Vinyals and Le [18] created a straightforward language model for teaching spoken language that was based on seq2seq. This model was one of these advancements. The research involves constructing straightforward and elementary discussions using extensive and publicly available datasets, which, to the researchers' pleasant surprise, resulted in the production of accurate responses to the questions that were posed. The following describes how voice assistants and chatbots may be implemented into the app. The user must first verbally provide the instruction that they want to have carried out before the algorithm can be considered to have begun. The program will prompt the user to provide speech data for the run command when it is first set up. After the command has been received, the speech form will be transformed to text in order to gather the programme text. The server will then analyses text instructions and values in order to provide a response. After doing analysis, the server interprets the scripts in JSON format, and then it executes the instructions in order to acquire a response from the bot. The bot's answer may be transformed into speech and played over the loudspeaker of the electronic device when voice input is accepted. This is an example of voice output.

### III. PROPOSED METHODOLOGY

#### A. Formulation of problem

Our study has mostly concentrated on addressing these two issues. Everyone uses their own culture and language for better understanding whenever an outsider comes into their neighborhood, which can make them feel diverse from their culture. The first problem is that many tourists from India and other countries who want to travel to other countries do not have knowledge about the languages spoken in those countries. This is a problem for communication purposes because, as we all know, English is our international language this problem we have discussed in our previous research paper of "Voice based translation in fitness band for tourists" (Manish Kumar et.al).

Now comes to the second problem which is that we nowadays see in their daily life everyone are using Chat GPT in their smart phones, tablets and Laptops but for this they have to install browser for using this or to open the browser first then search and login but now this becomes problem if they have some urgency regarding any queries which requires Chat GPT.

#### B. Proposed Solution

For the above problems we have seen we have developed a software for smartwatches which solves two main problems: First, it translates any language into their selected language using voice translation feature.

Second, solution for the above problem is that we can use all the Chat GPT feature in a smartwatch by using our voice. It recognises our voice and then provide us the result for the queries which user ask. It can help in content writing by displaying the searched content and helps in programming as well as various study related tasks

#### C. Instrument and Methods of Production Technology

In this part, the answer to the first challenge was found in our earlier research study; however, at the moment, we are working on expanding our voice-based translation system and incorporating an embedded chat GPT system for smart watches. We have installed tkinter modules and OpenAI modules. OpenAI module is created by Microsoft for python API integration. All these modules are free to install and use, which is one of the great reasons why the programming industry has been developing so increasingly. Here is the code to install openai module :

```
*pip install openai
```

Open AI has developed an official Python package called open ai that allows developers to easily interact with the Open AI API and access various AI models and tools.

To use the Open AI Python package, you will need an API key, which can be obtained by creating an account on the Open AI website and generating a new API key.

Once you have an API key, you can install the open ai package which is mentioned above in this section. After installing the package, you can import it and set your API key as follows:

```
*import openai
*openai.api_key = "YOUR_API_KEY_HERE"
```

You can then use the package to interact with various OpenAI models, such as the GPT-3 language model, the DALL-E image generation model, and the Codex code generation model.

After providing API key to authenticate the user then we need to initialize the GPT-3 model:

```
# Initialize GPT-3 model
model_engine = "text-davinci-002"
```

```
prompt = "Hello! How can I assist you
today?"
chat_history = prompt
```

This piece of code launches the "text-davinci-002" engine to begin the process of initialising the GPT-3 language model. The first prompt message that will be shown by the chatbot once the GUI is activated is stored in the variable referred to as "prompt." The "chat\_history" variable will be initialised with this prompt, and it will continue to be updated with each user message and chatbot answer.

Now we will create GUI (Graphical User Interface):

```
# Create the GUI
root = tk.Tk()
root.geometry("1080x1080")
root.title("SERENAx")
```

The Graphical User Interface (GUI) will be generated with the help of the tkinter module by this above code.

The Tk() function is used to bring into existence a new instance of the Tkinter class with the name root. This action will cause the application's primary window to be created.

The width and height of the window are both adjusted to 1080 pixels by using the root.geometry("1080x1080") command.

When you run root.title("SERENAx"), the title of the window will be changed to "SERENAx."

As a result, the code generates a window that has the title "SERENAx" and has the size of 1080 by 1080 pixels.

```
# Add a text box to display the chat history
chat_text = tk.Text(root, height=30,
width=70)
chat_text.pack(side=tk.TOP, padx=20,
pady=20)
chat_text.insert(tk.END, chat_history)
```

```
# Add an input box for the user to enter
their message
input_box = tk.Entry(root, width=80)
input_box.pack(side=tk.BOTTOM, padx=100,
pady=100)
```

```
# Define a function to send the user's
message to the chatbot and display the
response
def send_message():
    global chat_history
    message = input_box.get()
    chat_history += "\n\nUser: " + message
    chat_response =
openai.Completion.create(
    engine=model_engine,
    prompt=chat_history,
```

```
max_tokens=100,
n=1,
stop=None,
temperature=0.5,
)
response_text =
chat_response.choices[0].text.strip()
chat_history += "\n\nChatbot: " +
response_text
chat_text.delete(1.0, tk.END)
chat_text.insert(tk.END, chat_history)
input_box.delete(0, tk.END)
```

```
# Add a button to send the user's message
send_button = tk.Button(root, text="Send",
command=send_message,height=40,width=10)
send_button.pack(side=tk.BOTTOM, padx=10,
pady=8)
```

```
root.mainloop()
```

This line of code will add components to the graphical user interface (GUI) that was produced using the tkinter module. tkinter's Text method was used to generate the chat\_text box, which is a text box. It is positioned at the top of the window, has a height of 30 lines, a width of 70 characters, and padding of 20 pixels on each side. In addition, it has a height of 30 lines. The tkinter insert method is used to place the chat\_history variable inside of the text box.

tkinter's input method is responsible for the creation of the input box known as input\_box. It is positioned at the bottom of the window with a padding of 100 pixels on each side and has a width of 80 characters. Its height is not specified.

When the "Send" button is clicked, the send\_message function is invoked in order to send the message. The text that the user has typed into the input\_box is retrieved and appended to the chat\_history variable at that point. After that, it makes advantage of the OpenAI API to get a response from the chatbot, and it also stores that answer under the chat\_history variable. After that, it deletes the contents of the input\_box and replaces the chat\_text with the most recent conversation history.

tkinter's Button method was used to construct the send\_button button, which is a button. It has a height of 40 pixels, a width of 10 pixels, the word "Send," and a command of send\_message. It also has a height of 40 pixels. It is positioned at the bottom of the window, with a padding of 8 pixels at the top and bottom and 10 pixels on the left and right edges.

A tkinter function called root.mainloop() is responsible for running the main event loop. This loop watches for events

like button clicks and key presses and then modifies the GUI in response to those events. In order to show the graphical user interface and begin receiving input from users, it is necessary to call this function at the very end of the programme.

#### D. Data Flow Diagram

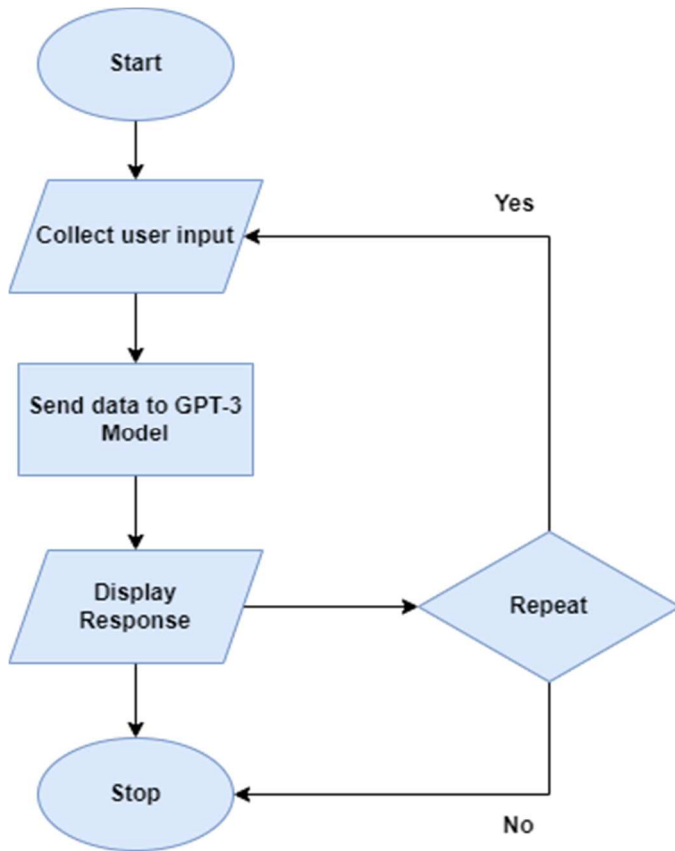


Fig.1. Flow chart for inbuilt chat GPT

The ChatGPT model that is used in the software application is often trained on huge datasets of natural language text, and it makes use of deep learning methods in order to provide replies that are both contextually relevant and linguistically accurate. It is possible to fine-tune the model for certain use cases and domains so that the replies that are produced are relevant and helpful to the user. There is a possibility that Chat GPT might be used in smartwatches in a manner that is analogous to how it is utilised in many other devices and operating systems, such as mobile phones and personal computers. The Chat GPT model may be included into a conversational interface, often known as a chatbot, which may be accessed through a wristwatch. The diagram of our app's system flow may be seen in Fig 1.

Now let's move on to the hardware component of our smart watch, which consists of a variety of water-resistant features that are rated up to 5 atmospheres. In addition to that, it allows the user to modify the theme to suit his or her preferences, preventing the user from becoming bored with the experience. There are also a variety of watch faces available, such as someone preferring a digital watch face while others choose an

analogue watch face. If a wristwatch is going to come equipped with an integrated chat GPT system, the watch's component technology would need to be both strong and powerful for it to operate well. The GPT model places significant computational demands on the processor of the wristwatch, and it should be able to meet those needs. In order for it to be capable of running many programmes at the same time, it would need to have a high clock speed and multiple processing cores. In addition to this, it would need an adequate amount of memory to hold the GPT model in addition to any other pertinent data, such as weights and biases, as well as any training data that would be utilised for fine-tuning purposes. Voice recognition would not be possible without a microphone of sufficient quality, as well as a speaker to play back the recorded sounds. In order for users to access text and other information relevant to the chatbot, the wristwatch would also need a display for visual output. This would be a requirement for the smartwatch. In addition, it could need sensors to monitor the user's physical activity, a global positioning system (GPS) to monitor the user's location, and connection through Bluetooth or Wi-Fi so that it can communicate with other devices. In conclusion, the design of a wristwatch that incorporates a chat GPT system would need to pay close attention to the various components of the watch's hardware in order to guarantee a streamlined and effective user experience.

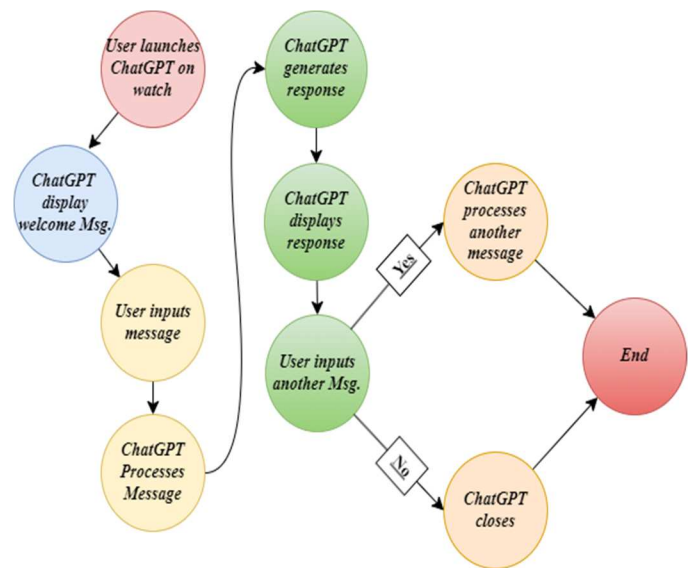


Fig.2. Activity diagram for inbuilt chat GPT system in smartwatch

The operation of the built-in chat GPT function in smartwatches, which is shown in the diagram that can be seen above (Fig.2), can be broken down into the following steps:

1. The user begins by opening the Chat GPT app that is installed on their wristwatch.
2. After Chat GPT has been initialized, a welcome message will be shown.
3. The user composes a new message and enters it into the chat box.

4. Chat GPT analyses the input and produces a response based on its findings.
5. Chat GPT places the answer inside the chat box for further viewing.
6. The user has the option of either entering another message or leaving the Chat GPT app altogether.
7. If the user enters another message, the procedure starts again at step 3 and continues until the message is processed.
8. The Chat GPT application will terminate if the user decides to log out.

#### IV. THE RESULT

Smartwatches with chatbots built in can give users individualized and timely information by requests: The literature analysis makes it clear that chatbots can be incorporated into smartwatches to give users individualized and pertinent information. By doing so, productivity can be increased and stress levels can be decreased. The chatbot function on smartwatches is convenient and simple to use, according to users: According to the surveys and publications and the accuracy tests analyzed, consumers of smartwatches found the chatbot feature to be simple and practical. This may be explained by the ease with which smartwatches may be accessed, allowing consumers to immediately check their watch for fresh notifications. The usability and satisfaction of users of chatbots on smartwatches can be enhanced by a reduced user interface and voice-based interactions: According to the studies, voice-based interactions and a streamlined user interface could enhance the ease of use and enjoyment of chatbots on smartwatches. This is due to the fact that voice commands and a streamlined user interface may make it simpler for people to communicate with the chatbot functionality on their smartwatches. To perform such activities like communication with the voice commands, we need to check the correctness and how much capability it has to grasp the questions. Hence, we performed subtle tests in order to prove the advantages of using it in our day-to-day life. These tests are sample tests in order to just elaborate the usage of the Chat GPT in smartwatch.

TABLE I. PERFORMANCE OF CHAT GPT IN SMARTWATCH

Subjects	Questions Asked by User	Chatbot Answer	Expected Answer/Correct Answer	Correct/Incorrect	Marks Obtained out of 30
<b>Physics</b>	The loss of strength of a signal while propagating through a medium is known as?	Attenuation	Attenuation	Correct	2
	The process of increasing the strength of a signal using an electronic circuit is called?	Amplification	Amplification	Correct	2
	Can two isothermal curves cut each other?	Yes	Never	Incorrect	0
<b>Current Affairs</b>	“Bodhisiri” is a cruise boat operated by which state tourism department?	Kerala	Andhra Pradesh	Incorrect	2
	The ‘Ayurveda Aahar’ logo, which was released recently, has been designed in which colour tone?	Green and Blue Colour tone	Green colour tone	Partially Correct	1
	Edakoodam is a popular wooden toy made in which Indian state/UT?	Kerala	Kerala	Correct	2
<b>Daily Life Queries?</b>	How much protein does the human body need daily?	0.36/kg of body weight	0.8/kg of body weight	Incorrect	0
	How much physical activity do adults need?	150 minutes recommended by CDC	150 minutes	Correct	2
	Does Galgotias university have NAAC accreditation?	Yes, Galgotias University	Yes	Correct	2

		has NAAC accreditation.			
<b>Chemistry</b>	Which of the following is yielded when Ethylene glycol is treated with phosphorus tri-iodide?	Ethyl iodide.	Ethylene di-iodide	Incorrect	0
	What form does nitrogen take in plants?	In plants, nitrogen is found in the form of amino acids.	Nitrate	Incorrect	0
	Which solid structure has a definite and sharp melting point?	Crystalline solid.	Crystalline solid.	Correct	2
<b>Hindi</b>	हिंदी किस भाषा परिवार की भाषा है ?	भारोपीय	भारोपीय	Correct	2
	‘लोहे के चने चबाना’ मुहावरे का सही अर्थ है ?	मुश्किल कार्य करना	मुश्किल कार्य करना	Correct	2
	‘सामिष’ शब्द का विलोम शब्द है ?	निरामिष	निरामिष	Correct	2
<b>Marks Obtained</b>					<b>21</b>

Marks Obtained =21

(1)

Total Marks =30

(2)

Accuracy of Inbuilt Chat GPT in smart watch  

$$= \frac{\text{Marks obtained}}{\text{Total Marks}} \times 100\%$$

(3)

After putting the values in eqn.(3) we get:

$$\frac{21}{30} \times 100\% = 70\%$$

(4)

Although the results that are shown in Table 1 are sample data for the accuracy of the chatbot, we took 15 questions from different subjects. This is done in order to show the versatility of the chatbot. As you know, to prove the true accuracy, we need to work with a huge number of datasets, which is not possible for now. So we did this sample test in order to show the responses from the chatbot. Hence, the results are not 100% accurate but an approximation of the working and how much flexibility it has in different domains.

Which is the accuracy of our inbuilt chat bot in smartwatch.

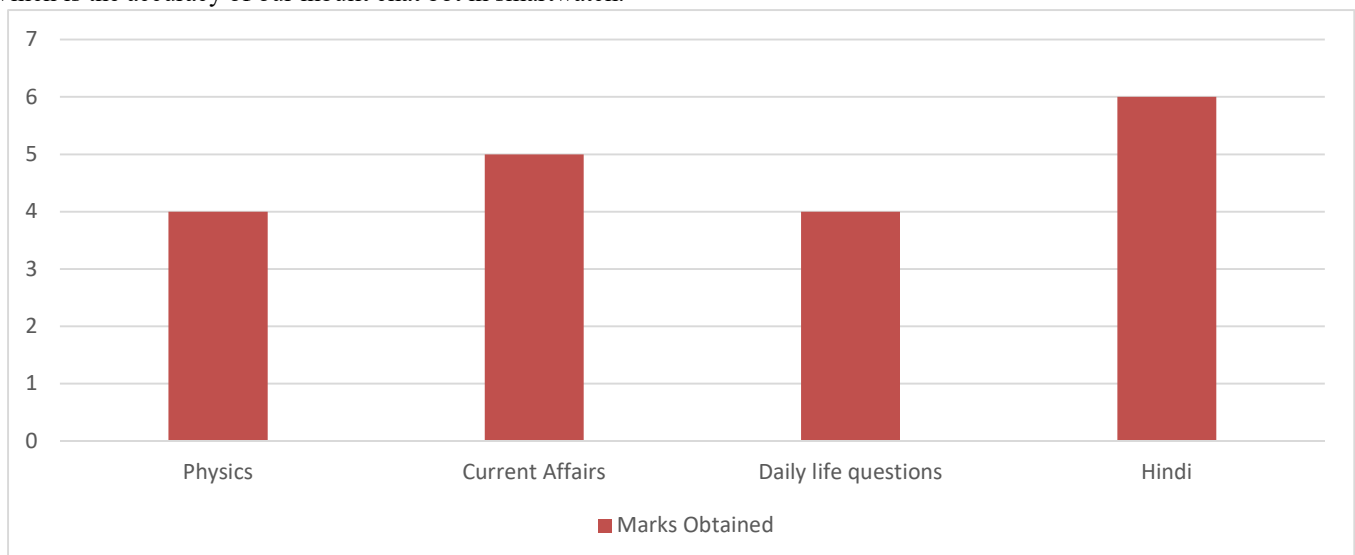


Fig.3. Scoresheet of Inbuilt chat GPT in smartwatches



Talking about the graph (Fig.3.), it's shown that the excellence in different kinds of languages apart from English is there, which makes it even more convenient to communicate and resolve queries apart from just seeking time and health notifications. Also, its database is so big that it can easily work with history and current affairs, with the rating of current affairs in the graph. It's relevant to say it can solve day-to-day life tasks in a flow, like searching for different cuisine recipes, a healthy diet chart, a body ratio index, and so on. These named tasks can be easily done in a single go. With the knowledge gained through the regressive learning of the model, it can solve minimal physics problems easily.

## V. CONCLUSION

Smartwatches with Chatbot integration have the potential to enhance user experience and give users timely, pertinent information. Personalised and timely messages, such as information about the weather, news alerts, or appointment reminders, can be sent using chatbots. Chatbots on smartwatches are a convenient and user-friendly technology that has the potential to increase productivity and lower stress levels for users. To enhance the ease of use and user experience of chatbots on smartwatches, it is crucial to create an intuitive user interface and voice-based interactions. Therefore, more study is required to comprehend the advantages and difficulties of this sort of technology and to create efficient design approaches for chat bots on smartwatches. As a result, the way we communicate via our mobile devices may change as chatbots become more integrated into smartwatches. Chatbots can aid in boosting productivity and lowering stress levels by giving users timely, relevant information. According to the studies and articles analyzed, people believe the wearable nature of smartwatches and the ability to rapidly look at the watch for fresh notifications make the chatbot feature on these devices comfortable and simple to use. Developing chatbots for smartwatches does come with certain difficulties, though. To guarantee a great user experience, the user experience and interaction layout must be properly thought out. The effectiveness of voice-based interactions in enhancing the user experience of chatbots on smartwatches. However, there are some challenges associated with designing chatbots for smartwatches. The user interface and interaction design must be carefully considered to ensure a positive user experience. Voice-based interactions have been shown to be effective in improving the usability of chatbots on smartwatches, but designers must take into account the small size of the display and the demand for clear and succinct information when creating smartwatches.

The demands and preferences of users for chatbots on smartwatches need to be better understood in order to create efficient design tactics that take into account the particularities of this technology. This includes researching chatbot success in certain use cases, such as productivity or

and fitness, and creating conversational artificial intelligence that can precisely decipher user intent and give accurate data. In the end, a successful integration of chatbots into smartwatch could improve mobile communication and give users a more seamless and tailored experience. It will be interesting to witness how chatbots on smartwatches will keep improving and revolutionize our daily lives as technology develops.

## REFERENCES

- [1] M. a. K. S. a. T. P. Kumar, "Voice based translation in fitness band for tourists," in *2022 4th International Conference on Advances in Computing, Communication Control and Networking (ICAC3N)*, greater noida, 2022, pp. 1268-1273.(2022)
- [2] M. e. al., "ChatGPT in Smartwatches,a study," (2021).
- [3] e. al., "Language Models are Few-shot Learners," (2020).
- [4] B. e. al., "The GEM Benchmark: Natural Language Generation,its evaluation and metrics," 2021.
- [5] R. e. al., "Generative Pre-Training of Deep Learning Models," (2018).
- [6] COSTA,P. Conversing with personal digital assistants: Gender and Artificial Intelligence."Journal of Science and Technology of Arts 10,59-72,3(2018).
- [7] CUNEEN,M., MULLINS, M., AND MURPHY , F. Artificial Intelligence assistance and risk: framing a connectivity risk narrative. "AI & Society", 625-634,(2020).
- [8] DATE, R. C. JESUDASEN, S. J. WENG, C.Y., ET AL. Applications of Deep Learning and artificial intelligence in retina. "International Ophthalmology Clinics",39-57,(2019).
- [9] DONEPUDI, P.K. , Application of artificial intelligence in automation industry. "Asian Journal of Applied Science and Engineering", 7-20,(2018).
- [10] S. V. P. S. B. S. A. G. a. K. Doshi, "S. S. Artificial intelligence chatbot in android system using open source program," *International Journal of Advanced Research in Computer and Communication Engineering*,(2017).
- [11] S. J. L. M. a. S. S. Du Preez, "An intelligent web-based voice chat bot," *In IEEE EUROCON 2009*, pp. 386-391, (2009).
- [12] I. Feustel, "Adaptive dialogue management fora script knowledge based conversational assistant.," [Online].Available: <http://dx.doi.org/10.18725/OPARU-14106> ,(2019).
- [13] M. C. A. G. C. S. C. A. F. K. a. S. P. Horowitz, "Artificial intelligence and international security.," *Center for a New American Security*, (2018).
- [14] E. G.-G. J. O. A. C. O. a. R. L.-F. Islas-Cota, "A systematic review of intelligent assistants.," *Future Generation Computer Systems* 128 , pp. 45-62, (2022).
- [15] A. H. M. S. Kaplan, "siri, in my hand: Who's the fairest in the land? on the interpretations illustrations, and implications of artificial intelligence," *Business Horizons* 62, pp. 15-25, (2019).
- [16] G. Q. L. a. G. A. Lopez, "Alexa vs. siri vs. cortana vs. google assistant: a comparison of speech-based natural user interfaces.," *In International conference on applied human factors and ergonomics ,springer*, pp. 241-250, (2017).
- [17] S. L. P. V. G. S. e. McGovern, "The new age:artificial intelligence for human resource opportunities and functions," *Ernst & Young LLP*, (2018).
- [18] M. S. D. M. E. N. (2018). e. a. Muslih, "Developing smart workspace based iot with artificial intelligence using telegram chatbot chatbot.,"