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CHATBOT FOR COVID-19 USING RASA TOOL

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Abstract: Chat bots typically provide a text-based user interface, allowing the user to type commands and receive text response. Chatbots are usually a stateful services, remembering previous commands in order to provide functionality. Since the discovery of the Covid-19, it has become a global pandemic. At the same time, it has been a great challenge to hospitals or healthcare staff to manage the ow of the high number of cases. Especially in remote areas, it is becoming more difficult to consult a medical specialist when the immediate hit of the epidemic has occurred. Thus, it becomes obvious that if effectively designed and deployed chatbot can help patients living in remote areas by promoting preventive measures and reducing psychological damage caused by isolation and fear. Our idea behind this project is to present sophisticated chatbot for users, especially during unknown pandemics like Covid-19. This chatbot answers the FAQ's related to Covid-19.

INTRODUCTION:

By outbreak of this Covid-19 pandemic, people are concerned and having many questions. They have to search for a while to get answers for theirqueries at W.H.O website. It is vital that people are informed about current measures. Reasons for the interest in chatbots include massive advances in artificial intelligence and a major usage shift from online social networks to mobile-messaging applications such as Facebook Messenger, Telegram, Slack and WhatsApp.

Chatbots can be used to triage patients and guide them to receive the appropriate help. Chatbots are considered a more reliable and accurate alter- native to online searches patients carry out when they're trying to understand the cause of their symptoms. Healthcare providers believe that chatbots might help patients who aren't sure where they should go to receive care. Manypeople don't know when their conditions require a visit to the ER and when it's enough to contact their doctors via telemedicine.

Pandemics have unique characteristics that make them amenable to tailored interventions deliverable via chatbots. In particular, pandemics differ from other natural disasters in three key ways. First, individual actions can significantly worsen outcomes in a pandemic, given that a single person may infect many others depending on their behavior. Second, the fear of infecting others, especially loved ones or healthcare workers, makes infectious diseases more insidious through disease-related stigma. Third, the physical gatherings typically used to connect with others in difficult times are exactly what we æsupposed to avoid during a pandemic, worsening the risk for future mental health problems. Chatbots have unique affordances which may mitigate short- and long- term disease burden during infectious disease pandemics. During a pandemic, people do not know what to do. Not following preventive measures can increase everyone's risk of infection. Going to the emergency room for mild symptoms can overburden the healthcare system, wasting precious resources.

LITERATURE SURVEY:

Anran Jiao. proposed a function framework is designed and the principle of RASA NLU is introduced for the Chatbot system. The designed system integrates RASA NLU and neural network (NN) methods and implements the system based on entity extraction after intent recognition. This paper has compared our methods in recognition accuracy and integrities of entity or sentence, and has also validated the developed system in realistic situation. In the future, this system will be further improved the recognition accuracy of entity extraction for longer sentences and more complicated entities. The methods in this paper are only used for academic research and not for commercial purposes.

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Gopi Battineni, Nalini Chintalapudi, and Francesco Amenta proposed chatbot in the design phase, which will be followed up by total design into code soon, with plans to launch this app in the next few months. Initially, we would like to release the basic version soon, especially in the context of the severity of the present pandemic of the novel coronavirus. We are developing this chatbot engine in Python, and Watson as the AIML platform. After releasing this bot into the market, based on user feedback, further updates will be possible for at least 3–4 months. Once this COVID-19 pandemic is over, we plan to reuse this conversational agent and make it compatible with other epidemics or other services with individual APIs or relevant datasets.

SYSTEM ARCHITECTURE:

Here in this proposed system, we have developed our application using RASA tools and some basic python modules. The message is received and passed to an interpreter, which converts it into a dictionary including the original text, the intent, and any entities that were found. This part is handled by NLU. The Tracker is the object which keeps track of conversation state. It receives the info that a new message has come in.
The policy receives the current state of the tracker.
The policy chooses which action to take next.
The chosen action is logged by the tracker.
A response is sent to the user.

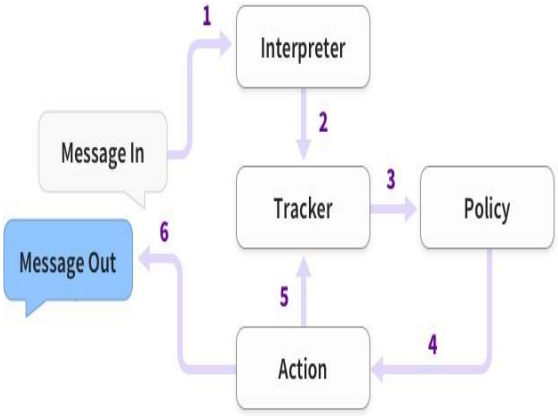
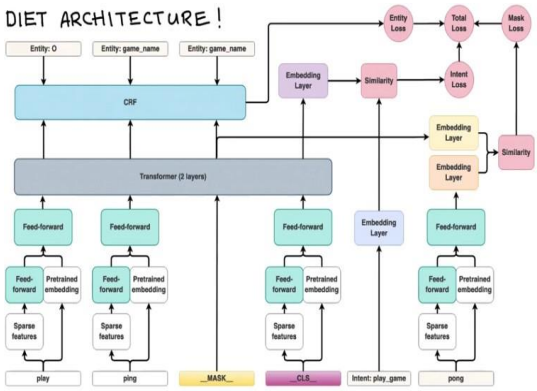


Figure 3.1: Basic Architecture Diagram of proposed system

RASA uses specific pipelines which we specify in the configuration JSON file for Entity extraction and intent recognition. The language and pipeline keys specify the components used by the model to make NLU predictions. The policies key defines the policies used by the model to predict the nextaction. When you run 'rasa train',the Selected Config feature will select a default configuration for the missing keys to train the model.
DIET is a multi-task transformer



architecture that handles both intent classification and entity recognition together. DIET uses a sequence model that takes word order into account, thereby offering better performance. It's also a more compact model with a plug-and-play, modular architecture.

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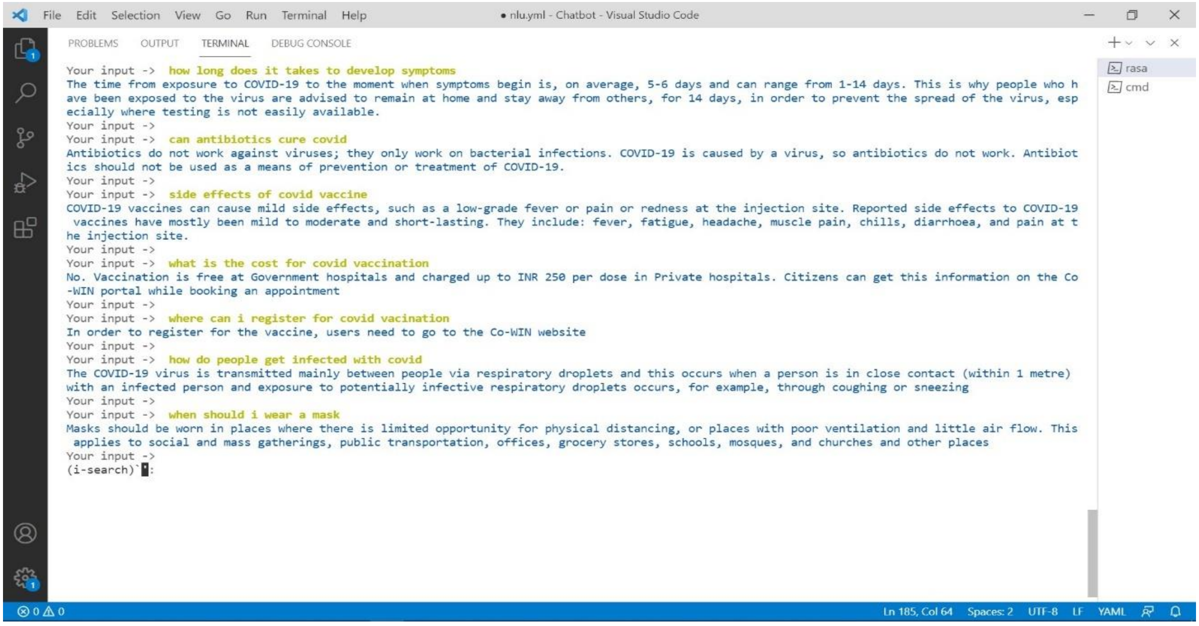
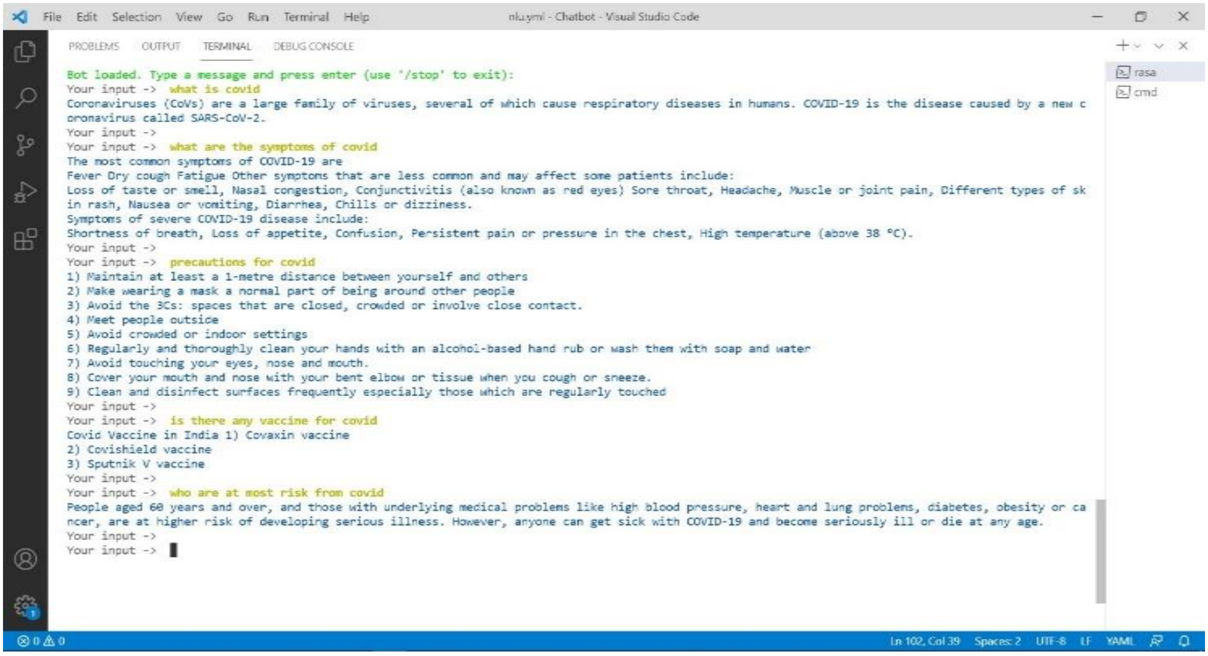
RESULT:

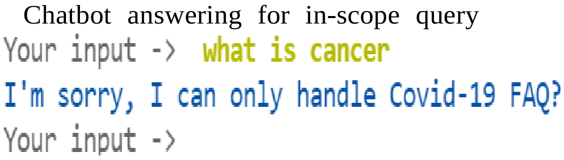


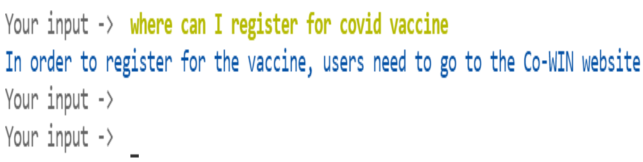
For instance, you can use DIET to do both intent classification and entity extraction; youcan also perform a single task, for example, configure it to turn off intent classification and train it just for entity extraction



Validation:

Chatbot answering for in-scope query





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CONCLUSION AND FUTURE ENHANCEMENTS:

We have successfully proposed a chatbot system to simulate a human conversation.This application presents sophisticated chatbot for users, especiallyduring unknown pandemics like COVID-19. The presented AI chatbot will have a large impact on patient life during serious epidemics. It would providethe advantage of putting access to virtual doctors into their hands.This chatbot gives text-based answers to the user queries.

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