Compulsory Task 2

Companies like Google and IBM are currently utilizing a cutting-edge technology known as natural language processing (NLP) based chatbots. These chatbots employ NLP techniques to comprehend and respond to user input, whether in the form of text or voice, in a conversational manner.

A notable example of this technology is Google's "Duplex" system, which was unveiled at the Google I/O conference in 2018. Duplex is an AI-powered system that engages in natural, human-like conversations with individuals over the phone. Its capabilities include completing tasks such as booking appointments, making reservations, and retrieving business information.

The primary advantage of employing the Duplex system or similar NLP-based chatbots is the automation of tasks that previously necessitated human involvement. Instead of personally calling a restaurant to make a reservation, users can simply instruct the Google Assistant, which will handle the entire process.

The inner workings of this technology are intriguing. When a user provides text or voice input, the chatbot employs NLP algorithms to analyse and comprehend the underlying meaning. It then formulates an appropriate response to the user's query or request, delivering it in the form of audio or text.

To accomplish this, chatbots like Duplex typically leverage a combination of technologies such as automatic speech recognition (ASR), natural language understanding (NLU), and text-to-speech synthesis (TTS). ASR converts spoken words into machine-readable text, while NLU identifies the intention behind the words and extracts essential information. Finally, TTS enables the chatbot to respond back to the user using a natural-sounding voice.

In conclusion, NLP-based chatbots like Duplex hold immense potential in various sectors, including customer service, healthcare, banking, and e-commerce. By automating mundane tasks, these chatbots can save time and resources for businesses while enhancing the overall user experience for customers.