

# Question Answering based Dialogue System in Punjabi: A Review

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**Abstract**— There are increasingly high advancements in natural language processing technology. An application of Natural Language Understanding (NLU), Question Answering based dialogue system is becoming major area of research for the researchers. Different queries are provided by the user in natural language for getting accurate answers in the Question Answering based Dialogue System. The Question Answering System provides perfect solution to retrieve valid and accurate answers to user questions asked in natural language instead of database query. Hindi, Punjabi, Telugu, Bengali and Tamil are popular languages that are spoken in India. According to Wikipedia Punjabi is the mother tongue of more than 130 million people around the world. Punjabi ranks 10th from top out of a total of 6,900 languages recognized internationally by the United Nations. A dialog system or conversational agent (CA) is a computer system intended to converse with a human, with a coherent structure. Dialog systems have employed text, speech, graphics, haptics, gestures and other modes for communication on both the input and output channel. Different Dialogue Systems have different architectures but they have same set of phases which are Input Recognition, Natural Language Understanding, Dialogue Management, Response Generation and Output Renderer. In this paper, we introduce first time a Question Answering based Dialogue System for Punjabi language. We will discuss the brief literature survey, dialogue flow and methodology of the system. We will also illustrate how computer understands the natural language text given by the user and reply back to the user in natural language text. The system has methodology of input of natural language text, separation of keywords and tokens, query analyzer, SQL query generation, response generation and dialogue manager. There are problems which evolved while developing the text-based question answering dialogue system because the understanding of natural language is very difficult task for the computer systems.

**Keywords**— Dialogue System, Natural Language Processing, Question-Answering, Dialogue Manager, Query Analyzer