Project Synopsis
on
STUDENT CHATBOT

Submitted as a part of course curriculum for

Bachelor of Technology
in
Computer Science

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DECLARATION

We hereby declare that this submission is our work and that, to the best of our knowledge and belief, it contains no material previously published or written by another person nor material which to a substantial extent has been accepted for the award of any other degree or diploma of the university or other institute of higher learning, except where due acknowledgement has been made in the text.

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CERTIFICATE

This is to certify that Project Report entitled "**STUDENT CHATBOT**" which is submitted by "**Sarthak Kesarwani and Titiksha"** in partial fulfilment of the requirement for the award of degree B. Tech. in Department of Computer Science of Dr A.P.J. Abdul Kalam Technical University, Lucknow is a record of the candidates own work carried out by them under my supervision. The matter embodied in this report is original and has not been submitted for the award of any other degree.

Date: 12-12-21 **Supervisor Signature**

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Last but not the least, we acknowledge our friends for their contribution to the completion of the project.

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ABSTRACT

The use of chatbots evolved rapidly in numerous fields in recent years, including Marketing, Supporting Systems, Education, Health Care, Cultural Heritage, and Entertainment. A chatbot in students Life can have a huge impact as it can solve a lot of problems of students related to academics, placement preparation activities, extracurricular activities going on in the college, as well as it saves a lot of time as now, they can get the answers of their queries within seconds by just sending a text. The system helps the student not only to get their queries answered but also to be updated with the college activities.

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1.1 INTRODUCTION

Cloud based student information Chatbot system is an artificial algorithm that analyzes the student's queries and messages. This system has a built artificial intelligence to answer the query of the student. The answers are appropriate to the user's queries, if the user find his answer to be invalid, he may select the invalid answer option button which will notify the admin. Admin can view invalid through portal via login. System allows admin to delete the invalid answer or to add a specific answer of that equivalent question. Here, the database will be stored into the azure cloud which will form a connection between application and cloud server via internet. To answer to the student query, the Chatbot system retrieves the answer from the database which is stored in the cloud. The Chatbot system uses a specific keyword to retrieve the answers from the database. There is no format for the student to follow while asking any question in the Chatbot. The students can put up any query related to college activities through the system.
The growth in chatbot technology has been as dynamic as the evolution of chatbot capabilities
Chatbots can be broadly categorized into three types. The three types are differentiated by their technical complexity, namely:

- Simple chatbot

  Simple chatbot have limited capabilities, and are usually called rule-based bots. They are task-specific.This means the bot poses questions based on predetermined options and the customer can choose from the options until they get answers to their query.

- Smart Chatbot

  AI-enabled smart chatbots are designed to simulate near-human interactions with customers. They can have free-flowing conversations and understand intent, language,and sentiment. These chatbots require programming to help it understand the context of interaction.
  They are much harder to implement and execute and need a lot of data to learn.

- Hybrid Chatbot

  They are the combination of simple and smart Chatbots.Both simple and smart Chatbots.

A chatbot is a program that communicates with you.It is a layer on top of, or a gateway to, a service. Sometimes it is powered by machine learning (the chatbot gets smarter the more you interact with it). Or, more commonly, it is driven using intelligent rules (i.e. if the person says this, respond with that).
The services a chatbot can deliver are diverse. Important life-saving health messages, to check the weather forecast or to purchase a new pair of shoes, and anything else in between.The term chatbot is synonymous with text conversation but is growing quickly through voice communication.

1.2 PROBLEM STATEMENT

- INSTANT HELP: The use of chatbot in education help students in getting instant reply and help for their queries
- INTERSTING AND INTERACTIVE: It helps to improve students engagement and helps to enhance the learning experience of students.
- Feedback:

- Students have to personally visit faculty or senior for their queries which is time taking and sometimes not even possible.
- Students sometimes doesn't know what all activities are going in their college.

1.3 OBJECTIVES

▶ The students will be able to resolve their queries related to

1. Academics
   - Attendance criterion
   - Tentative dates of internal and external examinations
2. College activities
   - Cultural events
   - Technical events
   - Seminars and webinars
3. Placement
   - Number of companies visiting for recruitment
   - Package (CTC) offered by them
   - Relevant links of the sources needed for their preparation

2. LITERATURE REVIEW

[1] The Use of Chatbots in Digital Business Transformation

SUMMARY: In this paper, the research on chatbots has gained momentum over the past few years. Academics and practitioners investigate how these tools for communication with customers or internal team can be improved in terms of their performance, acceptance, and deployment. Although there is a plethora of recent studies available, not all of them deal with the digital business transformation implications of chatbots. The main aim of the research presented in this paper was to conduct a systematic literature review of high-quality journal research papers in order to summarize the current state of research on chatbot, identify their role in digital business transformation and suggest the areas warranting further attention.

[2] JAICOB: A Data Science Chatbot

SUMMARY: The application of natural language to improve students' interaction with information systems is demonstrated to be beneficial. In particular, advances in cognitive computing enable a new way of interaction that accelerates insight from existing information sources, thereby contributing to the process of learning. This work aims at researching the application of cognitive computing in blended learning environments. We propose a modular cognitive agent architecture for pedagogical question answering, featuring social dialogue (small talk), improved for a specific knowledge domain.

[3] Intelligent Chatbot

SUMMARY: A Chat-bot is a software application used to conduct an online chat conversation via text or text-to speech, instead of providing direct contact with a live human agent. Designed to convincingly simulate the way a human would behave as a conversational partner. In the proposed system, we presented a chatbot that generates a dynamic response for online client's queries. The Proposed System is based on Artificial Intelligence-powered Chatbot. The web-based platform provides a vast intelligent base that can help simulate problem- solving for humans. This proposed chatbot identifies the user context which triggers the particular intent for a response. Since it is responding dynamic response the desired answer will be generated for the user.

[4] Personalized Chatbot Trustworthiness Ratings

SUMMARY: This article contains examples of offensive and abusive language as a necessary part of illustrating its research findings. In this article, we address a setting where a conversation agent, also known as a chatbot, cannot be modified and its training data cannot be accessed, and yet a neutral party wants to assess and communicate its trustworthiness to a user in a way that is tailored to the user's priorities over the various trust issues (such as bias, abusive language, information leakage, or inappropriate communication complexity). Such a rating can help users choose among alternative chatbots, developers test their systems, business leaders price their offerings, and regulators set policies.

[5] Multi-Modal Chatbot in Intelligent Manufacturing

SUMMARY: Artificial intelligence (AI) has been widely used in various industries. In this work, we concentrate on what AI is capable of doing in manufacturing, in the form of a chatbot. We designed a chatbot that helps users complete an assembly task that simulates those in manufacturing settings. In order to recreate this setting, we have users assemble a Meccanoid robot through multiple stages, with the help of an interactive dialogue system. Based on classifying users' intent, the chatbot is able to provide answers or instructions to the user when the user encounters problems during the assembly process. Our goal is to improve our system so that it can capture users' needs by detecting their intent and therefore provide relevant and helpful information to the user.

[6] Multi-Turn Response Selection for Chatbots With Hierarchical Aggregation

SUMMARY: Matching an appropriate response with its multi-turn context is a crucial challenge in retrieval based chatbots. Current studies construct multiple representations of context and response to facilitate response selection, but they use these representations in isolation and ignore the relationships among representations. To address these problems, we propose a hierarchical aggregation network of multi representation (HAMR) to leverage abundant representations sufficiently and enhance valuable information. First, we employ bidirectional recurrent neural networks (BiRNN) to extract syntactic and semantic representations of sentences and use a self-aggregation mechanism to combine these representations. Second, we design a matching aggregation mechanism for fusing different matching information between each utterance in context and response, which is generated by an attention mechanism.

[7] Advantages and Constraints of a Hybrid Model K-12 E-Learning Assistant Chatbot

SUMMARY: E-Learning has become more and more popular in recent years with the advance of new technologies. Using their mobile devices, people can expand their knowledge anytime and anywhere. E-Learning also makes it possible for people to manage their learning progression freely and follow their own learning style. However, studies show that E-Learning can cause the user to experience feelings of isolation and detachment due to the lack of human-like interactions in most E-Learning platforms. These feelings could reduce the user's motivation to learn. In this paper, we explore and evaluate how well current chatbot technologies assist users' learning on E-Learning platforms and how these technologies could possibly reduce problems such as feelings of isolation and detachment.

[8] Retrieval-Polished Response Generation for Chatbot

SUMMARY: Chatbot communication, in which a robot communicates with a human being in natural language in an open domain, has achieved significant progress. However, it still suffers from problems such as a lack of diversity and contextual relevance. In this paper, we propose a retrieval-polished (RP) model for response generation that polishes a draft response based on a retrieved prototype. In particular, we first adopt a prototype selector to retrieve a contextually similar prototype. Then, a generation-based polisher is designed to obtain a polished response.

3. METHODOLOGY

3.1 FLOW CHART

FIG.1

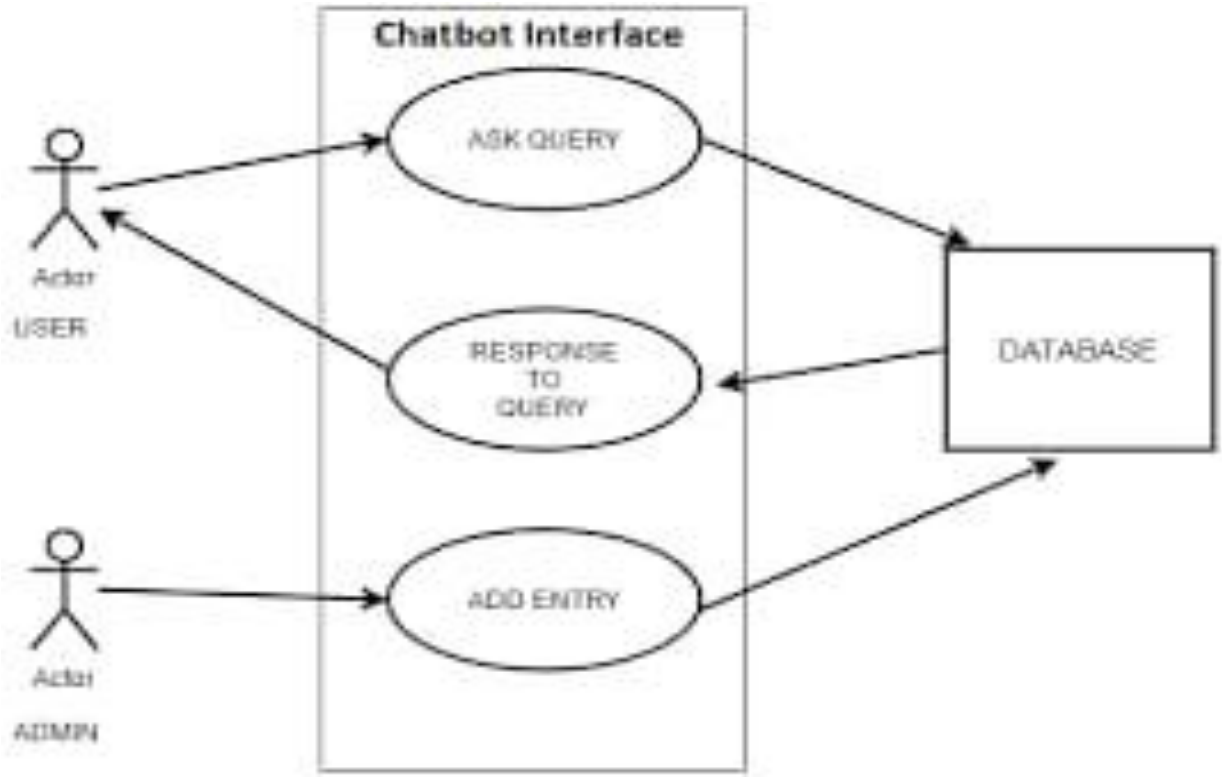

FIG.1: The above entity relationship diagram shows how a user interact with the chatbot.

OUTCOME

The outcome of our project will be a web application embedded with chatbot where a user can come any time and ask their queries and will get the response in return immediately.
Our model will be able to answer the following queries :

1. Academics
2. Attendance criterion
3. Tentative dates of internal and external examinations
4. College activities
5. Cultural events
6. Technical events
7. Seminars and webinars
8. Placement
9. Number of companies visiting for recruitment
10. Package (CTC) offered by them
11. Relevant links of the sources needed for their preparation

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