

# Development of Chatbot Automation Application – DGCT CSE ALEXA

B. Arunkumar<sup>[1]</sup>, A. Barath Balaji<sup>[2]</sup>, V. Giri Prasanth<sup>[3]</sup>, S. Barath Kumar<sup>[4]</sup>

<sup>1</sup> Assistant Professor, Department of Computer Science and Engineering, Dhirajlal Gandhi College of Technology, Tamilnadu, India

<sup>2,3,4</sup> Final Year Student, Department of Computer Science and Engineering, Dhirajlal Gandhi College of Technology, Tamilnadu, India

\*\*\*

**Abstract** - The project is about interaction between users and Chabot which can be accessed from anywhere anytime. The technology at the core of the rise of the Chabot is natural language processing ("NLP"). Most of the time, Students have to visit universities or colleges to collect various information like Tuition fees, Term Schedule, etc. during their admission process or as per their daily needs. Chabot provides various information related to university or college and also students-related information. The System analyses the question and then answers to the user. In this project, we provide the design of a chatbot, which provides a genuine and accurate answer for any query using Artificial Intelligence Markup Language (AIML) with python platform.

**Keywords:** Artificial Intelligence Markup Language (AIML), Pattern Matching, Chatbot, Flask Web-Framework.

## 1. INTRODUCTION

A chatbot is also known as an artificial conversational entity (ACE), chat robot, talk bot, chatterbot or chatterbox. Chatbots today, have become a lot more advanced since then, able to answer substantially complex queries and have expanded capabilities such as voice interaction and machine learning. Chat-bot for college management system project will be developed using artificial intelligence algorithms that will analyze users' queries. This system will be a web application which will provide answers to the analyzed queries of the user. Users will just have to select the category for queries and then ask the query to the bot that will be used for answering it. Users won't have to go personally to the college for inquiry. College-related activities such as annual day, sports day, Intake and other cultural activities. It will help the students/user to be updated about the college activities. Artificial Intelligence Markup Language (AIML) and Latent Semantic Analysis (LSA) are used for developing chatbots, which are used to define general pattern-based queries. Natural Language Processing is to understand the user's language and are intelligent enough to learn from conversations with their users.

## 2. Literature Survey

### Chatbot Using A Knowledge in Database-Human-to-Machine Conversation Modeling

Author: Bayu Setiaji, Ferry Wahyu Wibowo

In this research Chat-bots are mainly to used to provide conversation between both human and machine. Admin feeds some knowledge to the machine so that machine can identify the sentences and taking a decision itself as a response to answer a question. The chat used is actually Indonesian conversational pattern and the database used in this project is MySQL.<sup>[1]</sup>

### Designing a Chat-bot that Simulates a Historical Figure

Author: Emanuela Haller

This paper presents a method for building a chat-bot that can simulate a historical figure. The can receive as "input" a plain text or a web page about the historical figure and has as "output" a trained conversational agent which is able to answer all kind of questions about the life experience of that specific person.<sup>[2]</sup>

### Chatbots: Are They Really Useful?

Author: Bayan Abu Shawar, Eric Atwell

The paper is basically focused on an academic paper highlighting some case studies and including a brief history of chatbots that extends back to the earliest experiments such as ELIZA (c. 1966). The paper is based on making a chatbot using AIML patterns with ALICE.<sup>[3]</sup>

### An e-business chatbot using AIML and LSA

Author: N. Thomas

In this paper, Thomas T provided the way by which the chatbot is planned in a manner that for a single template, it gives irregular responses. LSA based inquiries are giving the right reactions to random responses.<sup>[4]</sup>

### 3. PROPOSED SYSTEM

This system helps the student to be updated about the college activities. Question and answer are stored in the database so that whenever such questions will be asked so that they get answered directly from the database. In various websites, users are not able to find the required information on website which in turn end up closing the websites, which can be fulfilled by using chatbot.

Once the bot-user types in the query in the chatbot, the AIML developed chatbot will identify the category that contains the query pattern. Here the bot-user is expected to type in the query in a predefined pattern. Once the query pattern is matched, the template of the category that contains the response is sent back to the bot-user.

### 4. ARTIFICIAL INTELLIGENCE MARKUP LANGUAGE

AIML files are a subset of Extensible Mark-up Language (XML) that can store different text patterns in the form of tags. AIML is mainly used to implement Chatbots, a natural language software agent in which a user can ask questions to the robot and it can give an intelligent reply. This same technique is used in Chat Bot. Using speech recognition, the robot gets input text from the user and an AIML interpreter; a software program that can interpret AIML files and retrieve an intelligent reply from the AIML dataset. The reply will be converted to speech. It has a class of data object called an AIML object that describes the behavior of computer programs. It consists of units or tag called topics and categories. In AIML, categories are basic units of knowledge. There each category consists of a pattern that contains input and template which contain the answer of chatbot based on queries. To build a Chatbot, mainly a flexible, easy to understand and universal language is needed which will be AIML. AIML, a derivative of XML, is one of the widely used approaches that satisfy the requirements based on general queries. AIML represents the knowledge put into Chatbots and is based on the software technology developed for A.L.I.C.E. (the Artificial Linguistic Internet Computer Entity). It has the ability to characterize the type of data object and describe partial conductance of the programs that it processes. These objects consist of two units: topics and categories. Thus, the data contained in these categories are either parsed or unparsed.

The main purpose of the AIML language is to simplify the job of conversational modeling, in a "stimulus-response" process is shown in Fig4.1. It is also a mark-up language based on XML and depends on tags which are the identifiers that make snippets of codes to send commands into the Chatbot. The data object class is defined in AIML as an AIML object, and the responsibility of these objects is modeling conversational patterns.



Fig 4. 1 AIML

The data object class is defined in AIML as an AIML object, and the responsibility of these objects is modeling conversational patterns. Each AIML object is the language tag that associates with a language command using patterns. The general structure of AIML objects is put forward by List of parameters the most important object among the AIML objects is category, pattern, and template. The task of the category tag is defining the various patterns and their answer based templates. The pattern tag identifies the input from the user and the task of template tag is to respond to the specific user input, these are the most frequent tags and the bases to design AIML Chatbots with an intelligent response to natural language speech conversations.

### 5. SYSTEM DESIGN

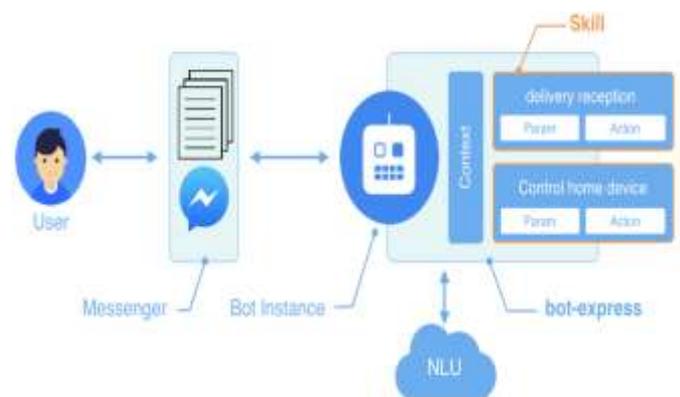


Fig 5. 1 System Architecture

A chatbot is a computer program, which is designed to simulate a conversation with human users using patterns, especially over the internet. They are our online assistants that offer different services through chatting over the internet is shown in Fig 5.1 . To build artificial intelligence chatbots through Python, you will require an AIML package (Artificial Intelligence Markup Language). First, we need to create a standard startup file without any pattern and load aiml b in the kernel. Add random response patterns that would make dialogue interesting.

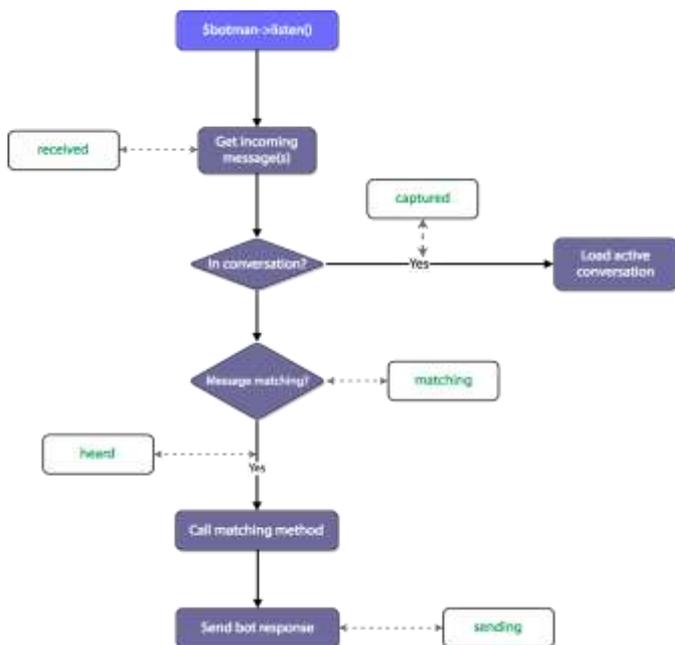


Fig 5. 2 System Flow

Now, to code your own AIML files, look for some files which are available beforehand. For example, browse all among files from the Alice Bot website. The startup file we will be creating will act as a separate entity. As a result of which, we will have more AIML files without a source code modification is shown in Fig 5.2. The program will start running when there are enough AIML files for loading. This was an introduction to how to make AI chatbot using Python. Now, let's proceed further and see which particular library can be implemented for building an AI Chatbot.

### 6. Implementation



Fig 6. 1 HTML

HTML is used to create electronic documents (called pages) that are displayed on the World Wide Web. Each page contains a series of connections to other pages called hyperlinks.

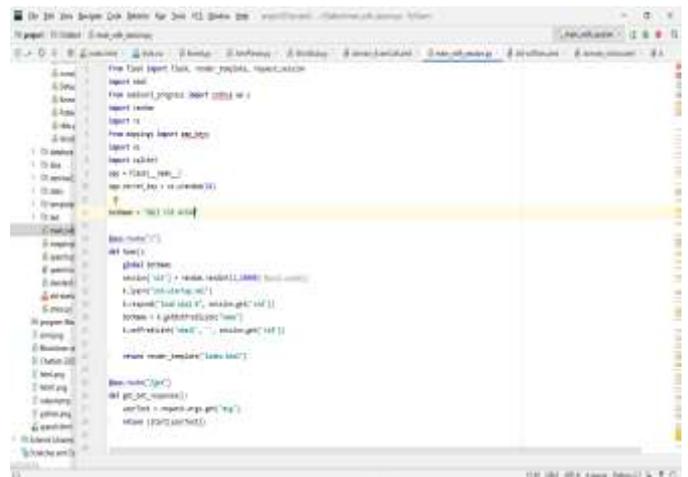


Fig 6. 2 PYTHON

Python is a general purpose and high level programming language. You can use Python for developing desktop GUI applications, websites and web applications. Also, Python, as a high level programming language, allows you to focus on core functionality of the application by taking care of common programming tasks.



Fig 6. 3 OUTPUT

Thus, the “Development of Chatbot Automation Application – DGCT CSE ALEXA” was successfully executed

### 7. Conclusion

Chatbots are being made to ease the pain that the industries are facing today. The purpose of chat bots is to support and scale business teams in their relations with customers.

## 8. REFERENCES

- [1] Bayu Setiaji, Ferry Wahyu Wibowo, Department of Informatics Engineering STMIK AMIKOM Yogyakarta, Yogyakarta, Indonesia, 2166-0670/16 \$31.00 © 2016 IEEE "Chatbot Using A Knowledge in Database-Human-to-Machine Conversation Modeling".
- [2] Emanuela Haller, Traian Rebedea Faculty of Automatic Control and Computers university Politehnica of Bucharest, 978-0-7695-4980-4/13 \$26.00 © 2013 IEEE. "Designing a Chat-bot that Simulates a Historical Figure".
- [3] Bayan Abu Shawar and Eric Atwell, 2007 "Chatbots: Are they Really Useful?"
- [4] N. Thomas, "An e-business chatbot using aiml and lsa," in Advances in Computing, Communications and Informatics (ICACCI), 2016 International Conference on. IEEE, 2016, pp. 2740–2742.