

PROFESSIONAL TRAINING REPORT
at
Sathyabama Institute of Science and Technology
(Deemed to be University)

Submitted in partial fulfillment of the requirements for the award of
Bachelor of Technology in Information Technology

By

Vinayak ranjan
REG. NO. 38120091



DEPARTMENT OF INFORMATION TECHNOLOGY

SCHOOL OF COMPUTING

SATHYABAMA INSTITUTE OF SCIENCE AND TECHNOLOGY
JEPPIAAR NAGAR, RAJIV GANDHI SALAI,
CHENNAI – 600119, TAMILNADU

- Setting up the CakeChat Chatbot Server locally
- Since Chatbot is the main part of the project, we would be setting up the Chatbot first. This part alone would give you a strong understanding of the project.
- In this milestone, you need to install Cakechat Chatbot from this GitHub Repository.
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- Load the pre-trained model by following the steps specified
- Run and test the Cakechat Server as specified

NOVEMBER 2021



SATHYABAMA
INSTITUTE OF SCIENCE AND TECHNOLOGY
(DEEMED TO BE UNIVERSITY)

Accredited with Grade “A” by NAAC

(Established under Section 3 of UGC Act, 1956)

JEPPIAAR NAGAR, RAJIV GANDHI SALAI

CHENNAI– 600119

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DEPARTMENT OF INFORMATION TECHNOLOGY

BONAFIDE CERTIFICATE

This is to certify that this Project Report is the bonafide work of Vinayak ranjan **(Reg. No: 38120091)** who carried out the project entitled “**Chatbot song recommendation api**” under my supervision from June 2021 to November 2021.

Internal Guide

Name of the Guide :P.Jeyanthi mam

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Head of the Department

Submitted for Viva voce Examination held on 26-11-2021

Internal Examiner

P.Jeyanthi mam

External Examiner

DECLARATION

I, **Vinayak ranjan** hereby declare that the project report entitled **FAST Application Using Microsoft Cognitive Services** done by me under the guidance of **Dr. P.Jeyanthi mam** is submitted in partial fulfillment of the requirements for the award of Bachelor of Engineering Degree in Computer Science and Engineering.

DATE:

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PLACE: Chennai

SIGNATURE OF THE CANDIDATE : Vinayak ranjan

ACKNOWLEDGEMENT

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I am pleased to acknowledge my sincere thanks to **Board of Management** of **SATHYABAMA** for their kind encouragement in doing this project and for completing it successfully. I am grateful to them.

I convey my thanks to **Dr. T. Sasikala M.E., Ph.D, Dean**, School of Computing, **Dr. R. Subhashini, M.E., Ph.D. Head of the Department of Information Technology** for providing me necessary support and details at the right time during the progressive reviews.

I would like to express my sincere and deep sense of gratitude to my Project Guide **Dr. P.Jeyanthi mam M.E., Ph.D.**, for her valuable guidance, suggestions and constant encouragement paved way for the successful completion of my project work.

I wish to express my thanks to all Teaching and Non-teaching staff members of the **Department of Information Technology** who were helpful in many ways for the completion of the project.

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TRAINING CERTIFICATE

CERTIFICATE OF COMPLETION

This is to certify that

VINAYAK RANJAN

successfully completed

4 Studies and 1 Dojo in the

PHP Course

This course covers the fundamentals of
PHP for web development.

Certificate URL: pragate.com/course_certificate/ectce7a5gpp8wd



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ABSTRACT

- THE PURPOSE OF CHATBOTS IS TO SUPPORT AND SCALE BUSINESS TEAMS IN RELATION WITH CUSTOMERS.IT COULD LIVE IN ANY MAJOR CHAT APPLICATIONS LIKE FACEBOOK,TEXT MESSAGES,ETC.
- CHATBOT APPLICATIONS STREAMLINE INTERACTIONS BETWEEN PEOPLE AND SERVICES,ENHANCING CUSTOMER SERVICES.AT THE SAME TIME,THEY OFFER COMPANIES NEW OPPORTUNITIES TO IMPROVE CUSTOMER ENGAGEMENT PROCESS AND OPERATIONAL EFFICIENCY BY REDUCING THE TYPICAL COST OF CUSTOMER SERVICE THIS PROJECT FOCUS ON BUILDING A CUSTOM CHATBOT THAT WILL BE FUNDAMENTAL STEP OF LEARNING CURVE OF BUILDING OWN PROFESSIONAL CHATBOTS WHICH CUSTOMIZE WEIRD TIRED OLD CHAT BOTS OUTTHERE IN WORLD,DIFFERENT FROM CHATBOTS OF BUISNESS PURPOSES AS EXTENSIVE CHATBOTS SERVICE WHICH TALKS TO YOU

Automation is a necessity in the current times as it makes processes more economical and affordable in the long run. It also frees humans from performing banal tasks day in and day out. Once a process is automated the only check that is to be performed is whether it is turned on or not. Automated processes are not prone to errors and even if an error is identified rectification is easy and can be applied system wide without any delay.

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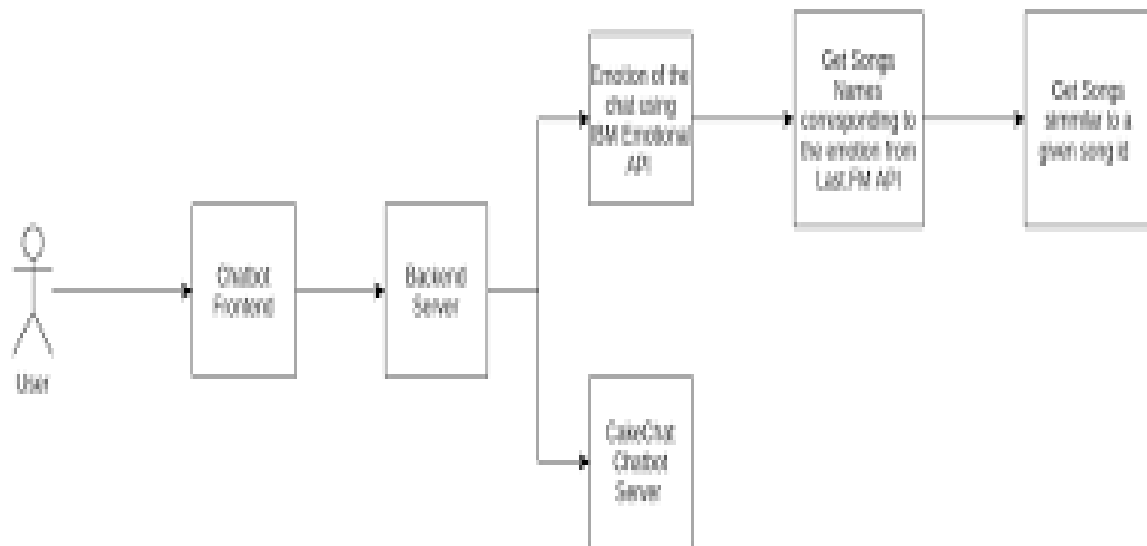
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LITERATURE REVIEW

LIST OF FIGURES

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author	year	description	Pro	cons
Emanuela Haller and Traian Rebedea,	2017	Chat bots using Ibm api	Mobile to computer	Internet security
www.tutorialspoint.com.	2018	Song recommend chatbot api	Real api chatbot	advanced



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Methods and Algorithms

- Setting Up the IBM Tone Analyzer API
- In this milestone, we would be setting up the IBM Tone Analyzer API so that we can analyze the tone of conversation (emotions). We are using an API here as we don't have that enough data, computational power and time to create our own model API. This milestone will make you realise why to prefer using open-source APIs rather than creating your own models each time.
- Check this website to have an idea of what IBM Tone Analyzer API would be doing.
- Create an account on IBM Cloud (It's free)
- Enable the Tone Analyzer Service for your account
- Try running the Python code for analyzing the conversation from here and don't forget to replace {apikey} and {url} with the apikey and url you received by enabling Tone Analyser Service for your account.
- Proposed work-
- A Student best project is built practice artificial algorithms that analyzes user's queries and understand user's message. this method is also a web application that has answer to the question of the scholar.
-
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-
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-
- For chat bot tone analyzer api

Proposed System

- COMBINING MULTIPLE SERVICES AND OPEN-SOURCE TOOLS TO MAKE A CHATBOT THAT RECOMMENDS SONGS BASED ON TONE OF CONVERSATION WHICH THE USER IS HAVING WITH CHAT BOT
- LITERATURE STUDY. Emanuela Haller and Traian Rebedea, "Designing a Chat-bot that Simulates Associate in Nursing Historical Figure", IEEE Conference Publications, July 2013. There are many applications that are incorporating a personality's look and meaning to simulate human dialog, but in most of the cases information [the knowledge | the data] of the informal animate being is held on in an exceedingly very info created by a personality's specialists. However, solely a couple of researches have investigated the conception of constructing a chat-bot with an artificial character and temperament starting from websites or plain text some of certain person. Maja Pantic, Reinier Zwitserloot, and Robbert New Style calendar month Grootjans, "Teaching
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Introductory engineering practice Asimple Agent Framework”, IEEE Transactions On Education, Vol. 48, No. 3, August 2005. This paper describes a flexible technique of teaching introductory engineering (AI) using a completely unique, Java-implemented, simple agent framework developed specifically for the wants of this course.

PROJECT CONTEXT

ENVIRONMENTAL REQUIREMENTS

Requirements Hardware Requirement: Min i3 Processor Based Computer Min 4GB-Ram Hard Drive Storage Monitor Software Requirement: Microsoft Visual Basis WWindows 7 Anaconda Jupyter Notepad Python Compiler security

Architecture and Module- Pattern Matching Bots utilize pattern matches to group the text and it produces an appropriate response from the clients. “Artificial Intelligence Markup Language” (AIML), is a standard structured model of these Patterns. For every

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sort of question, a remarkable pattern must be accessible in the database to give a reasonable response.

Natural Language Processing (NLP) NLU has three specific ideas as follows:

- Entities:** This basically represents a thought to your chatbot. For instance, it's going to be a payment system in your E-commerce chatbot.
- Context:** Once a tongue understanding algorithmic program examines a sentence, it doesn't have the historical scene of the user's text language. This means that, if it gets a response to an issue it's been recently asked, it won't recall the inquiry. So, the phases throughout the language of chat square measure one.
- Lemmatization:** A small variant of stemming is lemmatization. The key distinction between these is, that, stemming will typically produce non-existent words, whereas lemmas are actual words.

Feasibility study is the test of a system proposal according to its workability, impact on the organization, ability to meet user needs, and effective use of resources.

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CHATBOT APPLICATIONS STREAMLINE INTERACTIONS BETWEEN PEOPLE AND SERVICES, ENHANCING CUSTOMER EXPERIENCE. AT THE SAME TIME, THEY OFFER COMPANIES NEW OPPORTUNITIES TO IMPROVE THE CUSTOMERS ENGAGEMENT PROCESS AND OPERATIONAL EFFICIENCY BY REDUCING THE TYPICAL COST OF CUSTOMER SERVICE. THIS PROJECT IS FOCUSSED ON BUILDING A CUSTOM CHATBOT THAT WILL BE YOUR FUNDAMENTAL STEP OF THE LEARNING CURVE OF BUILDING YOUR OWN PROFESSIONAL CHATBOTS.

-

BUT YOU MUST BE TIRED OF THE WEIRD CHAT BOTS OUT THERE IN THE WORLD WHICH ARE MADE FOR MAINLY BUSINESS PURPOSES? IN THIS PROJECT, WE WOULD BE BUILDING AN EXTENSIVE CHATBOT SERVICE, TO WHICH YOU CAN TALK TO. AND TALKING TO A CHATBOT WOULDN'T BE BUSINESS-DRIVEN. IT WOULD JUST BE CASUAL CONVERSATIONS. FURTHER, ON TOP OF IT, THE CHATBOT WOULD ALSO BE RECOMMENDING SONGS TO THE USER BASED ON THE TONE OF THE

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USER. THIS SONG RECOMMENDATION FEATURE EMPLOYS THE USE OF [LASTFM](#) API, VERY MUCH SIMILAR TO THE POPULAR SPOTIFY API. ALSO FOR TONE/EMOTION ANALYSIS OF THE CONVERSATION WE WILL BE USING THE IBM TONE ANALYZER

- COLLABORATING WITH THESE TYPES OF APIS IS VERY MUCH CRITICAL AS IN TODAY'S WORLD THE POPULAR CHATBOTS DO MUCH MORE THAN SIMPLY HAVING A DATA-DRIVEN CONVERSATION; TO SUPPLEMENT ADDITIONAL USER-ORIENTED FEATURES. ALSO THE REASON TO CHOOSE PYTHON TO BUILD THE CHATBOT IS BECAUSE PYTHON BOASTS A WIDE ARRAY OF OPEN-SOURCE LIBRARIES FOR CHATBOTS, INCLUDING SCIKIT-LEARN AND TENSORFLOW. IT IS GREAT FOR SMALL DATA SETS AND MORE SIMPLE ANALYSES; ALSO PYTHON'S LIBRARIES ARE MUCH MORE PRACTICAL.

System Approaches

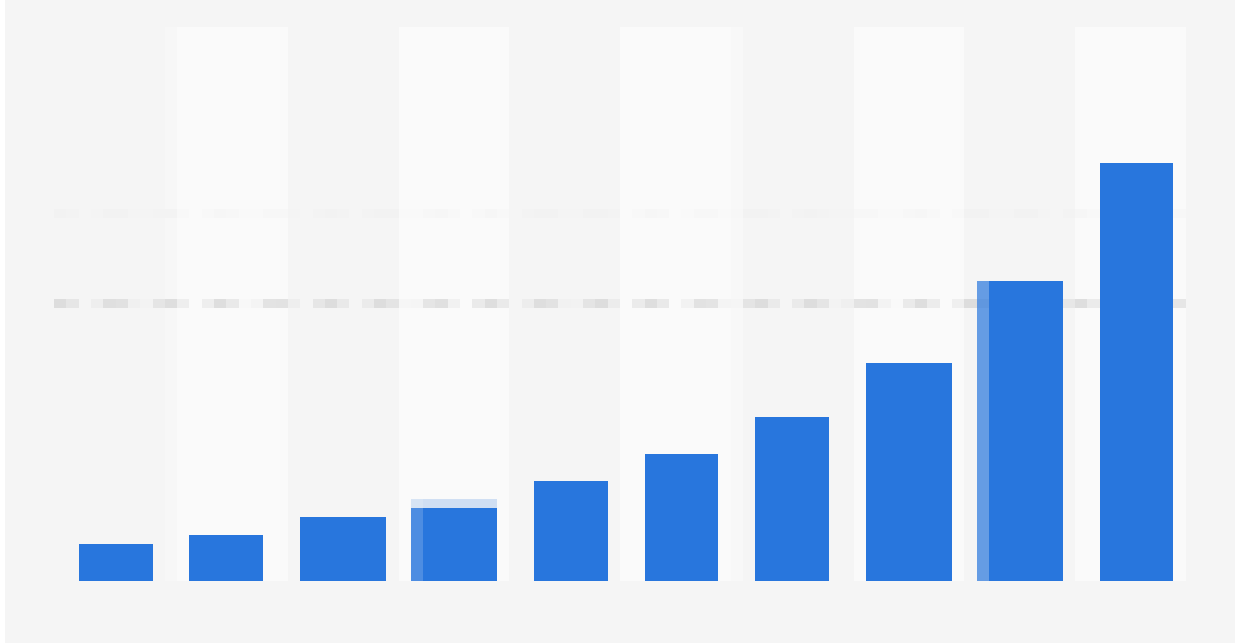
- High-Level Approach
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- User starts the conversation
- Emotional Analysis of the conversation is done using the IBM Emotional API
- Get the reply to the conversation from the Cake chat Chatbot
- Based on the Emotion which the app perceives, top songs are retrieved using Last.fm songs API
- If a user listens to a particular song for sometime, a similar song would be recommended to the user using Last.fm API.
- Primary goals
- Setting up an open-source project locally and handling the errors being faced
- Using multiple services to build up a new service over them.
- Having a real-world chatbot, to which you can literally chat like you chatting to a real person and enjoying the music recommended by the system.

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• SURVEY TABLE

SURVEY TABLE



SETTING UP LAST.FM SONGS API AND TESTING IT

- IN THIS MILESTONE, WE WOULD BE SETTING UP THE LAST.FM SONGS API SO THAT WE CAN RECOMMEND SOME SONGS TO THE USER BASED ON THE TONE/EMOTION OF THE USER. WE ARE USING AN API HERE AS WE DON'T HAVE ENOUGH DATA, COMPUTATIONAL POWER AND TIME TO SCRAPE THE WEB FOR
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SONGS BASED ON THE SPECIFIC
INFORMATION OF TONES WE HAVE
EXTRACTED PREVIOUSLY.

- CREATE API ACCOUNT ON LAST.FM FROM
HERE AND GET THE API_KEY
 - TEST THE FOLLOWING API'S FEATURES WITH
THE HELP OF YOUR API_KEY
 - GETTING TOP 5 SONGS OF A PARTICULAR
TAG
 - GETTING SIMILAR SONGS RELATED TO A
SONG
 - Understanding the overall process involved in
the chatbot's working
 - Once we are done with this milestone, we would
be having a very good understanding of the
complete project architecture. Further, after
this, you can take this project in a new direction
after this milestone. Completing this milestone is
critical as there are a lot of components that
need to be integrated together to complete the
-
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chatbot; having a clear sense of product architecture is needed here.

- - User starts the conversation
- - Emotional Analysis of the conversation is done using the IBM Emotional API
- - Get the reply to the conversation from the Cakechat Chatbot
- - Based on the Emotion which we got, top songs are retrieved using Last.fm songs API
- - If a user listens to a particular song ... a similar song to that song would be recommended to the user using Last.fm API.
- We would be implementing this approach manually to get started right away by building the chatbot in the next milestone.

Let's start the conversation with a good mood tone:

Hey there!! What's up? How's the day?

Now let's send this text for Emotional Analysis. And we get the following response:

```
SOURCE CODE: {
```

```
"document_tone": {
```

```
"tones": [
```

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```

        {
            "score": 0.66525,
            "tone_id": "joy",
            "tone_name": "Joy"
        }
    ]
},

"sentences_tone": [
    {
        "sentence_id": 0,
        "text": "Hey there!! What's up?",
        "tones": []
    },
    {
        "sentence_id": 1,
        "text": "How's the day?",
        "tones": []
    }
]
}

```

Now send the request to the chatbot server with the emotion of chatbot using the following mapping:

```

{
    "anger": "anger",
    "fear": "sadness",

```

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```

    "joy": "joy",
    "sadness": "sadness",
    "analytical": "neutral",
    "confident": "neutral",
    "tentative": "neutral"
  }

```

Why this mapping? Because the Cakechat chatbot supports conversation in limited emotions only.

Just wondering... how can you have an analytical conversation? ... but still, you can have an analytical tone ... Therefore we are mapping Analytical tone to Neutral conversation.

So, using the above mapping we would be talking to the server.

Now, send the request to the cakechat server with the conversation and the emotion of the chat.

Request:

```

{
  "context": [
    "Hey there!! What's up? How's the day?"
  ],
  "emotion": "joy"{
    "tracks": {
      "track": [
        {...},
        {...}
      ],
      "@attr": {
        "tag": "analytical",

```

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```

        "page": "1",

        "perPage": "5",

        "totalPages": "1",

        "total": "2"

    }

}

}

```

You would have seen here also that we were only able to find 2 songs corresponding to the analytical tag. So, instead of using the tags returned by the Emotional API, we can map them using the mapping defined earlier above.

Now, once a user would click on a particular song, we also need to recommend similar songs to that particular song. This can also be done using the last.fm'

REFERENCES

, “Designing a Chat-bot that Simulates an Historical Figure”, IEEE Conference Publications, July 2013. Maja Pantic, Reinier Zwitserloot, and Robbert Jan Grootjans, “Teaching Introductory Artificial Intelligence Using A simple Agent Framework”, IEEE Transactions On Education, Vol. 48, No. 3, August 2005. Bird, "NLTK: the natural language toolkit." pp. 69-72, 2006. Accenture. 2017. At Your Service: Embracing the Disruptive Power of Chatbots. Dublin: Accenture. Ubisend. 2017. 2017 Chatbot Survey: We now live in an on-demand society, time to get prepared. Norwich: Ubisend. Anon, (2016). [online] Available at: https://www.chatbots.org/ai_zone/ [Accessed 11 Dec. 2016]. Foundation, A. (2016). AIML - The Artificial Intelligence Markup Language. [online]

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Emanuela Haller and Traian Rebedea

FUTURE ENHANCEMENT Our future work involves the further development of methodologies for handling contextual data, behavioral monitoring based on user-to-system interactions, and appropriate methods for the collaborative filtering of information and discovery of patterns. In particular, we aim to provide a bot that will have answer within no time and will have a user friendly interface. In our future work, we intend to carry on bot-based experiments to further verify the effectiveness of the proposed framework. In addition we will try to add extra security to the backend server such that the

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- Create a virtual environment of python-3.
- Fork and Clone the GitHub repository onto your local machine.
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database can be strictly accessible to only the authorized personnel

CONCLUSION :

The main objectives of the project were to develop an algorithm that will be used to identify answers related to user submitted questions. To develop a database where all the related data will be stored and to develop a web interface. The web interface developed had two parts, one for simple users and one for the administrator. A background research took place, which included an overview of the conversation procedure and any relevant chat bots available. A database was developed, which stores information about questions, answers, keywords, logs and feedback messages. A usable system was designed, developed and deployed to the web server on two occasions. An evaluation took place from data collected by potential students of the University. Also after received feedback from the first deployment, extra requirements were introduced and implemented.

Therefore,

The project to implement chatbot tone analyzer api in

User system with cloud storage ibm api is conducted successfully

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