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Student Assistant: Bot Acting as a Students Personal Assistant

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Abstract: ***Chat-bots assistant area of computer programs coded to possess a matter or verbal spoken language that is logical or intelligent. Chat-bots area unit designed to create humans believe that they're reprimand a human; however instead they're actually reprimand a machine. Taking advantage of this transparency property of chat-bot, a man-made character and temperament may be given to a chat-bot that acts sort of a person of a particular profession. This paper describes AN approach the concept of implementing "STUDENT ASSISTANT" a larva can solve several issues associated with students studies or teachers. The necessary options of this project is, when the required or necessary info from the students WhatsApp group (like-examdate's, result, faculty raise something etc) it'll cue the scholars if they are doing not seen the message. Chatbot helps the scholars in fixing schedule and adding them within the calendar. And conjointly it helps as a pursuit engine.***
Keywords: Chat-bot, AIML, python, Artificial Intelligence, Machine Learning, GoogleAPI,

I. INTRODUCTION

A student assistant chatbot in any case referred to as a student helper, chatterbot, or a synthetic colloquial Entity. Chatbot could be a computer program that produces you bestow through messages. they're wished to imitate human lead. they will imitate unambiguously however a personality's would go in all probability as a colloquial accent. Chabot assistant may well be a machine that acts with the human and it provides answer to the various disadvantage of human in its domain.

The most natural definition of a chatbot or smart assistant is – a developed a program that will have a discussion/conversation with somebody's. Alexa unit of measurement typically instances of catboat assistant. What's extra, Facebook has detached messenger, making it not entirely Associate in Nursing application still a stage whereupon designers can fabricate a full Chabot framework. Face book messenger offers over the thirty thousand chatbots and it likewise remains as their principle territory.

Catboat assistant have a significant potential for execution in bespoken company records on each web-based media stages. Catboats unit of measurement meant to be a definitive menial helper, aiding you with achieving entirely completely different errands going from responding to queries, getting driving bearings, turning up the indoor regulator in your savvy home, or play your #1 tunes Associate in Nursing even draft Associate in Nursing inquiry and answer outline.

Catboats assistant unit of measurement being created to facilitate the agony that the business is try lately. The motivation behind catboats is to help tons to scale business groups in their relationship with purchasers and shoppers at an equivalent time.

II. OVERVIEW

A. Existing System

There area unit some current frameworks from that creating a utilization of chatbot assistant (virtual individual associate) was motivated.

A. L.I.C.E. one all told the foremost noted chatbot assistant that chips away at Pattern Matching Strategy is that the bogus Linguistic web laptop Entity (A.L.I.C.E.) . The AIML records for A.L.I.C.E. unit of measurement accessible on-line that contain classes like music, attainment, reasoning, thus forth so for the essential operative of our chatbot, these AIML documents unit of measurement getting used. to boot, another distinctive AIML record for the class "Gatherings" has been created, that answers specific meeting connected queries. Thus, as a result of the project concentrates further towards the programming module, AIML files unit of measurement being used for the pattern matching framework of assistant chatbot.

B. Proposed System

Student assistant whatsapp chatbots that creates interactions between human and machines exploitation linguistic communication doable. From literature, we have a tendency to known that generally, chatbot square measure functions sort of a typical program. though chatbot simply created just one output rather than multiple outputs/results, the fundamental method flow is that the same wherever when AN input is entered, the new search are going to be done. Nothing associated with previous output. This analysis is targeted on sanctioning chatbot/smart assistant to become a quest engine which will method ensuing search with the respect to the previous search output.

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In chatbot/smart assistant context, this practicality can enhance the aptitude of chatbots/smart assistant input process. In decide to augment the standard mechanism of chatbot/assistant processes, we have a tendency to used the electronic information service model approach to revamp the design of chatbot/smart assistant in an exceedingly whole in addition as incorporated the formula of Extension and necessity (our planned algorithm). By exploitation this style, we have a tendency to had developed and tested Virtual polygenic disorder medical man (ViDi), a web-based statement toolAssistant that operate in specific domain of polygenic disorder education. Extension ANd necessity enabled relations between responses that considerably create it easier for student to induce vital monosodium glutamate with Assistant/Chabot exploitation a similar approach as chatting with an actual human. Assistant/Chatbot will provide totally different responses from a similar input given by user consistent with current spoken language issue. This can be the extended version of the first whatsapp and check out take action by its own .We created student assistant chatbot exploitation whatsapp and attempting to unravel the additional of student use case rather then general user. Student assistant chatbot helps the students in fixing schedule and adding them within the calendar. And conjointly it helps as a quest engine. Student Assistant a bot project is built using **selenium tool** using python language that analyzes user's queries and understand only important user's message and revert back to give notification and take action. This System is a command line tool which provides answer to the query of the student.

III. COMPLETE WORK PLAN LAYOUT

A. Pre-processing

The preprocessing is just separating the disentangled info before examination. It incorporates distinctive and eliminating non-literary substance and substance that's immaterial to the zone of study from the knowledge. Of all info, text is that the most unstructured structure therefore implies we've plenty of cleanups to try and do. These pre-preparing steps facilitate convert clamor from high dimensional highlights to the low dimensional house to amass but abundant precise information as may well be expected from the content.

Preprocessing info will comprise of diverse suggests that relying upon the knowledge and also the circumstance.

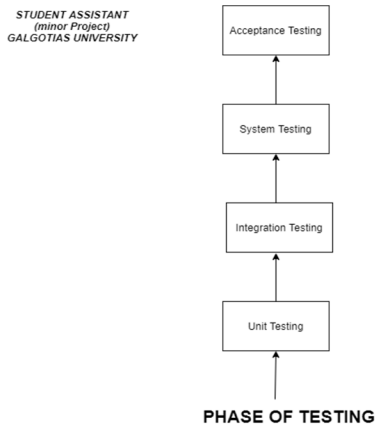
Some of them are:

1) Tokenization
2) Stopwords
3) Normalization
4) Casing the character
5) Negation handling
6) Removing

B. Testing

The pre-processing is simply separating the disentangled data before examination. It incorporates distinctive and eliminating non-literary substance and substance that is immaterial to the zone of study from the data. Of all data, text is that the foremost unstructured structure so implies we've many cleanup to do and do. These pre-preparing steps facilitate convert clamour from high dimensional highlights to the low dimensional house to amass however ample precise info as may perhaps be expected from the content.

Pre-processing data can comprise of various suggests that relying upon the data and conjointly the circumstance.



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1) *Unit Testing:* The objective of unit testing is to isolate each bit of the program and show that singular components are right as way as stipulations and utility.
2) *Integration Testing:* The testing of joined items of Associate in Nursing application to make a decision whether or not they work effectively along is Integration attempting. This testing ought to be potential by utilizing 2 distinct ways.

a) *Top down Integration testing:* In top-down reconciliation testing, the foremost elevated level modules ar tried initial and afterwards logically lower-level modules ar tried.

b) *Bottom-up Integration testing:* Testing is performed starting from littlest and least level modules and continued every successively. At the purpose once base level modules area unit

Tried thought goes to those on the subsequent level that utilization the lower level
Ones they're tried severally and later connected with the beforehand analyzed lower level modules.

3) *System Testing:* This is the subsequent level within the testing and tests the framework as an entire.Once all the segments square measure incorporated, the appliance generally is tried completely to ascertain that it satisfies Quality pointers.
4) *Acceptance Testing:* The primary motivation behind this Testing is to find whether or not application meets the expected details and fulfils the customer's conditions. we are going to follow 2 distinct ways during this testing.

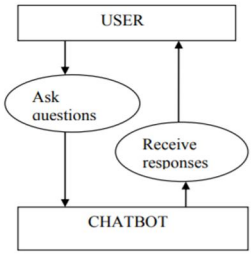
a) *Alpha Testing:* This take a look at is that the primary part of testing and can be performed among the teams. Unit testing, combination testing and framework testing once consolidated square measure referred to as alpha testing. throughout this stage, the incidental to are going to be tried within the application:

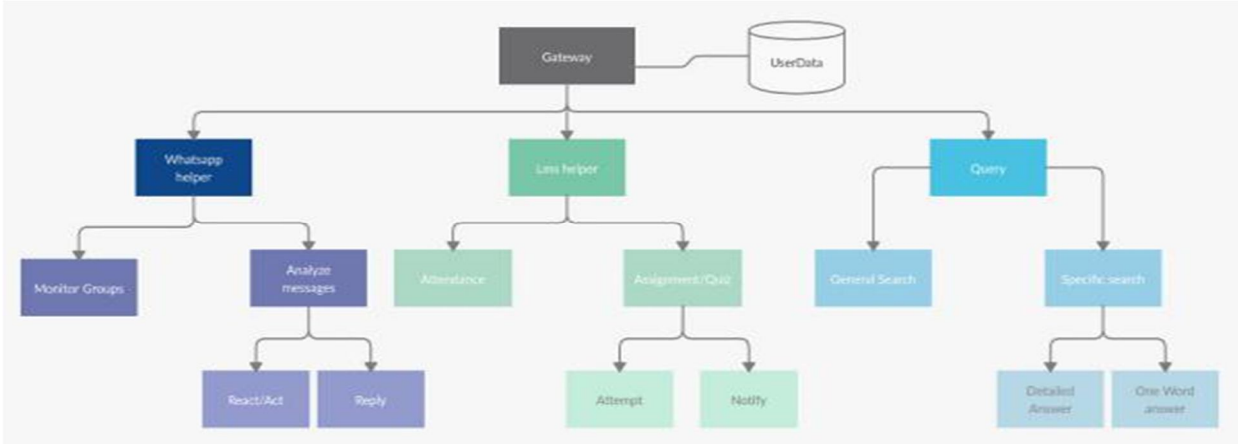
- Spelling Mistakes.
- Broken Links.
- The Application will be tried on machines with the least detail to test stacking times and any dormancy issues.

b) *Beta Testing:* In beta testing, Associate in nursing example of the target cluster tests the appliance and send their input to the enterprise cluster. Obtaining the input, the enterprise cluster will fix the problems before delivering the merchandise to the important purchasers.

IV. DESIGN CONCEPT

The design of a Chatbot is represented here:





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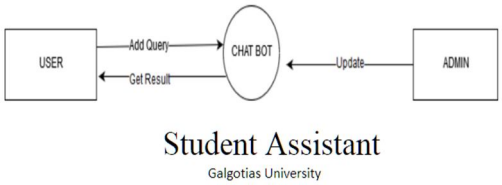
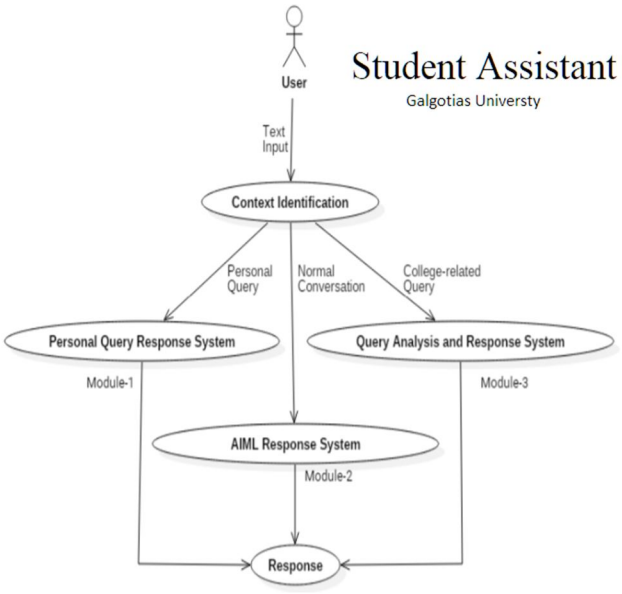
A. Data Flow Diagram



B. Use Case Diagram



C. LMS Module Concept

V. SYSTEM ARCHITECTURE

There are layers in the architecture.

A. Presentation Layer

In this layer users interact via voice commands, text commands with bot, input in this layer is transferred to the service layer and the output from the service layer is delivered to the user via alert module.

B. Service Layer

This layer consists of six different modules (quiz, assignment, icloud, lms, note and calander).

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C. Data Access Layer

This layer handles exchange from the databases and the chatbot. Sql queries are used to insert and access data.

D. Database Layer

This layer consists of a sqlite api which handles all the three Databases.

1) Command database
2) Credentials database
3) Notes database

Two dimensional string arrays area unit wont to build a info to store database. Arrays contain rows and columns. All the rows area unit used for request and response. Even rows contain request and every one the odd rows contain answers or responses. Columns within the given array area unit applied to store and save varied forms of queries that a chatbot needs to answer. Default responses area unit keep during a totally different row within the array. And this row isn't used for storing the other knowledge. once the matching question isn't found within the array then the default response statements area unit used.

a) Algorithms: In chatbot technology for every quite input given by the user a definite pattern is hold on within the info. These patterns facilitate in providing users an appropriate response. the utilization of algorithms is to scale back the classifiers and to make an outsized combination of patterns. These patterns usually follow a hierarchy that creates an efficient and manageable structure. These algorithms follow the essential algoritm known as transnational Naive Thomas Bayes. For example, assume a collection of words area unit given that belong to a selected category. With every new input of a word, every word is counted for its incidence. and every category is appointed a score. the best score within the category is that the nearest to be connected with the input word.

E. Few Sample Input Sentence Classification

Input - “Hello good morning”
term - “hello” (no matches)
Term - “good” (class: greeting)
term: “morning” (class: greeting)
classification: greeting (score=2)

With the help of such an equation, word matches are noted for each class. Classification scores identify the class with the most term matches. But it also has certain limitations. The score explains that which intents to most likely match the sentence. There is no certainity that it is perfect

Algorithm

1) Chat Bot

```
Algorithm ChatBot()
    pre : Voice or Text input
    Post: Voice or Text output
    While: True
        Match input with cases
        if : match found
            Perform task
        else:
            Pass
        end if
    end while
    return True
end ChatBot
```

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2) Whats app

```
Algorithm Whatsapp()
    Pre: Whatsapp authentication
    Post: return action
    While: True
        read messages
        match phrases to    keys
        If: match found
            Return action[key]
        else:
            Pass
        end if
    end while
end Whatsapp
```

3) LMS

```
Algorithm LoginLms():
    pre: Credentials, login_page_url
    driver = selenium.webDriver
    driver.get(login_page_url)
                    driver.send_key(credentials.id)
    driver.send_ley(credentials.password)
    dirver.send_key("Enter")

    return driver

Algorithm GetInfo():
    pre: course
    driver = LoginLms()
    all_courses = driver.get_element("course")
    for each course in all_courses:
        if course == course:
            return course.get_element("incomplete")
        else:
            return "No incomplete tasks found"
    driver.close()
```

4) Calendar Events

```
Algorithm CalendarEvents():
Pre credentials.json
Voice or text input Date/Day
if date is valid
result :: api_request(date)
return result
else:
return None
```

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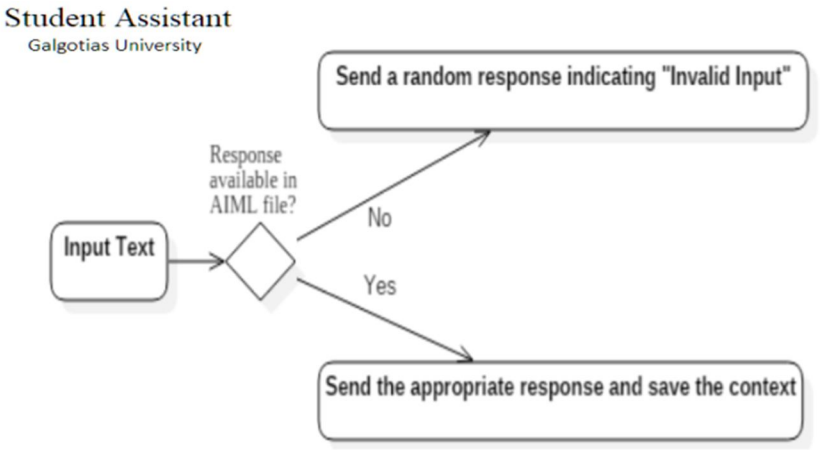
VI. MODULES DESCRIPTION

The description of the modules are as follows:

A. Basics of chat bot

A chatbot is AN by artificial means intelligent creature which might converse with humans. this might be text-based, or a spoken conversation (in case of voice-based queries). Chat bots are
basically used for data acquisition. It will run on the local PCs and mobile phones, tho' most of the time it is accessed through the web. It may be compelling, captivating and spell-bounding. it's a colloquial agent which interacts with users during a bound domain or on a particular topic with input in linguistic communication sentences. Mainly a chat bot works by a user asking some question or initiating a brand new topic of dialogue. Chat bots may be referred as computer code agents that faux as human entity. These ar the agents with AI embedded and victimization information processing they'll answer to user queries. Predefined knowledge domain helps develop a response to the question.

B. Normal Conversation Response Activity



C. Chat bot for College

The need for school inquiry system arises because of numerous reasons that include: the slow nature of school web site, an outsider wouldn't apprehend wherever to go looking for a specific piece of data, troublesome for the person outside college's domain to extract data. The sensible resolution for all the drawbacks lends to the necessity of the system. the faculty
inquiry system can give the response by summarizing the query and so output answers, it additionally provides selective information what the user desires. a university system can dispense all answers with reference to domains like admission, examination cell, board, attendance, placement cell and different miscellaneous domains.

1) *Alert:* This Module Handles all the alerts, notification and message to user, it usestkinter message box for messages, play sound and gTTS for voice alerts and messages, player notification for action bar notification.
2) *Assignment:* This module retrieves assignment details like start time , end time, course, etc. And save the data in the database.
3) *Quiz:* This module is similar to assignment module except it is for quiz details
4) *Calendar:* This module handles the google calendar with google calendar api. It consists of google credentials. json and token. pickle and a .py file, This module login user to the google calendar and save the login status. Main objective of this module is to create and retrieve events from google calendar.
5) *iClouds:* This module is an unofficial api for "gu.iclouds.ems" which is used to retrieve information like class schedule and attendance.
6) *Lms:* This module is an unofficial api for "lms.galgotiasuniversity.com" used to retrieve details of quiz and assignment.
7) *Note:* This module create a ".txt" file which contains user "Quick Note" .
8) *Utils:* Utils module contains decorators.py which is used for debugging purposes and helper.py which contains some helper methods. This module also interacts with databases. To save and retrieve information.
9) *Test:* This module contains different test files for integration testing, unit testing etc.

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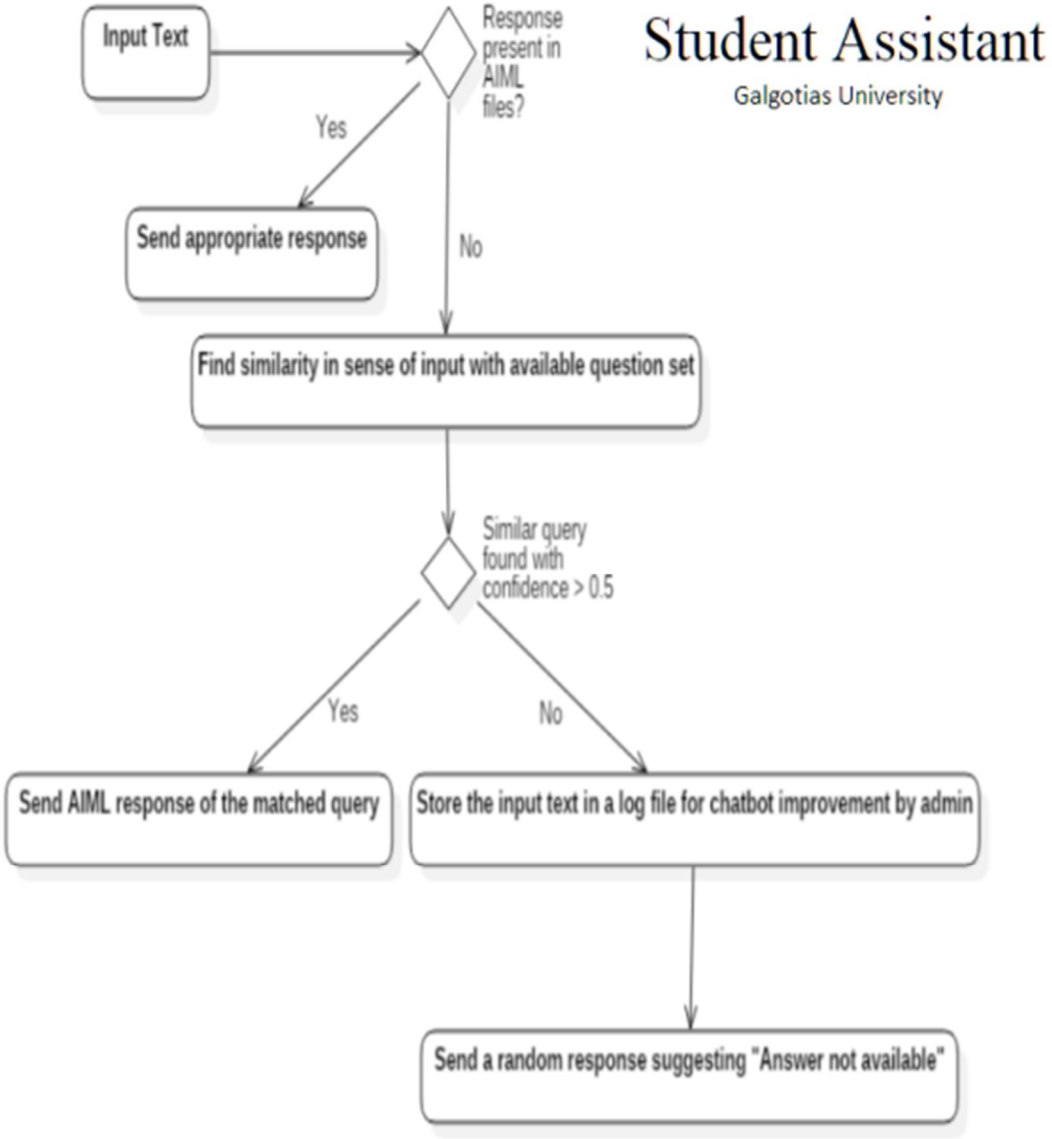
D. College Related Query Response Activity



1) *Google APIs:* Google APIs are application programming interfaces (APIs) developed by Google. Google APIs help us in authorization with Google Services. Google APIs includes Search, Gmail, Translate or Google Maps. Third-party applications can use the following APIs to for authorization in order to use Googles services.
2) *Calendar API:* Anyone will use Google calendar Api's to seek out out and consider calendar events. each public and personal events area unit accessed. Our main perform is to line up conferences and updates sort of a kerfuffle list. conjointly our chatbot may be set that the user is reminded of his schedule frequently. Events on this calendar may be noninheritable and altered simply at the clicking of a button.

VI. APPLICATIONS

A. It allows the scholars to be updated with schoolactivities.
B. It saves time for the scholars still as teaching andnon-teaching staffs.
C. It's providing U.S.A. a promptly out there infosource while not taking any physical efforts.
D. It's simply accessible and saving time and cash additionally.

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1) Output

(A)

File - Main

```
C:\Users\saumyakr1232\.virtualenvs\myassistant\Scripts\python.exe S:/Projects/myassistant/Main.py
--------------------------------------------------
--------------------------------------------------
 _   _                 _       _____
| \ | | ___ | |__  (_) |_ __ _
|  \| |/ _ \| '_ \ | | __/ _` |
| |\  | (_) | |_) | | | || (_| |
|_| \_|\___/|_.__/|_|\__\__,_|


--------------------------------------------------
--------------------------------------------------

(^-^)-> Hello sir, how can i help you?
command -> -config

----------------------Config----------------------

 All the available settings are given below,

  1) Bot
  2) Interaction
  3) Compiler Options
  4) Features Installation
  5) Training Mode
  6) Export/Import settings
  0) Exit

 Enter the index number : 2
 You have selected Interaction .
----------------------Interaction----------------------
 Select the index to change,

  1) voice_reply : True
  2) text_reply : True
  3) voice_read_voice_reply : False
  4) text_read : True
  0) Cancel

 Enter the index number : 1
 You have selected voice_reply .
 Do you want to turn voice_reply to False?(Y/N) : Y
 Successfully updated.
----------------------Config----------------------

 All the available settings are given below,
```

Page 1 of 3

File - Main

```

  1) Bot
  2) Interaction
  3) Compiler Options
  4) Features Installation
  5) Training Mode
  6) Export/Import settings
  0) Exit

 Enter the index number : 0
 Exiting.
 For some setting you might need to restart me.

(^-^)-> Good luck sir.
--------------------------------------------------
command -> what is your name


(^-^)-> My name is nobita.
--------------------------------------------------
command -> who is president of nepal


(^-^)-> Bidya devi bhandari (from 29/10/2015 to present)
--------------------------------------------------
command -> who is shushat singh rajput


(^-^)-> Don't know what to do sir
--------------------------------------------------
command -> what do i have planned today


(^-^)-> .
--------------------------------------------------
command -> calculate 23 * 233


(^-^)-> 5359
--------------------------------------------------
command -> what is squre root of 6


(^-^)-> 2.
4494897427831780981972840747058913919659474806566701284326
925672...
```

Page 2 of 3

File - Main

```
--------------------------------------------------
command -> what is latest version of python programming language

(^-^)-> Don't know what to do sir
--------------------------------------------------
command -> take a screenshot

(^-^)-> Screen shot saved
--------------------------------------------------
command -> take a note

hii this a
(^-^)-> Don't know what to do sir
--------------------------------------------------
command -> where am i


(^-^)-> Ip location is not setup yet
--------------------------------------------------
command -> bye


(^-^)-> Good bye sir.
--------------------------------------------------
--------------------------------------------------
  ______   _______ _
| __ ) \ / / ____| |
|  _ \\ V /|  _| | |
| |_) || | | |___|_|
|____/ |_| |_____(_)


--------------------------------------------------
--------------------------------------------------

Process finished with exit code 0

```

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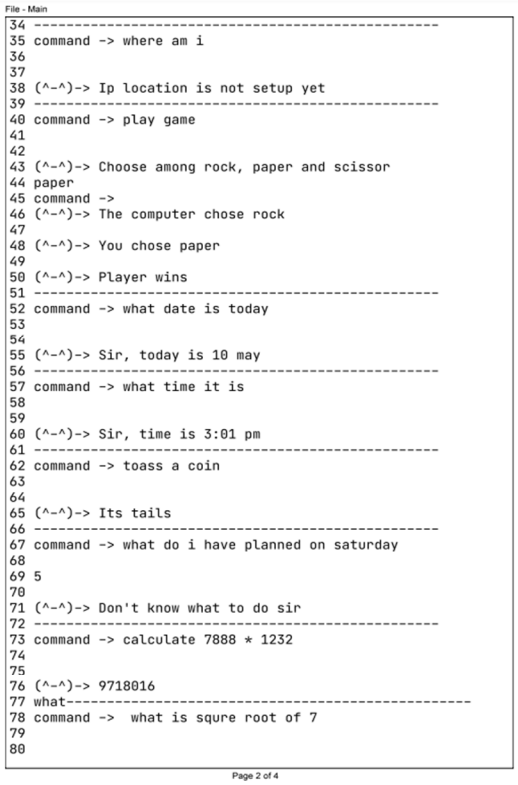
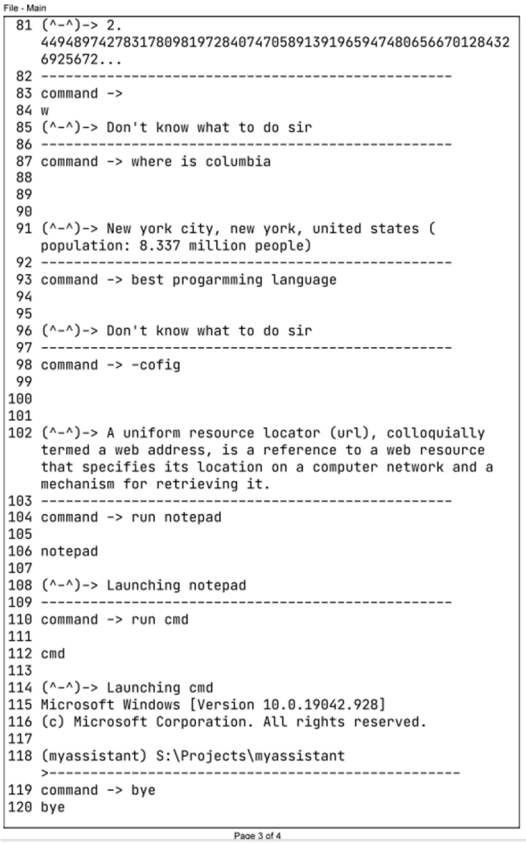
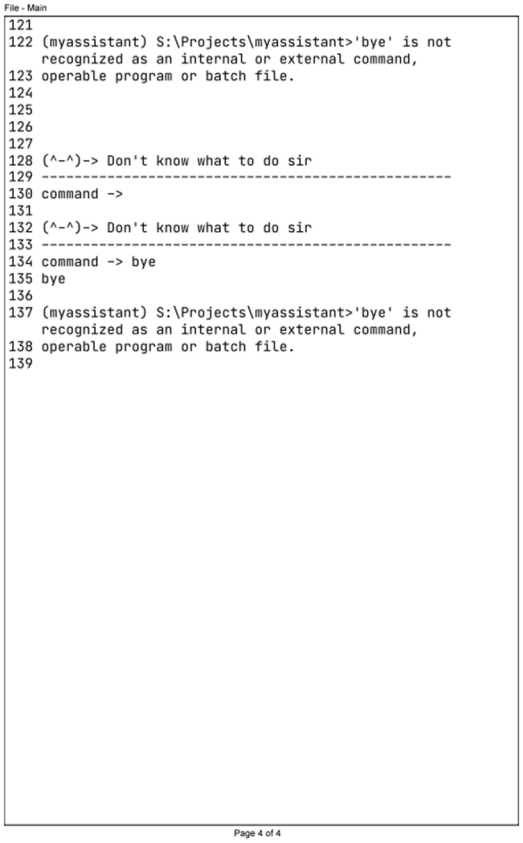
(B)







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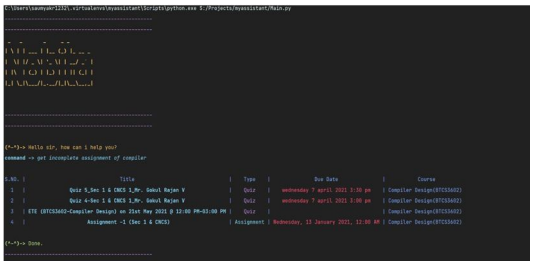

VII. FUTURE SCOPE

We can execute AI to offer explicit responses to clients according to their inquiry. We can coordinate constant talk and answer bringing straightforwardly from google utilizing AI to be more explicit on client question.

We can refresh it next form. Reusable programming lessens configuration, coding and testing cost by amortizing exertion more than a few plans. Lessening the measure of code likewise streamlines understanding, which improves the probability that the code is right. We follow up the two sorts of reusability: Sharing of recently composed code with in an extend and reuse of recently composed code on new ventures.

Its expense is under the spending plan and make inside given time span. It is attractive to focus on a framework with a base cost subject to the condition that it should fulfill the whole necessity. Extent of this record is to put down the prerequisites, plainly recognizing the data required by the client.

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VIII. DRAWBACKES

As the information base, utilized for yield age, is fixed and restricted, chatbots/Assistant can fall flat while managing an unsaved question.

Chatbot's/Assistant's productivity exceptionally relies upon language handling and is restricted due to abnormalities, for example, accents and mix-ups that can make a significant obstruction for global and multicultural associations .

Chatbots/Assistants can't manage different inquiries simultaneously thus discussion openings are restricted.

As it happens as a rule with innovation drove changes in existing administrations, a few shoppers, usually from the old age, are awkward with chatbots/Assistants because of their restricted arrangement, making it evident that their solicitations are being managed machines.

It is regularly viewed as that chatbots/Assistants are muddled and need a great deal of time to comprehend what you need in client. In some cases, it can likewise pester the customer about their gradualness, or their trouble in separating reactions.

IX. CONCLUSION

Using pattern matching algorithmic program, a system that may act as a virtual personal assistant to set up user's work and schedule his conferences was with success designed.

From our purpose of read, whatsapp Assistant chatbots is drastically evolving organizations. there's a good scope of chatbot building stages and what is more wide scope of chatbot sorts that square measure accessible for various endeavors, for instance, internet primarily based business, retail, banking, recreation, travel, medical aid, etc but attributable to this we'd like to create additional shopper driven Assistant/chatbot which can facilitate the 2 understudies and business to subsume tremendous variety base at a time. Chatbots/Assistant will connect with a large crowd on informing applications and be additional powerful than individuals. they will kind into associate in a position information gathering instrument sooner instead of later.

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Nowadays, customers hope to own the choice to find the information they are looking for on-line speedily and with none drawback. what is more, once a website and business cannot provide that kind of involvement, they become baffled. Chatbots square measure able to facilitate these disappointments by giving the continued, on interest approach that understudies or purchasers square measure seeking out.

X. ACKNOWLEDGEMENT

It gives us a great pleasure to make this project for the B. school Minor Project undertaken throughout B. Tech. Third Year. we tend to special debt of feeling thankful to prof Mr. Gautam Kumar, Department of CSE Galgotias University, Greater Noida, UP for his constant support and steering throughout the course of our work. Their sincerity, painstakingness and perseverance are a relentless supply of inspiration for us. it's solely their cognizant efforts that our endeavors have seen lightweight of the day.We additionally don't wish to miss the chance to acknowledge the contribution of all faculty members of the department for his or her kind help and cooperation throughout the event of our project. Last however not the smallest amount, we tend to acknowledge our friends and you tube for contribution within the completion of the project.

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[6] Diagram for Proposed method- Draw.io Available:https://app.diagrams.net/
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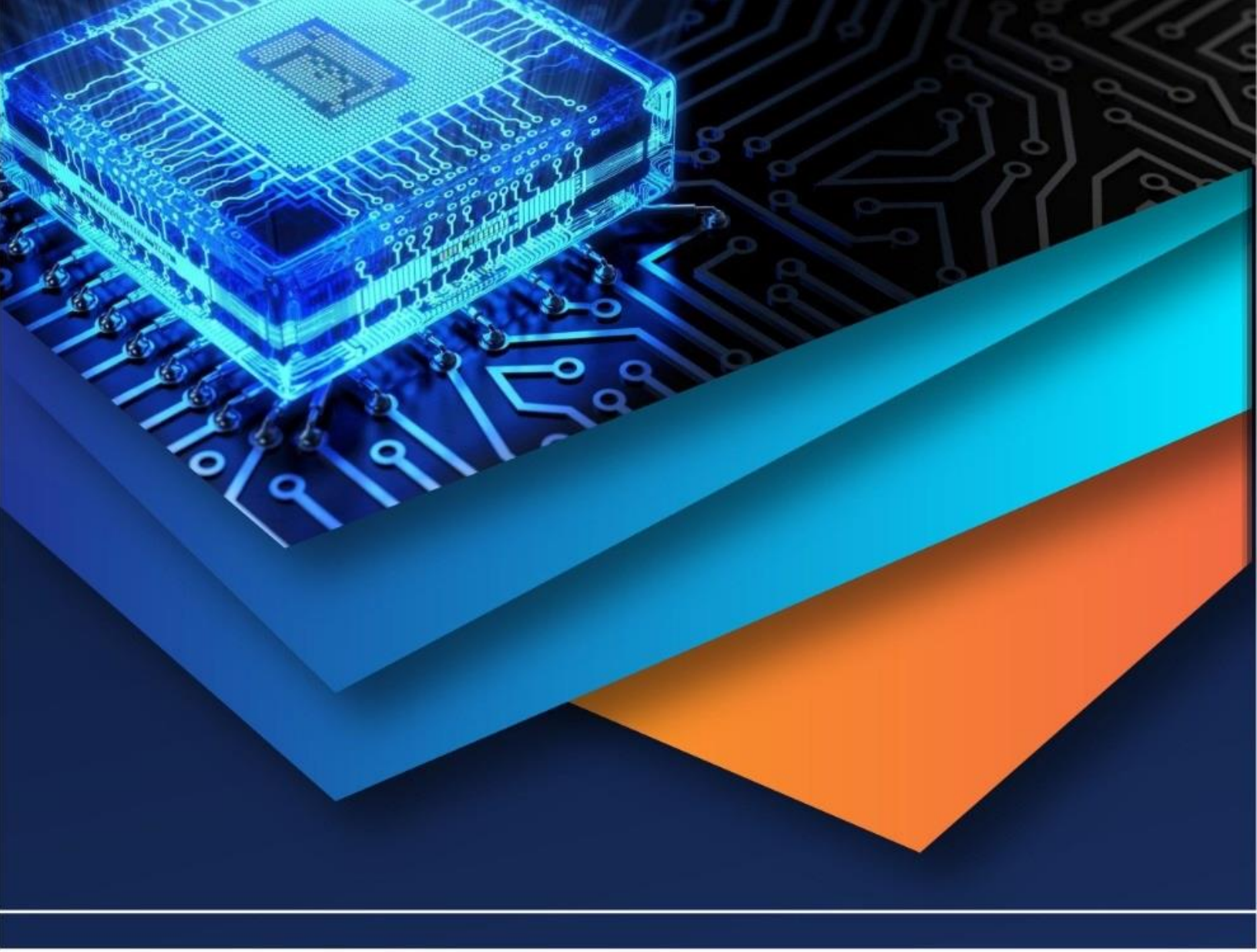

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