ANAUTOMATED CHAT-BOT IN FOOD SECTOR

A MINI PROJECT REPORT

Submitted by

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in partial fulfillment for the award of the degree of

BACHELOR OF TECHNOLOGY

IN

INFORMATION TECHNOLOGY

PANIMALAR ENGINEERING COLLEGE, POONAMALLEE

(An Autonomous Institution)

ANNA UNIVERSITY: CHENNAI 600 025

MAY 2023

BONAFIDE CERTIFICATE

Certified that this project report **"AN AUTOMATED CHAT-BOT IN FOODSECTOR"** is the bonafide work of **"SUNIL KUMAR.V (211420205157), RONAL REGAN.S (211420205128), RANJITH KUMAR.R (211420205122)"** who carried out the project under mysupervision.

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Submitted for the project and viva-voce examination held on _____

INTERNAL EXAMINER EXTERNAL EXAMINER

DECLARATION

I hereby declare that the project report entitled "**AN AUTOMATED CHAT-BOT IN FOOD SECTOR"** which is being submitted in partial fulfilment of the requirement of the course leading to the award of the 'Bachelor of Technology in Information Technology' in **Panimalar Engineering College, An Autonomous institution Affiliated to Anna University-Chennai** is the result of the project carried out by me under the guidance and supervision of **Mrs. K.MUTHULAKSHMI, M.TECH.,(Ph.D) Associate Professor in the Department of Information Technology**. I further declared that I or any other person has not previously submitted this project report to any other institution/university for any other degree/ diploma or any other person.

(**SUNIL KUMAR.V**)

(RONAL REGAN.S)

Date: **(RANJITH KUMAR.R)**

Place**:** Chennai

It is certified that this project has been prepared and submitted under my guidance.

Date: (**Mrs. K.MUTHULAKSHMI M.Tech.,(Ph.D)**

Place: Chennai (Associate Professor/ IT)

ACKNOWLEDGEMENT

A project of this magnitude and nature requires kind co- operation and support from many, for successful completion. We wish to express our sincere thanks to all those who were involved in the completion of this project.

Our sincere thanks to **Our Honorable Secretary and Correspondent, Dr. P. CHINNADURAI, M.A., Ph.D.,** for his sincere endeavor in educating us in his premier institution. We would like to express our deep gratitude to **Our Dynamic Directors, Mrs. C. VIJAYA RAJESHWARI and Dr.C.SAKTHI KUMAR, M.E.,Ph.D** and **Dr.SARANYA SREE SAKTHIKUMAR., B.E., M.B.A.,Ph.D** for providing us with the necessary facilities for completion of this project.

We also express our appreciation and gratefulness to **Our Principal Dr. K. MANI, M.E., Ph.D.,** who helped us in the completion of the project. We wish to convey our thanks and gratitude to our head of the department, **Dr. M. HELDA MERCY, M.E., Ph.D.,** Department of Information Technology, for her support and by providing us ample time to complete our project.

We express our indebtedness and gratitude to our staff in charge, **Mrs.K. MUTHULAKSHMI M.Tech.,(Ph.D)** Associate Professor, Department of Information Technology for her guidance throughout the course of our project. Last, we thank our parents and friends for providing their extensive moral support and encouragement during the course of the project.

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ABSTRACT

***Abstract*—Now a days people are using the food delivery app on huge scale and dayby day the demand for these apps are increasing on huge scale. The ultimate aim of this chat bot is to take care of the customers health too. Here we use the artificial intelligence and data science to work on the BMI of the customer to predict the perfect food for them. Apart from this it too takes care of the customer's diet if so he/she suffers from the long term diseases like Diabetics, Blood pressure and other medical conditions too with the help of the BMI. So by following the healthy food habits, a healthy lifestyle can be maintained.**

Index Terms- Chat-bot, BMI detection, Artificial Intelligence, Data Science

LIST OF FIGURES

1. INTRODUCTION

In earlier days people used to go to the hotel and buy the food they need, but now-a-days it is now becoming quite common to order the food online and getting delivered at their door-step. Even though this can reduce the people's time to great extent, but this too have various problems because some people health condition will not accept spicy food, for some others it won't accept oily food. So the ultimate idea of this chat-bot is to prescribe perfect food for every single users. For example once the user enters into the website he/she will be asked to give their height, weight and age using which the BMI of the person can be calculated. Apart from this if so the user has any kind of long term diseases like Diabetics and Blood pressure it can also be predicted from the BMI of the customer calculated. For example when a person tries to order for his/her self or others, then based this result the outcome of the chat bot suggestions will be, if suppose the user orders for other person then it displays the entire suggestions. But if so the user orders for his/her-self then based on their health condition the filters will be applied for their food suggestions and it is purely based on the users whether they take up the suggestions or not. But it is the duty of the chat bot to make a perfect suggestion for their users. For example, if so the user is suffering from Diabetics then the chat bot removes all kinds of restaurants whose food can spoil the health of their users in any aspect.

1.1 OVERVIEW OF THE PROJECT

A chatbot is a name given to a software application or service that replicates human-to-human interactions. This is usually achieved through artificial intelligence and machine learning, which allows the chatbot to interpret communication from a human user and respond in a seemingly intelligent way.

With this in mind, a restaurant chatbot is a service that allows customers to ask questions or make requests without the need for a human staff member to

respond. Restaurant chatbots are specifically designed with restaurant customers in mind and so respond appropriately to the most common queries.

1.2 NEED FOR THE PROJECT

The need of this project will be;

1. Right food for right people- since various levels of filters and suggestions are performed inside the chat bot the people will be surely provided with the perfect food suggestions.
2. High customer satisfaction- Here the customers are clearly aware of the type of the food they are consuming and the composition of the ingredients in the food because the bot clearly displays the every aspect of the food.
3. Maintains the health of the customer to great extent- A person with the good health is a complete person. Here the bot provides the user with good health through it's good food prediction.

1.3 OBJECTIVE OF THE PROJECT

❖ Saving Time and Money:

Perhaps the single most significant benefit associated with the use of restaurant chatbots is their ability to save businesses both time and money. A chatbot can engage with customers instantly, at any time of the day, which means it can contend with modern demands for swift response times on a 24/7 basis.

On top of this, a high-quality, carefully designed chatbot can deliver quality answers, does not need to be paid, does not need to rest, and is capable of passing on more complex tasks to human staff members, when necessary.

❖ Upselling and Promoting Special Deals:

Modern restaurant chatbots are capable of assisting businesses with upselling to guests who are placing orders. This could mean highlighting the option to order a large portion instead of a small or medium-sized portion, or it could mean suggesting side orders that are regularly ordered alongside what has been ordered so far.

Additionally, chatbots can collect contact details for those who interact with them. This can help restaurants and others in the hospitality industry to get in touch with those individuals who have expressed an interest and target them with relevant and tailored promotional content, such as special offers and discounts.

❖ Follow Up and Reputation Management

Another crucial way that those in the restaurant industry can benefit from the use of chatbots is for follow-up and reputation management. With follow up, a restaurant chatbot can communicate with customers and ask questions about their experience, their views on the food, what they liked, and what they did not like.

This follow up can also be used as part of a wider reputation management strategy. Restaurant chatbots have the capacity to send communications to customers, asking for them to write reviews, or submit feedback, and this can then help to influence other customers, who seek out reviews before booking a restaurant table.

1.4 SCOPE OF THE PROJECT:

- Food Recommendations

Restaurant chatbots also have the capacity to learn from previous interactions with customers and this can be extremely valuable for customer service purposes because it allows customised recommendations to be made.

For example, a restaurant chatbot that has previously taken food orders from a customer may be able to intelligently recommend meals that are similar to what has been ordered before. Alternatively, it could suggest meals that have previously been enjoyed by other customers who ordered the same menu items in the past.

- Voice Ordering as the Future

Although most restaurant chatbots are text-based, chatbot restaurant technology can also utilise speech recognition and voice-to-text technology, which can deliver exciting opportunities for businesses.

This follows wider trends, which have seen voice technology become more popular thanks to voice assistants like Siri, Alexa and Google Assistant. For customers, voice recognition technology can allow them to carry out tasks like booking a table, or making a food order, even if they are busy with other things.

For this reason, restaurants are increasingly using voice technology and chatbots to allow for automated voice ordering, which can drastically reduce waiting times and free up staff to focus on other tasks. At the same time, it can also provide accessibility benefits for people with disabilities or physical impairments.

2. LITERATURE SURVEY

Diaa Salama AbdElminaam and noha ElMasry [6]On July 03, 2021 the National University of Singapore published a chat bot for the Fake CV detection. Here the bot will detect and report the CV generated using the dataset trained. This bot will be very much useful for HR team to detect the fake CV when there is huge number of CV's to be screened.

Previously, On June 17, 2021 [7] Sai Sharath and Banafsheh, the University of Calif Santa Barbara published a chat-bot to answer the General Knowledge questions asked to bot. Here the bot is trained in with the pre-trained BERT Language called topic entity. The question q, candidate entity e and the candidate answer entities-set are sent to the QA model. Using this the answer set will be selected as the final answer.

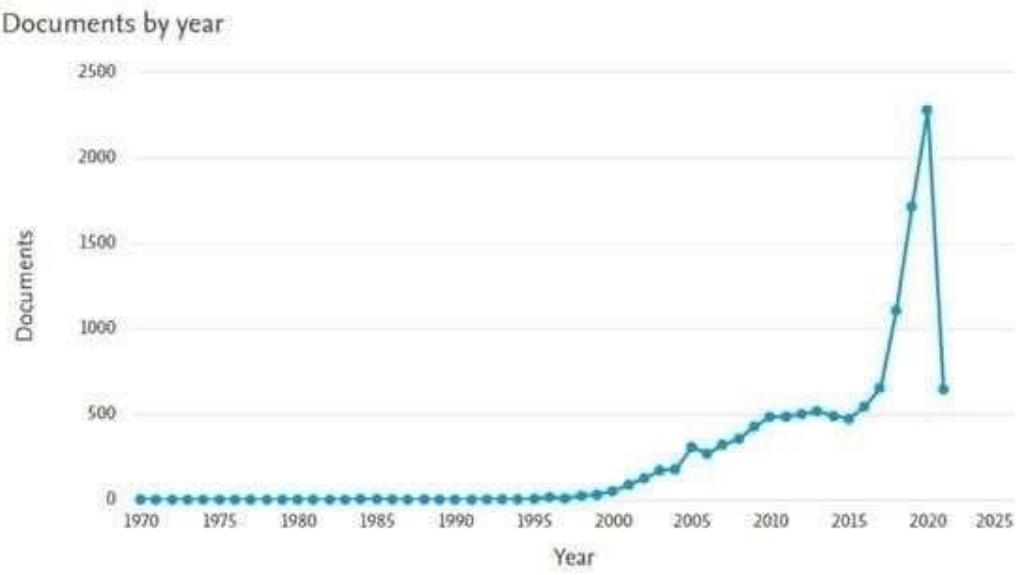
Anna Hjalmarsson and Marten Bjorkma, in 2019, a sentiment -based chat bot [8] was developed in python for automatic twitter replies. Here the bot functioning is based on the previous replies made in the same kind of situation is collected as a data set and the bot prediction of emotion is made.

Anupam Mondal and Monalisa Dey, [9]An automated conversation system for the educational domain was created during late 2018. In this application they collected the data-set of around 1500 questions and then processed it and response selection was made after which the chat-bot was built.

During 15th September 2018, [10]a chat-bot was created to maintain the college management system using Artificial Intelligence and Natural Language processing.

Search Results from Scopus, from 1970 to 2021 for the keywords "chatbot" or

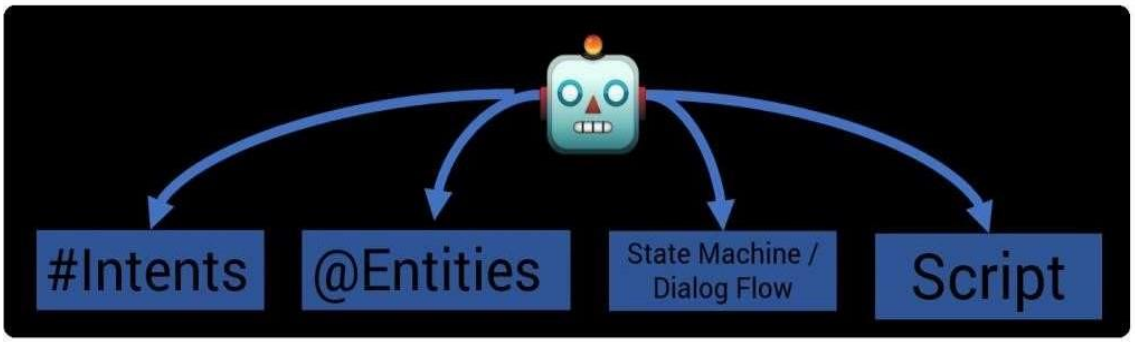
"conversational agents" or "conversation system" is represented in the Figure 2



Fig(2)-Graph report of the survey

3. SYSTEM DESIGN

Natural Language Understanding underpins the capabilities of the chatbot. Without entity detection and intent recognition all efforts to understand the user come to naught. Most chatbot architectures consist of four pillars, these are typically *intents*, *entities*, the *dialog flow (State Machine)*, and *scripts*.



Fig(3) - Traditional Chatbot Architecture

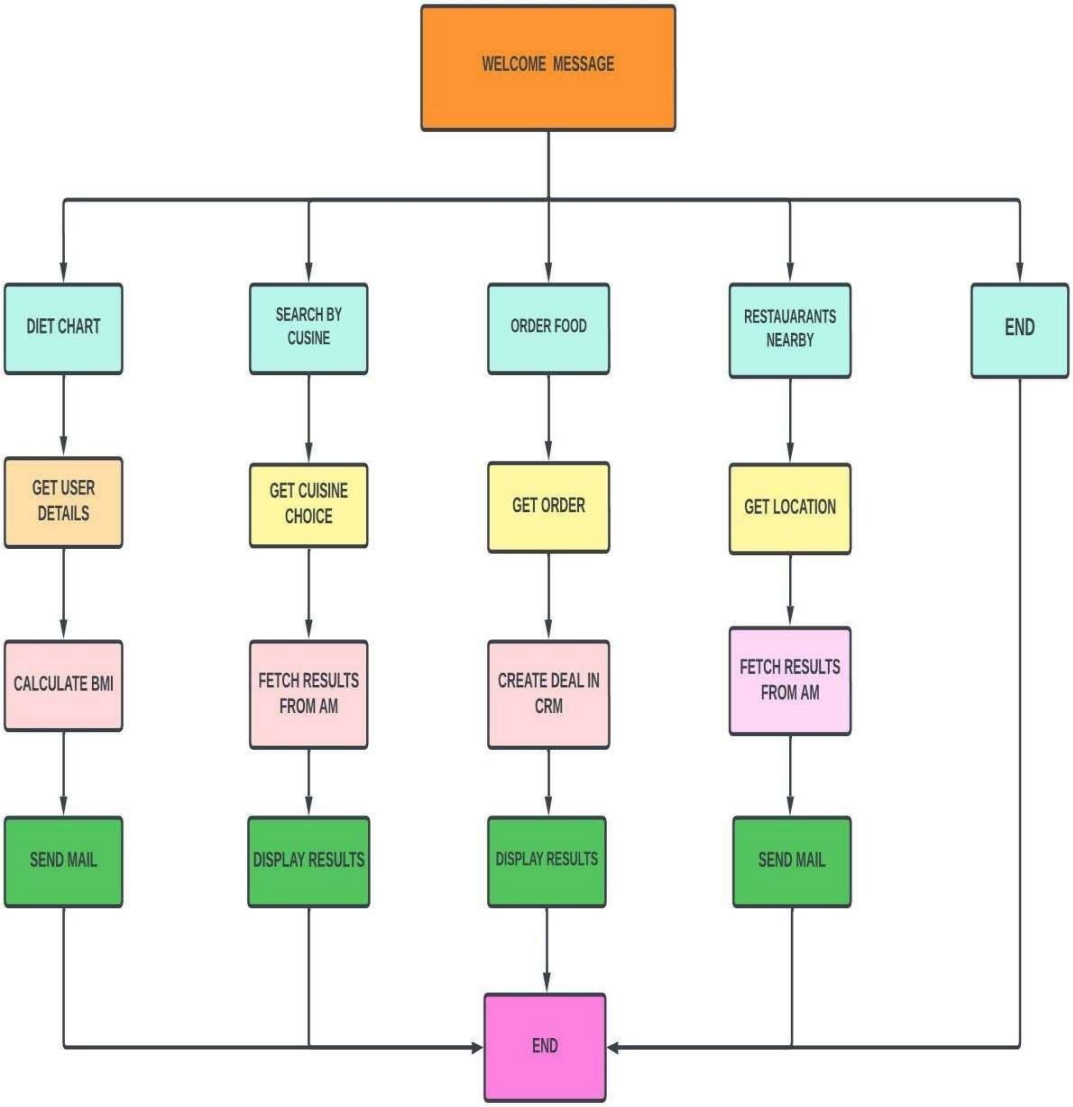
The dialog contains the blocks or states a user navigates between. Each dialog is associated with one or more ***intents*** and or ***entities***. Session variables can also be

employed the decide on which states or nodes must be visited. The ***intents*** and ***entities*** constitute the condition on which that dialog is accessed.

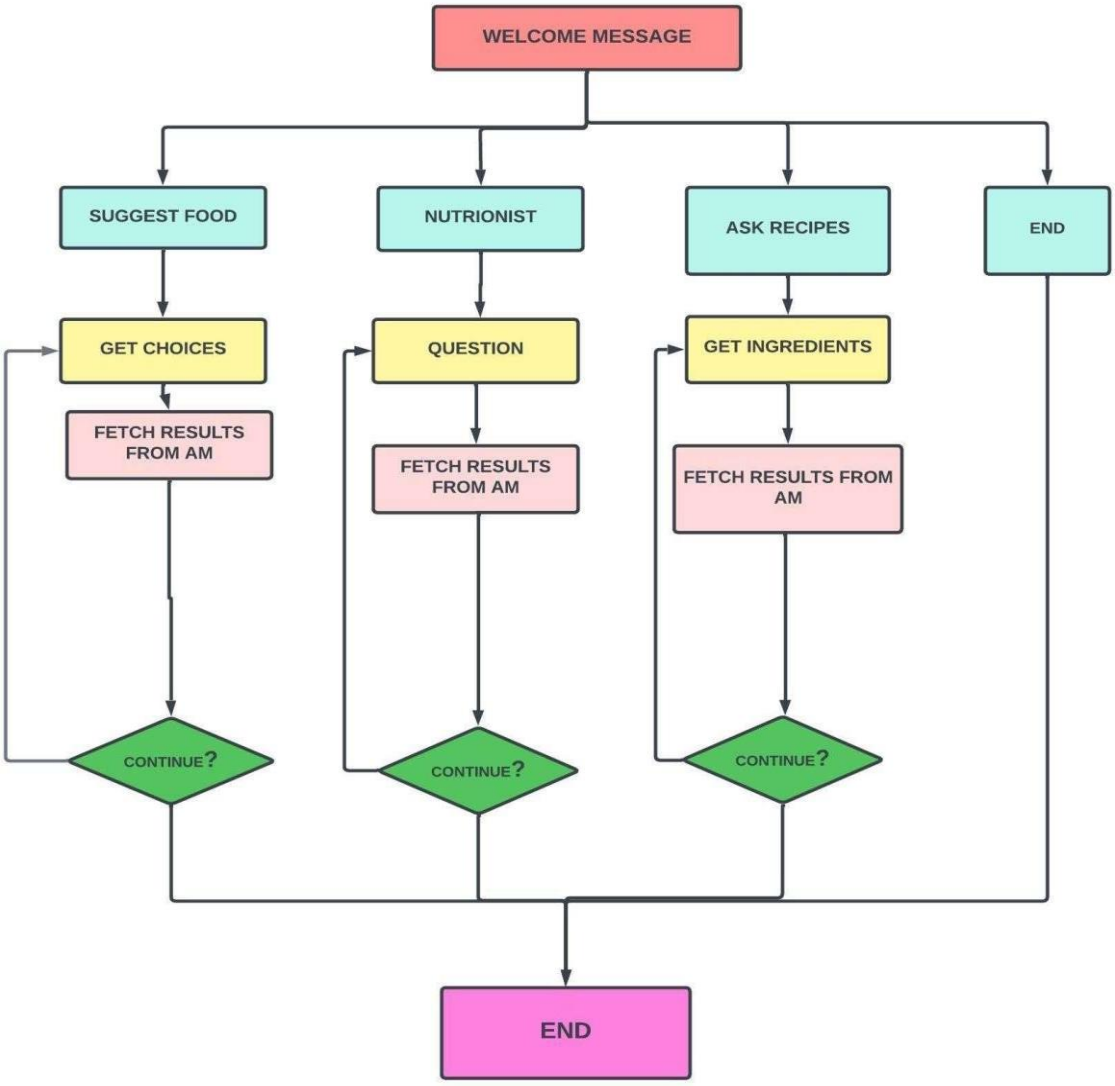
The dialog contains the output to the customer in the form of a script, or a message…or wording if you like. This is one of the most boring and laborious tasks in crafting a chatbot. It can become complex and changes made in one area can inadvertently impact another area. A lack of consistency can also lead to unplanned user experiences. Scaling this environment is tricky especially if you want to scale across a large organisation.

3.1 PROPOSED SYSTEM ARCHITECTURE DESIGN

Here we are proposing a new chat-bot named as DIONYSUS which performs various functions like prescribing the customers with their food of choice, making the orders for their food, searching for the near hotels, checking for the recipe with the ingredients, displaying some raw facts, searching by cuisine and direct person-to-person message. Let us consider the entire operation performed by the DIONYSUS through the flow-chart.



Fig(3.1a)- Flowchart of Dionysus



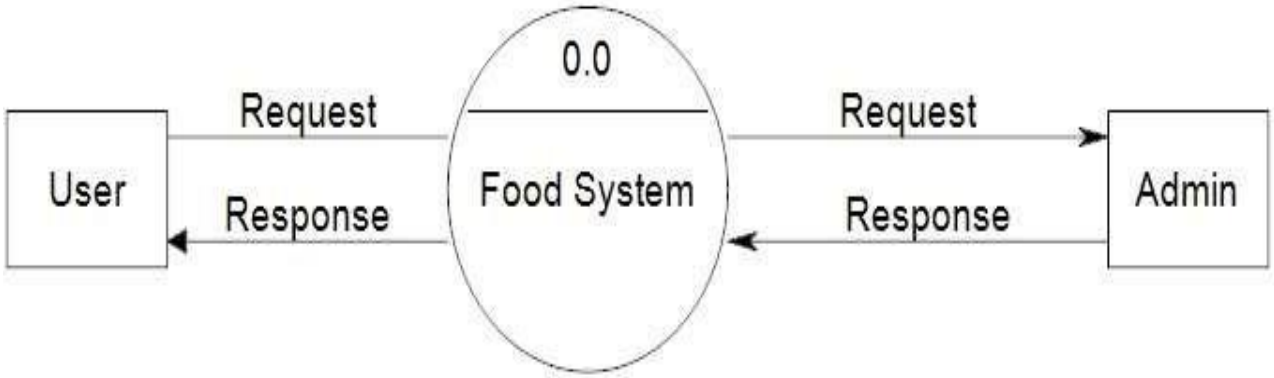
Fig(3.1b)- Flowchart of Dionysus

3.2 DATA FLOW DIAGRAM FOR PROPOSED SYSTEM

A data flow diagram (DFD) maps out the flow of information for any process or system. It uses defined symbols like rectangles, circles and arrows, plus short text labels, to show data inputs, outputs, storage points and the routes between each destination. Data flowcharts can range from simple, even hand-drawn process overviews, to in-depth, multi-level DFDs that dig progressively deeper into how the data is handled. They can be used to analyze an existing system or model a new one. Like all the best diagrams and charts, a DFD can often visually

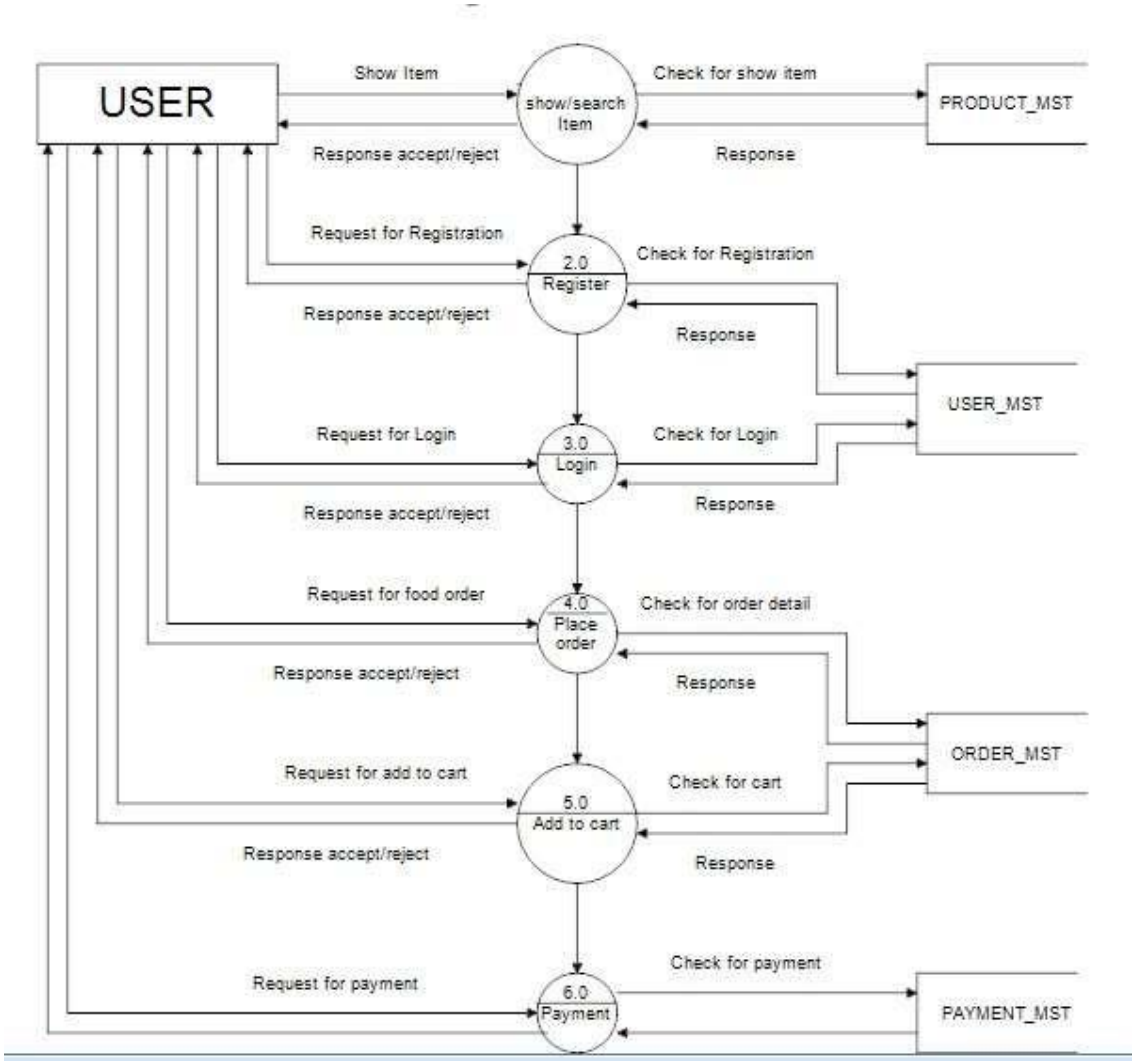
"say" things that would be hard to explain in words, and they work for both technical and nontechnical audiences, from developer to CEO. That's why DFDs remain so popular after all these years. While they work well for data flow software and systems, they are less applicable nowadays to visualizing interactive, real-time or database-oriented software or systems.

LEVEL 0



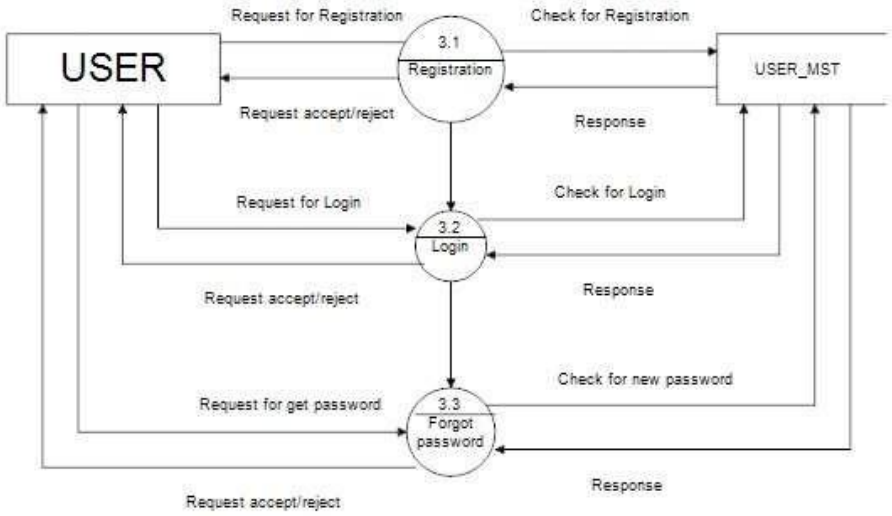
Fig(3.2a)- Level 0 DFD

LEVEL 1



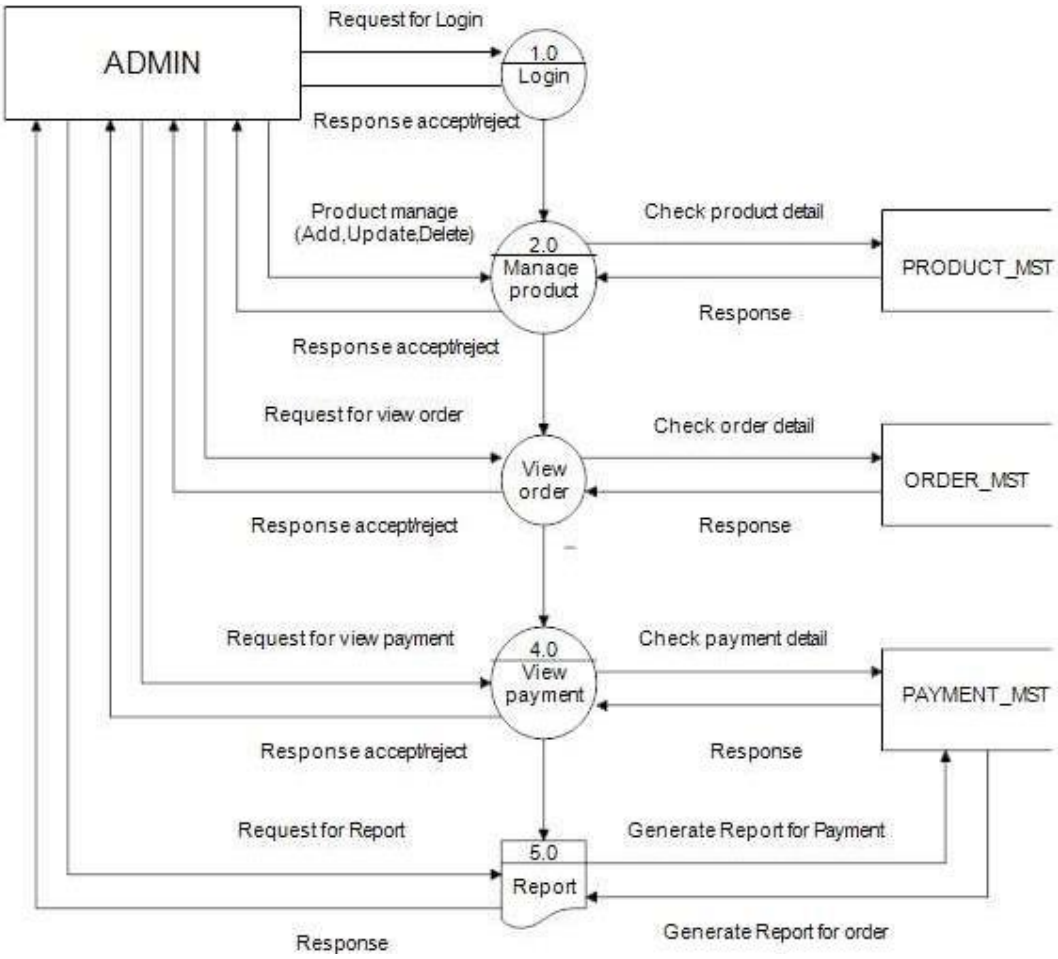
Fig(3.2b)-Level 1 DFD

LEVEL 2



Fig(3.2c)- Level 2 DFD

LEVEL 3



Fig(3.2d)- Level 3 DFD

3.3 MODULE DESIGN:

3.3.1. FOOD SUGGESTER

The food suggester generally suggest the food to their customer based on the need. In this Chat-bot, the user can request the it to suggest them the food based on their need. For example by giving the specified taste as Sweet all the dishes related to it will be displayed.

3.3.2. DIONYSUS THE CHEF

Here we can mention to the chat-bot the ingredients we have, then it will suggest us with the recipe we can from those ingredients. Based on the instructions given by the Dionysus we can prepare the food.

3.3.3. DIET CHART

The Diet chart is the most important aspect for a person to maintain the healthy diet. Here based on the Body Mass Index(BMI) the diet chart of the person can be calculated. Firstly the person will be asked to enter their name, height, weight. Based on this we can calculate the BMI of the person using the below mentioned formula;

$$\text{weight (kg)} / [\text{height (m)}]^2 \qquad \square\square\square$$

Note After calculating the value we will ask for the mail Id of the customer and then the detailed diet-chart for them will be sent to their mail ID by the Dionysus.

3.3.4. SEARCH BY CUISINE

Now we can search the foods based on the different of types of cuisines available. For example when we enter into the option of searching by cuisine, we will be given with various types of cuisines that are

available and now based on the option selected by us we will be displayed with the best dish out of that cuisine in our region or zone.

3.3.5. ORDERING THE FOOD

This feature is same as the ordering feature provided by all the food delivery applications. Based on the Quantity of the food ordered, bill will be generated with the Order ID, Discounts, Total Bill amount and the order placed time and date.

3.3.6. RESTAURANT FINDER

The restaurant finder helps to find the various restaurants that are available near your specified region. For example, in the Dionysus when the user needs to use this feature then the firstly they will be asked to enter their zone i.e.,Chennai,India. Then the bot will ask for the distance within which the restaurant needs to be searched i.e.,6(kms). Now Dionysus will display the best restaurant and the route to it.

4. REQUIREMENT SPECIFICATION

4.1 HARDWARE REQUIREMENTS

DIONYSUS Bot	Recommendation
Application server optimum quirements	• 32 GB RAM • 8 Octa Core Processor • 500 GB hard disk space[1] • Ensure C: drive has 100 GB plus free hard disk space.

Database server optimum requirements

Server	Recommendation
Bot application server	• 32 GB RAM • 8 Core Processor • 500 GB hard disk space
Bot-related database servers	• 16 GB RAM • 8 Core Processor • 500 GB hard disk space **Note:** If hosting DIONYSUS Bot databases along ith other application databases, ensure the hardware sources are increased proportionately.
Microsoft Azure	• vCore model **(recommended)** • DTU model (Premium tier recommended)
Amazon RDS	b.t3.2xlarge or db.t3.xlarge

4.2 SOFTWARE REQUIREMENTS

The following software is required for Bot installation:

Software	Details
Database Management System	**Bot database compatibility matrix** for a list of compatible versions.
Automation Anywhere Control Room	**Bot version compatibility matrix** for a list of compatible versions.
Supported web browsers	• Google Chrome • Microsoft Internet Explorer (Version 11.3.3 onward) **Important:** When using Internet Explorer11, you might need to **Display intranet sites in Compatible View** in the *Compatibility View Settings* window.
Dependencies	Automation Anywhere IQ Bot is dependent on the following Software, which are automatically installed during the installation process: • RabbitMQ v3.10.8 • Erlang/OTP v25.1 (13.1) • NodeJS v14.20.0 • Python3.11.1 (64 bit) • Microsoft .NET Framework v4.7.2. The system prompts for a restart to complete the update. • Microsoft Visual C++ Redistributable 2017 x64 package • Microsoft SQL Server 2012 Native Client – QFE his is installed automatically by the installer. A system start is required. **ote:** In a cluster environment, all dependencies will get stalled on each machine where IQ Bot is installed.

4.2.1. FEATURES OF WINDOWS 11

- Of all the new Windows 11 features, the new launcher-style floating Start Menu is the most distinctive part of Microsoft's next-gen desktop OS. Unlike the traditional Start Menu, the new Start — as Microsoft is calling it — sits right at the center of the taskbar. It has a flyout design with **pinned and recommended apps** accompanying each other. So far in my usage, the recommendations are pretty good. It quickly offers me access to documents, photos, and apps I have recently installed.
- My second favorite feature of Windows 11 is the revamped Action Center. It follows a design language that we have seen on mobile OSes, and I quite like this **mobile-first approach** to important system toggles. You can now simply click on the unified "WiFi, volume and battery" button to open the new Action Center. It packs all the necessary controls, including brightness and volume sliders. You can also add more toggles like before.
- Yeah, you can now **control all your media playback** from the new Action Center on Windows 11. No matter if you are playing a YouTube video, Spotify playlist, a Twitter clip, or a local video, everything shows up in the Action Center. Note that I tried playing a video with VLC, but it didn't show up. However, when I played the same local video through the native "Films & TV" app, it worked flawlessly. So yeah, Universal Media Control is another neat feature in Windows 11.
- A major highlight of Windows 11 is that it can now run Android apps powered by the Amazon App Store. However, Android app support has not been rolled out in the stable Windows 11 build.

4.2.2 FEATURES OF DELUGE

- Deluge, or Data Enriched Language for the Universal Grid Environment as we call it, is an scripting language bundled with ServiceDesk Plus. Deluge enables you to add logic to the application incrementally, making it more

powerful and robust. Using Deluge, you can convert complex business logic to functional workflows, and automate your process.

- Deluge, Zoho's proprietary language, is an easy-to-use, high-level language that helps non-programmers code without any training. The Deluge Script Editor provides a drag-and-drop user interface to add Deluge scripts without the need to learn or remember the Deluge syntax and functions.
- Deluge enables you to code securely in a closed environment and have complete control over the processing of user data. Deluge supports data types, conditional statements, loops, functions, return statements, and comments that are comparable to other popular programming languages, such as C++, Python, Java, JavaScript, and Swift.
- Deluge is packaged into ServiceDesk Plus, enabling you to simply start coding without installing any external software. Unlike traditional programming languages, Deluge requires fewer lines of code to execute complex actions. Deluge comes with built-in functions that help you save time and efforts which otherwise might be spent on writing each function from scratch.
- Using Deluge scripting, you can build Custom Functions that can manipulate data within ServiceDesk Plus and other external applications. You can use Custom Functions in Business Rule, Trigger, and Request Life Cycle to simplify complex, multi-step actions through program scripts.
- In all, Deluge scripting helps you automate complex workflows, customize business processes, and integrate ServiceDesk Plus with external applications.

5. IMPLEMENTATION

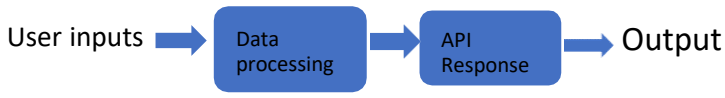
5.1 METHODOLGY

- **ZOHO CRM CONNECTION**

CRM is a repository to bring your sales, marketing and customer support activities together in one platform. Here we create deal CRM for each customer's order, so that it is very easy to manage customer's and analyze sales and profit.

- **API CONNECTIONS**

We have connected two API's for the features in our bot. SPOONACULAR API is used to provide the food recipes and the GEOapify is used to provide the location-based services. This connection is achieved with the help of "getUrl()" method.



Fig(5.1)-API Work Flow

- **SEND MAIL**

The send mail is a component used to send the diet chart and the order summary to the customers for their specific features. This mail sent will be unique for each and every customer based on their needs.

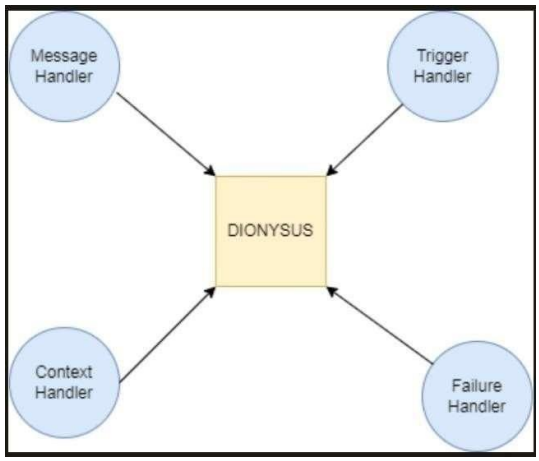
- **INPUT AND DISPLAY WIDGETS**

Sales-IQ widgets are used to get the input from the user and to display it, this make the bot more dynamic and to give a fresh look.

- **ZOHO SHEET INTEGRATION**

We have connected Zoho sheets for storing food related data, user physical inception and more. It acts as our primary data store for many features. Here the data retrieval and updating is very easy process like other tools. We can even use other Database too.

5.2 SAMPLE CODE



Fig(5.2)- Various Handlers of Chat-Bot

5.2.1 CONTEXT HANDLER

```
 response = Map();
response.put("action","context");
response.put("context_id",context_id);

// "Suggest me a delicious food" context flow
if(context_id.equals("Food"))
{
   Food = answers.get("Food").get("text");
   if(Food.containsIgnoreCase("Yes"))
   {
```

```
            response.put("action","reply");
            response.put("replies",{"Great!How do you like your food?"});
            response.put("action","context");
            response.put("context_id","VTaste");
            question = Collection();
            question1 = {"name":"VTaste","replies":{{"text":"Select your
taste🔶🔶"}},"suggestions":{"Spicy","Sweet","Suprise me"}};
            question.insert(question1);
            response.put("questions",question);
    }
    else
    {
            response.put("action","reply");
            response.put("replies",{"Great!How do you like your food?"});
            response.put("action","context");
            response.put("context_id","NTaste");
            question = Collection();
            question1 = {"name":"NTaste","replies":{{"text":"Select your
taste🔶🔶"}},"suggestions":{"Spicy","Sweet","Suprise me"}};
            question.insert(question1);
            response.put("questions",question);
    }
}
else if(context_id.equals("VTaste"))
{
    ans = answers.get("VTaste").get("text");
    if(ans.containsIgnoreCase("Spicy"))
    {
            response.put("action","context");
```

```
            response.put("context_id","VSpice");
            question = Collection();
            question1 = {"name":"VSpice","replies":{{"text":"How spicy do you
like          it?"}},"input":{"type":"slider","values":{"Mild      ","Spicy❖","Very
spicy🔸"}}};
            question.insert(question1);
            response.put("questions",question);
    }
    ans = answers.get("VTaste").get("text");
    if(ans.containsIgnoreCase("Sweet"))
    {
            response.put("action","context");
            response.put("context_id","VSweet");
            question = Collection();
            question1    =    {"name":"VSweet","replies":{{"text":"Do    you    like
milk?"}},"suggestions":{"Yes","No"}};
            question.insert(question1);
            response.put("questions",question);
    }
    if(ans.containsIgnoreCase("Suprise me"))
    {
            response.put("action","context");
            response.put("context_id","VSuprise");
            question = Collection();
            question1        =        {"name":"VSuprise","replies":{{"text":"Preparing
suprise🤸..... Ready??"}},"suggestions":{"Suprise me"}};
            question.insert(question1);
            response.put("questions",question);
    }
```

```
    response.put("action","reply");
    response.put("replies",{"Bye Bye 👋 Type 'Hi' to chat again."});
}
return response;
```

5.2.2. FAILURE HANDLER

```
 response = Map();
if(failed_response.get("action").equalsIgnoreCase("forward"))
{
    code = cause.get("code").toNumber();
    if(code == 1001)
    {
            // Outside business hours
            response.put("action","reply");
            response.put("replies",{"It seems that this is off working hours for us","Leave us a message and we will get back to you"});
    }
    else if(code == 1002)
    {
            // operators_not_available
            response.put("action","reply");
            response.put("replies",{"All our agents are busy at the moment","Leave us a message and we will get back to you"});
    }
    else if(code == 1003)
    {
            // invalid_operators - Operators may be disabled or invalid
            response.put("action","reply");
```

```
            response.put("replies",{"All our agents are busy at the moment","Leave
    us a message and we will get back to you"});
        }
    }
    return response;
```

5.2.3. MESSAGE HANDLER

```
response = Map();
msg = message.get("text");

if(msg.containsIgnoreCase("Suggest me a delicious food"))
{
        response.put("action","context");
        response.put("context_id","Food");
        question = {"name":"Food","replies":{"Sure!Are you a
vegetarian?"},"suggestions":{"Yes!I am a vegetarian","No!I am not"}};
        response.put("questions",{question});
}

else if(msg.containsIgnoreCase("Diet Chart"))
{
        response.put("action","context");
        response.put("context_id","DietPlanner");

        //      Question for Quick physical checkup
        question1 = {"name":"userEmail","replies":{{"text":"Eat Healthy for Long
Life","image":"https://media.tenor.com/IP1cFAOQQWsAAAAC/anime-
food.gif","image_position":"fit"},"Please enter Email-Id
```

:"},"input":{"type":"email","placeholder":"Enter your Email","value":"","error":{"Enter a valid email"}}};

question2 = {"name":"userName","replies":{"Your good name :"},"input":{"type":"name","placeholder":"Enter your name","value":"","error":{"Enter a valid name"}}};

question3 = {"name":"userHeight","replies":{"Your height in Centimeters :"},"input":{"type":"name","placeholder":"Enter your height","value":"","error":{"Enter a valid Height"}}};

question4 = {"name":"userWeight","replies":{"Your weight in Kilograms :"},"input":{"type":"name","placeholder":"Enter your weight","value":"","error":{"Enter a valid weight"}}};

question = Collection();
question.insert(question1);
question.insert(question2);
question.insert(question3);
question.insert(question4);
response.put("questions",question);
info response;
}

else if(msg.containsIgnoreCase("Nutritionist"))
{
response.put("action","context");
response.put("context_id","FoodQueries");

question1 = {"name":"FoodQueriesInput","replies":{{"text":"Ask me anything related to food calories","image":"https://cdn.dribbble.com/users/3524019/screenshots/16284

498/media/d03e7f6dcf5f3a6973b650e3ede72920.gif","image_position":"fit"}},"inpu
t":{"type":"name","placeholder":"Eg:How much vitamin c is in 2
apples?","value":"","error":{"Enter a valid query"}}};

question = Collection();
question.insert(question1);
response.put("questions",question);
info response;
}

else if(msg.containsIgnoreCase("Restaurant"))
{
response.put("action","context");
response.put("context_id","locate");
dropDown = {"type":"drop-down","placeholder":"in
KiloMeters","options":{{"value":"0","label":"6","selected":true},{"value":"1","label
":"12"},{"value":"1","label":"18"}},"select_label":"Select","multiple":false,"min_sel
ection":1,"max_selection":1};

question1 = {"name":"location","replies":{{"text":"Please enter your location:n
","image":"https://i.pinimg.com/originals/d7/ae/01/d7ae0170d3d5ffcbaa7f02f
dda387a3b.gif","image_position":"fit"}},"input":{"type":"name","placeholder":"Eg:
Chennai,India","value":"","error":{"Enter a valid address"}}};
question2 = {"name":"distance","replies":{"Select the distance radius in
Kilometer G"},"input":dropDown};

question = Collection();
question.insert(question1);
question.insert(question2);

```
        response.put("questions",question);
}

else if(msg.containsIgnoreCase("Order Food"))
{
        response.put("action","context");
        response.put("context_id","order");
        quiz = {"Which type of pasta means butterflies in Italian G","Which vegetable is usually eaten with fish and chipsG","How is coriander called in American EnglishG","Which spice is used in a Paella/Briyani to give the rice the yellow colourG"};
        rand = randomNumber(0,quiz.size());
        dropDownMain = {"type":"drop-down","placeholder":"Main courseG","options":{{"value":"0","label":" Spicy Apricot Chicken Wings(non): ₹350","selected":true},{"value":"1","label":" Mutton Curry Rice(non): ₹250"},{"value":"2","label":" Spiced saffron and cashew rice(veg): ₹200"},{"value":"3","label":"Misal(veg): ₹200"}},"select_label":"Select","multiple":false,"min_selection":1,"max_selection": 1};
        dropDownDessert = {"type":"drop-down","placeholder":"Main courseG","options":{{"value":"0","label":" Mutton Haleem(non): ₹150","selected":true},{"value":"1","label":"Baked Cheese cake(non): ₹150"},{"value":"2","label":" Ras Malai(veg): ₹210"}},"select_label":"Select","multiple":false,"min_selection":1,"max_selection": 1};

        //      Basic Details for Delivery
        question1 = {"name":"email","replies":{"Please enter emailId
```

:"},"input":{"type":"email","placeholder":"Enter your Email","value":"","error":{"Enter a valid email"}}};

question2 = {"name":"userNumber","replies":{"Your Mobile Number :"},"input":{"type":"tel","placeholder":"Enter your phone number","value":"","error":{"Enter a valid phone number"}}};

question3 = {"name":"mainCourse","replies":{{"text":" Maincourses always are delicious ","image":"https://quizizz.com/media/resource/gs/quizizz-media/questions/30d0dc4d-2d76-4a83-b1a4-285e2238157f?w=90&h=90","image_position":"fit"}},"input":dropDownMain};

question4 = {"name":"dessert","replies":{{"text":" You can't be sad when you're eating dessert ","image":"https://animesher.com/orig/1/123/1233/12334/animesher.com_food-anime-cake-food-1233413.gif","image_position":"fit"}},"input":dropDownDessert};

question5 = {"name":"discount","replies":{{"text":"Fun Quiz ,Play this to get 10% Discount ","image":"https://www.pngarts.com/files/3/10-Percent-off-PNG-Transparent-Image.png","image_position":"fit"},quiz.get(rand)},"input":{"type":"name","placeholder":"Enter your Answer ","value":"","error":{"Enter a valid format"}}};

inp = {"type":"select","options":{"Confirm ","Discard "}};

question6 = {"name":"confirm","replies":{"Can we place the Order "},"input":inp};

question7 = {"name":"address","replies":{"Kindly share your delivery address ","Check your Email after Entering the address "},"input":{"type":"location","label":"Share Location","select_label":"Send my locale"}};

```
        question = Collection();
        question.insert(question1);
        question.insert(question2);
        question.insert(question3);
        question.insert(question4);
        question.insert(question5);
        question.insert(question6);
        question.insert(question7);
        response.put("questions",question);
}

else if(msg.containsIgnoreCase("Cuisine"))
{
        foodImg =
{"https://as2.ftcdn.net/v2/jpg/01/88/40/35/500_F_188403567_Uu8NE2o6lE2rKriAp
CcuDsR6g3301ljM.jpg","https://previews.123rf.com/images/losinstantes/losinstantes
1712/losinstantes171200024/91742387-traditional-italian-food-on-a-dark-
background-with-copy-space-ingredients-for-cooking-tomatoes-on-
br.jpg","https://media.istockphoto.com/photos/variety-of-spices-and-herbs-on-
kitchen-table-picture-
id938050806?k=20&m=938050806&s=612x612&w=0&h=HUjnjjymEPGE5PnUPY
o24yi1Ehmobd69cJ2IiManlN4="};
        dropDown = {"type":"drop-down","placeholder":"Select the
Cusine","options":{{"value":"0","label":"
Indian","selected":true},{"value":"1","label":"
Italian"}},"select_label":"Select","multiple":false,"min_selection":1,"max_selection"
:1};
        rand = randomNumber(0,foodImg.size());
```

```
        response.put("action","context");
        response.put("context_id","authentic");
        question1 = {"name":"authentic","replies":{{"text":" Cuisine is when things
taste like themselves.-
Curnonsky ","image":foodImg.get(rand),"image_position":"fit"}},"input":dropDo
wn};

        question = Collection();
        question.insert(question1);
        response.put("questions",question);
}
else if(msg.containsIgnoreCase("Chef"))
{
        response.put("action","context");
        response.put("context_id","Chef");

        question1 = {"name":"Chef","replies":{"Hi!I am the chef. Ask me about
recipes.","What ingredients do you
have?"},"input":{"type":"name","placeholder":"Eg:Apple,sugar","value":"","error":{
"Enter a valid format"}}};
        question = Collection();
        question.insert(question1);

        response.put("questions",question);
}
else if(msg.containsIgnoreCase("End"))
{
        response.put("action","context");
        response.put("context_id","QuitChat");
```

```
        star = {"type":"star-rating","level":"5"};
        question1 = {"name":"FoodQueries","replies":{{"text":"Thank you 🔶","image":"https://cur.glitter-graphics.net/pub/3625/3625215ll379wgzp9.gif","image_position":"fit"},"Kindly give valuable feedback for our improvement🔶"},"input":star};
        question = Collection();
        question.insert(question1);
        response.put("questions",question);
}

else if(msg.containsIgnoreCase("HI"))
{
        response.put("replies",{{"text":"Hi there !What can I do for youGGG"}});
        response.put("suggestions",{"Suggest me a delicious food🔶","Dionysus the Nutritionist 🔶Ask me anything?","Dionysus the chef - Ask recipes"," Suggest me a diet Chart","Search by Cuisine ","Order food with Dionysus🔶","Restaurant near me📍","End chat🔶"});
}
else
{

        response.put("replies",{{"text":"Sorry I didn't get you","image":"https://img.buzzfeed.com/buzzfeed-static/static/2020-07/24/21/asset/3fd2751e84e2/anigif_sub-buzz-2055-1595624868-24.gif","image_position":"fit"},"What can i do for youGG"});
        response.put("suggestions",{"Suggest me a delicious food🔶","Dionysus the Nutritionist 🔶Ask me anything?","Dionysus the chef - Ask recipes"," Suggest me
```

a diet Chart","Search by Cuisine ","Order food with Dionysus","Restaurant near me","End chat"});

}

return response;

5.2.3. TRIGGER HANDLER

response = Map();

response.put("action","reply");

// Random Food Facts

food_facts = {"AppleSauce was the first food eaten in space.","Potatoes were the first food planted in space","Pistachios aren't nuts—they are actually fruits.","Broccoli contains more protein than steak!","Raspberries are a member of the rose family.","Cucumbers are 95% water.","Honey is basically bee vomit. Forager bees regurgitate it.","Figs aren't fruits, they are flowers. ","Chocolate was once used as currency. ","White chocolate isn't actually chocolate.","Potatoes can absorb and reflect radio wave signals. "};

rand = randomNumber(0,food_facts.size());

// Initail Trigger Response:

response.put("replies",{{"text":"Did You Know GG","image":"https://blog.aweber.com/wp-content/uploads/2022/08/watermelon-fruit-animated-

aweber.gif","image_position":"fit"},food_facts.get(rand),"Hello. It's always great to be of assistance","What can I do for youGGG"});

response.put("suggestions",{"Suggest me a delicious food","Dionysus the Nutritionist","Ask me anything?","Dionysus the chef - Ask recipes"," Suggestme a diet Chart","Search by Cuisine","Order food with Dionysus ","Restaurant near me","End chat"});

return response;

//Api testing

// info "hello world";

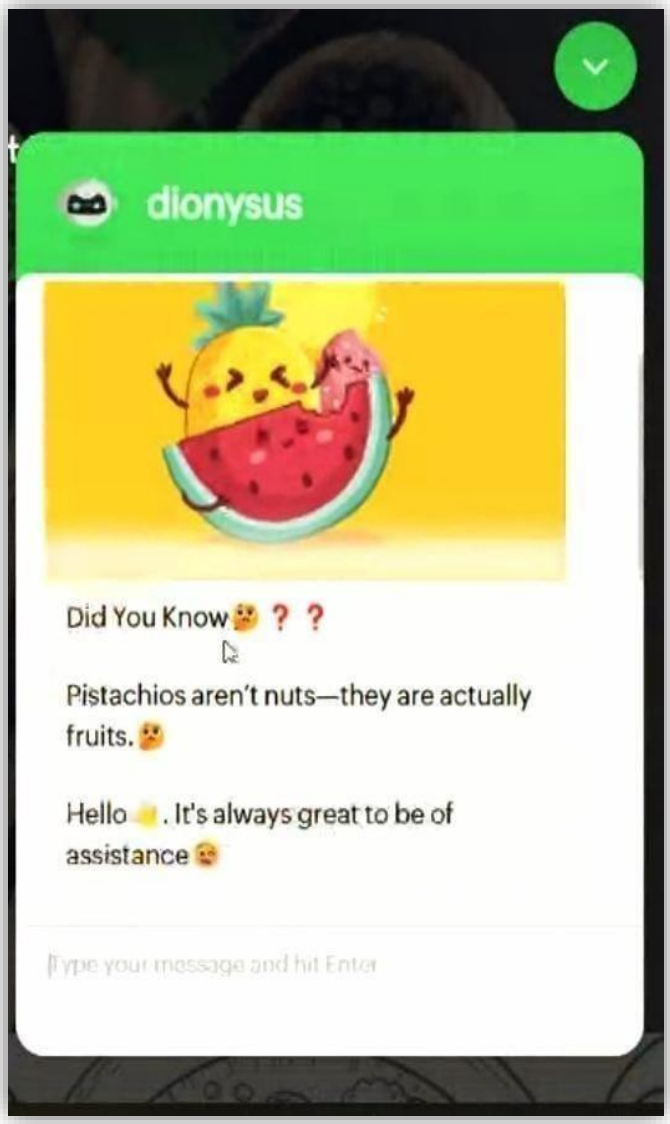
// header = {"X-RapidAPI-Key":"aaca3ec659mshad008fe7e5c8ba6p1edbe3jsn339f33687426","X-RapidAPI-Host":"spoonacular-recipe-food-nutrition-v1.p.rapidapi.com"};

// api = getUrl("https://serpapi.com/search.json?q=McDonald's&location=austin,+texas,+united+states&tbm=lcl");

// info api;

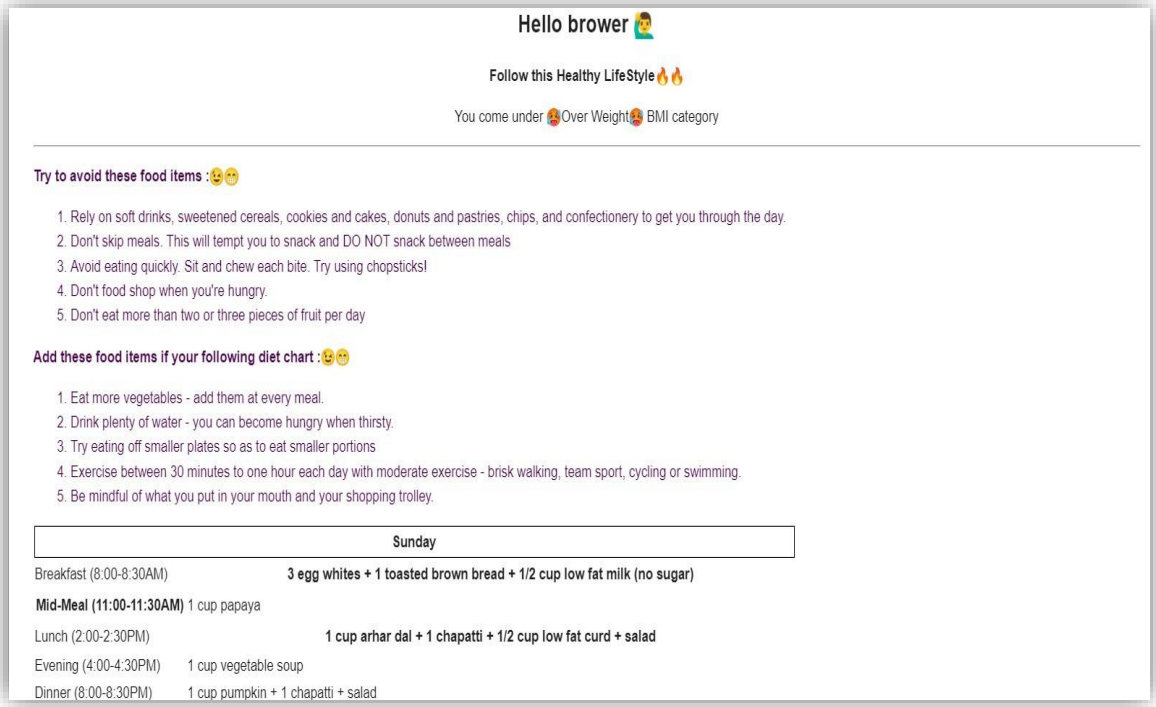
5.3 SAMPLE SCREENSHOT

Fig(5.3a)- Outlook



Fig(5.3b)- Chat-Bot

Fig(5.3c)- Facts Block



Hello brower

Follow this Healthy LifeStyle

You come under Over Weight BMI category

Try to avoid these food items :

1. Rely on soft drinks, sweetened cereals, cookies and cakes, donuts and pastries, chips, and confectionery to get you through the day.
2. Don't skip meals. This will tempt you to snack and DO NOT snack between meals
3. Avoid eating quickly. Sit and chew each bite. Try using chopsticks!
4. Don't food shop when you're hungry.
5. Don't eat more than two or three pieces of fruit per day

Add these food items if your following diet chart :

1. Eat more vegetables - add them at every meal.
2. Drink plenty of water - you can become hungry when thirsty.
3. Try eating off smaller plates so as to eat smaller portions
4. Exercise between 30 minutes to one hour each day with moderate exercise - brisk walking, team sport, cycling or swimming.
5. Be mindful of what you put in your mouth and your shopping trolley.

Sunday	
Breakfast (8:00-8:30AM)	**3 egg whites + 1 toasted brown bread + 1/2 cup low fat milk (no sugar)**
Mid-Meal (11:00-11:30AM) 1 cup papaya	
Lunch (2:00-2:30PM)	**1 cup arhar dal + 1 chapatti + 1/2 cup low fat curd + salad**
Evening (4:00-4:30PM)	1 cup vegetable soup
Dinner (8:00-8:30PM)	1 cup pumpkin + 1 chapatti + salad

Fig(5.3d)- Food Prediction

Food Order Details📝

From: Dionysus Food DeliveryPartner🤩

To: Detroit Engineered Products, 2/86, 27th St, CMWSSB Division 132, Ward 132, Zone 10 Kodambakkam, Chennai, Chennai district, Tamil Nadu, 600083, India

---

🔥**Order Summary**🔥

Order ID : #100011

Misal(veg): ₹200
Ras Malai(veg): ₹210

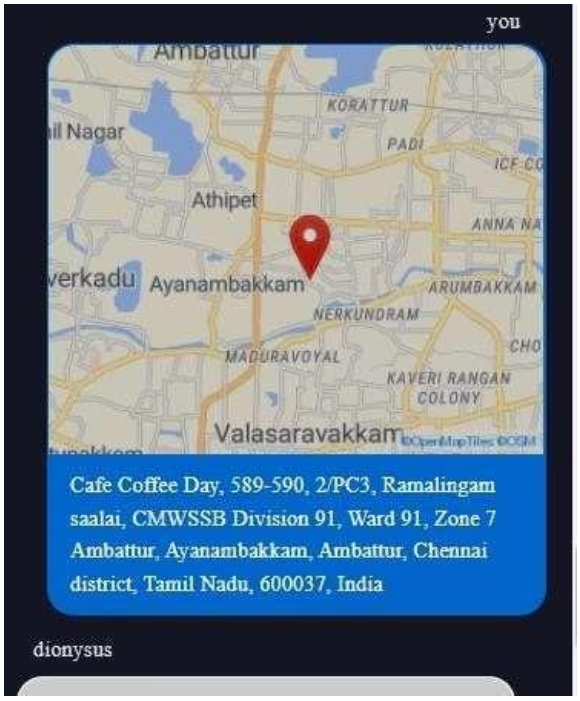
Discount Reduction : 0

Total Bill Amount :₹410

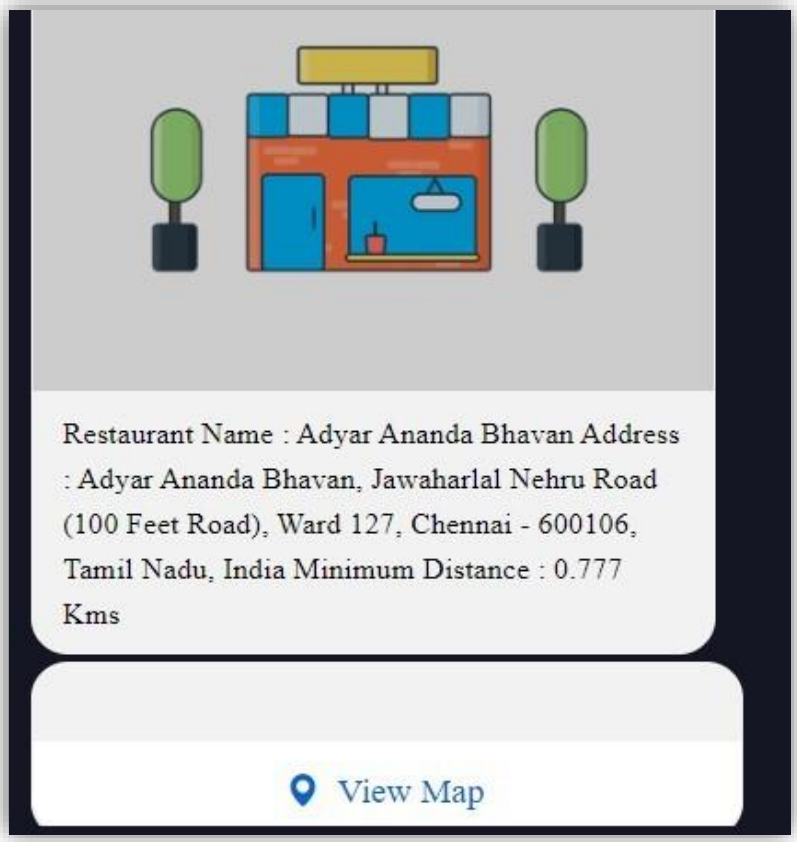
Order Placed at : 09-Nov-2022 21:18:53

✅**Order Confirmed**✅

Fig(5.3e)- Food Ordering



Fig(5.3f)- Map View



Fig(5.3g)- Restaurant View

6. CONCLUSION

Since we are sure that the Artificial Intelligence is going to rule the future world, the contribution of the bots in this world is going to be huge. Here the Dionysus is playing a vital role in all the food delivery apps and it is capable of fitting in all the food delivery apps too. The main feature provided by the Dionysus that other food delivery apps doesn't provide is the food suggestion based on health condition. This is considered as on the primary outcome of the project DIONYSUS. Apart from this the other outcomes of the Dionysus is the exact prediction of the food by your taste of preferences, ordering food based on CRM, selecting the food based on the cuisines, searching for any kind of facts about the food based on the specified format, also we will be able to ask for the recipes to the DIONYSUS based on the ingredients we have in the specified format. Here we can ask for the restaurants near our zone(i.e., the kilometers specified by us) to the bot by filling the details required by it. This website with the bot will not only be suitable for the Food sector but also the bots can be designed for all the day-to-day applications. Hereby we conclude that the bots play a vital in providing customer support in various aspects, especially when it comes to food sector it is mandatory that the people will need the support of their delivery partner in huge extent such as the normal functions like ordering food, searching by cuisine. Apart from this the DIONYSUS provides additional functions like healthy food prediction, providing client with food recipe, searching for the nearest restaurant. Once this chat-bot DIONYSUS becomes commercialized we can update its features with the latest technologies as mentioned in the future enhancements. Since the future generation is based artificial intelligence will hope that all the future enhancements we hope are becoming true and creating impact.

7. FUTURE ENHANCEMENTS

The various **future enhancements** that can be done with the DIONYSUS are as follows;

- Using future tools we can develop the visual appearance of the bot more attractive.
- we can make sure that the bot can be perfect for the devices with all the resolution.
- Various other features like the temperature based food prediction can be implemented.
- Apart from BMI based disease prediction, other condition like allergy for foods of the customer can be predicted.
- Various other cuisines can be added to the DIONYSUS based on the region in which it is used.
- Speech recognition can be introduced in future based on the advancements of the new tools.
- Future enhancements in the field of sentiment analysis can be implemented in the DIONYSUS.

8. REFERENCES

[1] Gkinko, L., & Elbanna, A. (2023). The appropriation of conversational AI in the workplace: a taxonomy of AIchatbot users. *International Journal of Information Management*, *69*, 102568.

[2] Luo, B., Lau, R. Y., Li, C., & Si, Y. W. (2022). A critical review of state-of-the-art chatbot designs andapplications. *Wiley Interdisciplinary Reviews: Data Mining and Knowledge Discovery*, *12*(1), e1434.

[3] Amiri, P., & Karahanna, E. (2022). Chatbot use cases in the Covid-19 public health response. *Journal of theAmerican Medical Informatics Association*, *29*(5), 1000-1010.

[4] Crolic, C., Thomaz, F., Hadi, R., & Stephen, A. T. (2022). Blame the bot: anthropomorphism and anger incustomer–chatbot interactions. *Journal of Marketing*, *86*(1), 132-148.

[5] Nißen, M., Selimi, D., Janssen, A., Cardona, D. R., Breitner, M. H., Kowatsch, T., & von Wangenheim, F. (2022). See you soon again, chatbot? A design taxonomy to characterize user-chatbot relationships with different time horizons. *Computers in Human Behavior*, *127*, 107043.

[6] Crolic, C., Thomaz, F., Hadi, R., & Stephen, A. T. (2022). Blame the bot: anthropomorphism and anger in customer–chatbot interactions. *Journal of Marketing*, *86*(1), 132-148.

[7] Crolic, C., Thomaz, F., Hadi, R., & Stephen, A. T. (2022). Blame the bot: anthropomorphism and anger in customer–chatbot interactions. *Journal of Marketing*, *86*(1), 132-148.

[8] Diaa Salama AbdElminaam and noha ElMasry, "HR-Chat bot: Designing and Building Effective Interview Chat-bots for Fake CV Detection", National University of Singapore, July 03, IEEE 2021.

[9] Sai Sharath and Banafsheh, " Conversational Question Answering Over Knowledge Base using Chat-Bot Framework", 978-1-7281-8899-7/21, IEEE 2021.

[10] Mozafari, N., Weiger, W. H., & Hammerschmidt, M. (2021). Trust me, I'm a bot–repercussions of chatbot disclosure in different service frontline settings. *Journal of Service Management*, *33*(2), 221-245.

[11] Herriman, M., Meer, E., Rosin, R., Lee, V., Washington, V., & Volpp, K. G. (2020). Asked and answered: Building a chatbot to address covid-19-related concerns. *NEJM Catalyst Innovations in Care Delivery*, *1*(3).

[12] Thorat, S. A., & Jadhav, V. (2020, April). A review on implementation issues of rule-based chatbot systems. In *Proceedings of the international conference on innovative computing & communications (ICICC)*.

[13] Lee, Y. C., Yamashita, N., Huang, Y., & Fu, W. (2020, April). " I Hear You, I Feel You": encouraging deep self-disclosure through a chatbot. In *Proceedings of the 2020 CHI conference on human factors in computing systems* (pp. 1-12).

[14] Kim, S., Eun, J., Oh, C., Suh, B., & Lee, J. (2020, April). Bot in the bunch: Facilitating group chat discussion by improving efficiency and participation with a chatbot. In *Proceedings of the 2020 CHI Conference on HumanFactors in Computing Systems* (pp. 1-13).

[15] Przegalinska, A., Ciechanowski, L., Stroz, A., Gloor, P., & Mazurek, G. (2019). In bot we trust: A new methodology of chatbot performance measures. *Business Horizons*, *62*(6), 785-797.

[16] Anna Hjalmarsson and Marten Bjorkman, " A Sentiment-based chat bot for automatic twitter replies with python", 2019 IEEE.

[17] Kvale, K., Sell, O. A., Hodnebrog, S., & Følstad, A. (2020). Improving conversations: lessons learnt from manual analysis of chatbot dialogues. In *Chatbot Research and Design: Third International Workshop, CONVERSATIONS 2019, Amsterdam, The Netherlands, November 19–20, 2019, Revised Selected Papers 3* (pp.187-200). Springer International Publishing.

[18] Adamopoulou, E., & Moussiades, L. (2020). An overview of chatbot technology. In *Artificial Intelligence Applications and Innovations: 16th IFIP WG 12.5 International Conference, AIAI 2020, Neos Marmaras, Greece, June 5–7, 2020, Proceedings, Part II 16* (pp. 373-383). Springer International Publishing.

[19] Anupam Mondal and Monalisa Dey, " Chatbot: An automated conversation system for the educational domain",Jadavpur University, Kolkata, India, 978-1-7281-0164-4/18, 2018 IEEE.

[20] Sayali Hulawale and Sahil pandita, "Chat-bot for College Management System using Artificial Intelligence",Bharati Vidyapeeth's college of Engineering, Pune, Maharastra, India, 2017 IRJET.