

KONVERSATION

A

Mini Project Report

*Submitted in partial fulfilment of the
Requirements for the award of the Degree of*

BACHELOR OF ENGINEERING

IN

INFORMATION TECHNOLOGY

By

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Department of Information Technology

Vasavi College of Engineering (Autonomous)

VASAVI COLLEGE OF ENGINEERING (AUTONOMOUS)

(AFFILIATED TO OSMANIA UNIVERSITY)

HYDERABAD - 500 030

Department of Information Technology



DECLARATION BY CANDIDATE

We, **<SRIPRIYA MATURI>**, **<ROSHINI JOGA>**, **<SANJAY THULLURU>**, bearing hall ticket number, **<1602-19-737-018>**, **<1602-19-737-035>**, **<1602-19-737-037>** hereby declare that the project report entitled **<"KONVERSATION">** Department of Information Technology, Vasavi College of Engineering, Hyderabad, is submitted in partial fulfillment of the requirement for the award of the degree of **Bachelor of Engineering** in **Information Technology**

This is a record of bonafide work carried out by me and the results embodied in this project report has not been submitted to any other university or institute for the award of any other degree or diploma.

<SRIPRIYA MATURI><1602-19-737-018>

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BONAFIDE CERTIFICATE

This is to certify that the project entitled “**KONVERSATION**” being submitted by **SRIPRIYA, ROSHINI, SANJAY** bearing **1602-19-737-018, 1602-19-737-035, 1602-19-737-037**, in partial fulfillment of the requirements for the completion of MINI PROJECT of Bachelor of Engineering in Information Technology is a record of bonafide work carried out by them under my guidance.

Leelavathy B

Internal Guide

K. Ram Mohan Rao

HOD, IT

ACKNOWLEDGEMENT

We thank the department of INFORMATION TECHNOLOGY, for introducing the subject “Mini Project-2” in BE fifth semester.

We would also like to show our appreciation to our Honorable principal, Dr S V Ramana sir, our HOD K. Ram Mohan Rao for supporting us and our mini project lecturer, Mrs Leelavathy mam, for letting us properly understand the process of doing a project and for providing valuable insight and expertise that has greatly assisted us in the making of the project.

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ABSTRACT

- The VCE website is an informative tool that serves many purposes for different kinds of users.
- A chatbot would be a great addition to our college's website. This will make the website even more appealing.
- The service provided by this chatbot will make the user's job easy through providing a lively interaction and by solving all of their queries. It will make it seem as though a lot of information placed across the website is within one's grasp.
- Students can utilize this feature to access grades, attendance, remind themselves of deadlines and also to place different kinds of queries. Similar services can also be availed by the faculty members.
- The chatbot can act as a campus guide and give a fulfilled experience to the website visitors.
- All in all, chatbots give their users an experience as if they were conversing with a real human being and hence here is our chatbot for VCE, konVersation.

CHAPTER 1

INTRODUCTION

What is a chatbot?

A chatbot is a programmed chat interface a website visitor can interact with. They are programmed to closely mimic human behaviour and interact with the website visitor in a conversational manner. Chatbots are one of the best way to reach out to the customer base. Chatbots are not just a better way of reaching customers for companies but are more sort of efficient and intelligent assistants. Chatbots have found their applications in various fields like Marketing, Supporting systems, Education, Health care and Entertainment.

Why does a website need a chatbot?

1. Chatbots Simplify Things
2. Chatbots Are Always There For Us
3. Chatbots Make Things Better
4. Chatbots Build Brand Trust

1.1 PURPOSE

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

1.2 INTENDED AUDIENCE

The intended audience for this project is everyone who wants to know about Vasavi College of Engineering.

Any college website will have two types of users-

1. Students and faculty
2. Website visitors either for inquiry or gathering information.

1.3 PRODUCT SCOPE

Chatbots have **an ability to engage visitors**. They can also foster a relationship between customer and brands, and deliver a more personalized experience. Bots impart information about new product launches and timely updates to the customers.

1.4 PROBLEM DEFINATION

The VCE website is an informative tool that serves many purposes for different kinds of users. A chatbot would be a great addition to Vasavi's website. This will make the website even more appealing. So, the way to do this is to have a good interactive website in the advanced world of digital marketing. Maybe a comment section is an answer to solving the many queries website administrators get, but it's tedious work, and 'time is money'; your visitor will not wait too long for your response. And you cannot assign humans to answer everyone at the same time twenty-four by seven. So for that you need a chatbot.

CHAPTER 2

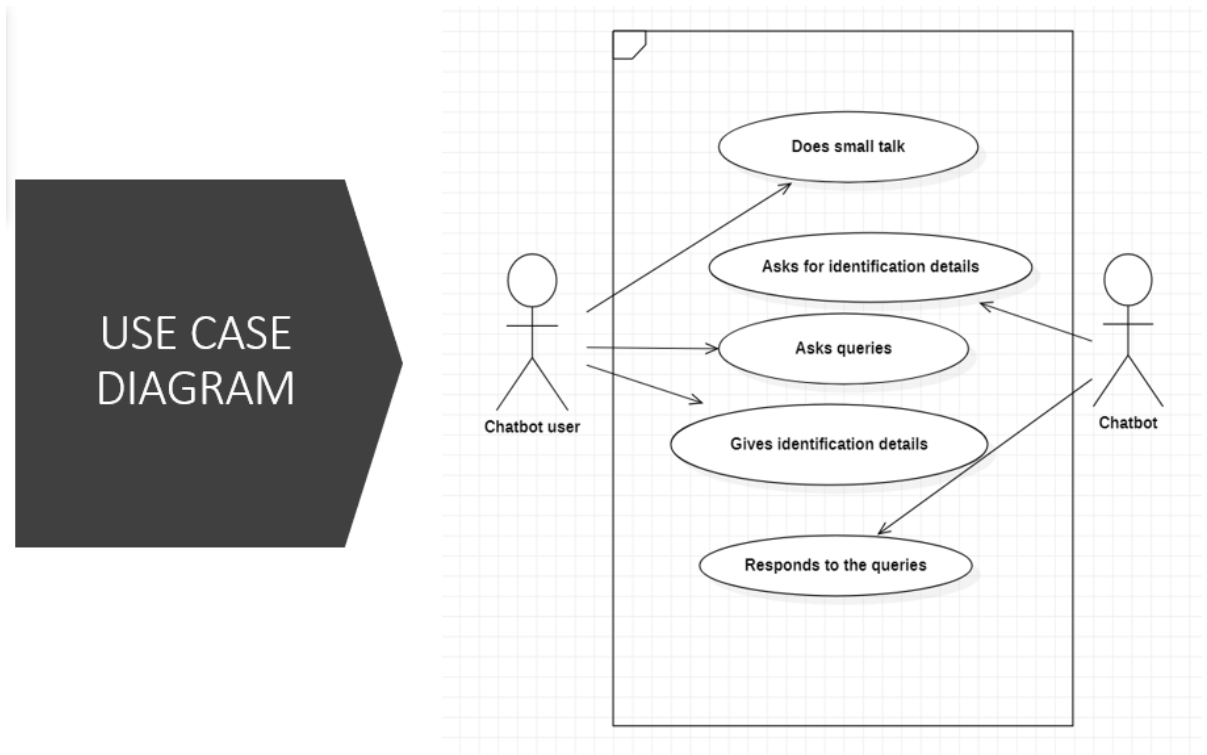
RELATED WORK –

There has been a lot of notable work in the chatbot domain in the past few years. Various companies use chatbots for engaging their customer base. Our chatbot “konVersation” is specifically designed and trained to assist the users of VCE's website. Similar chatbots have not been made in the past and this is what makes konVersation unique.

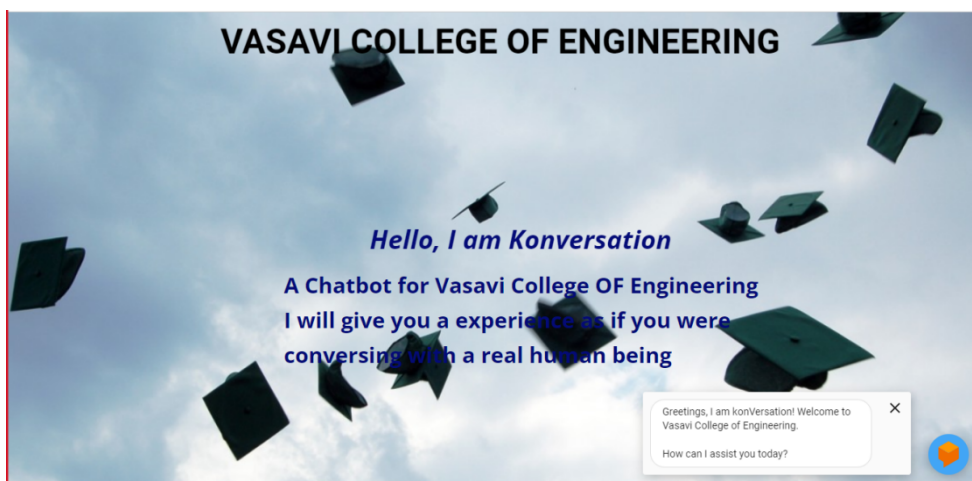
CHAPTER 3

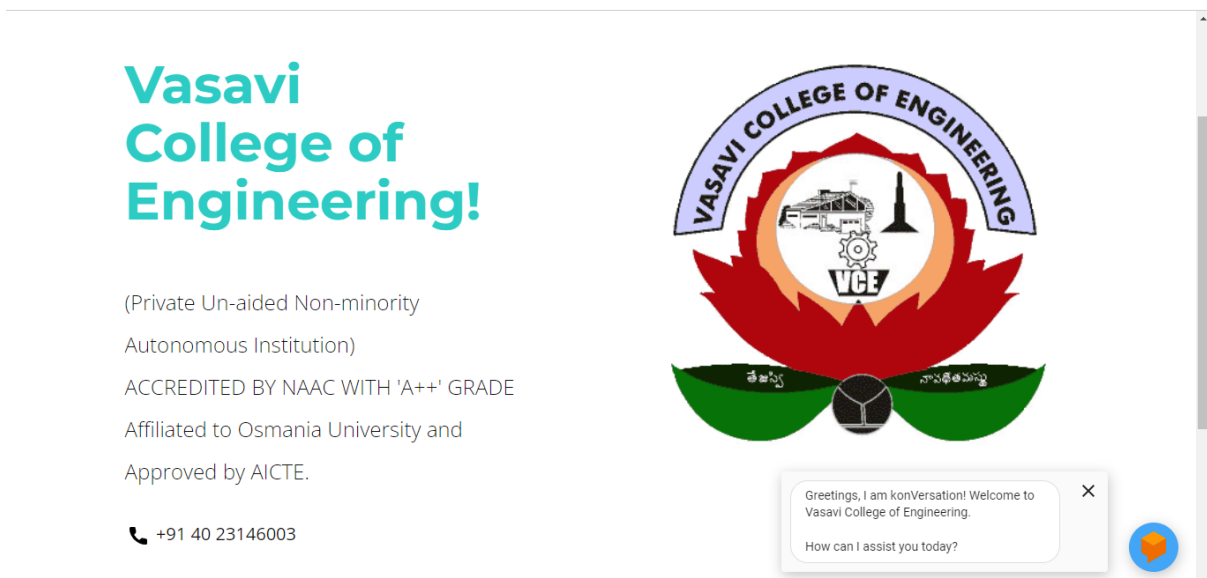
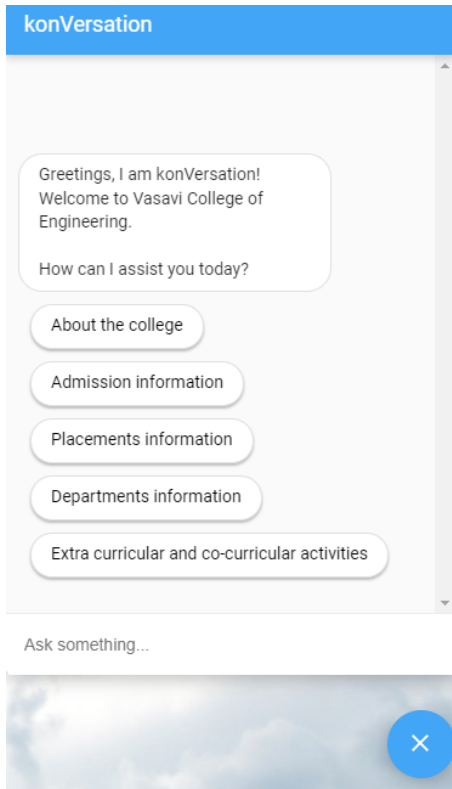
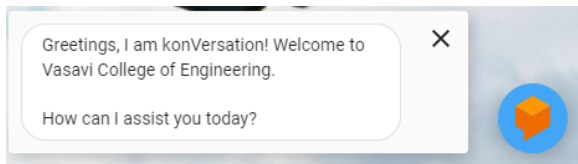
PROPOSED WORK –

3.1 Use cases –

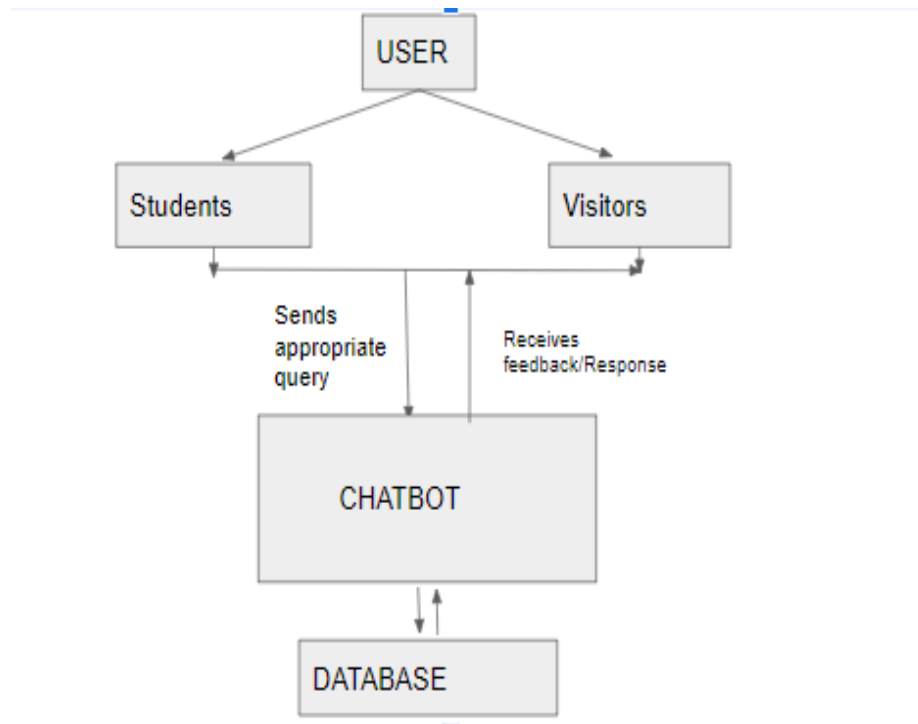


3.2 UI prototypes or screenshots





3.3 Architecture and Technology used –



Technology used –

The tool using which the chatbot ‘konVersion’ was made is DialogFlow.

Dialogflow is a Google-owned developer of human–computer interaction technologies based on natural language conversations. The company is best known for creating the Assistant Speaktioit, a virtual buddy for Android, iOS, and Windows Phone smartphones that performs tasks and answers users’ question in a natural language.

User- A user is any human being who uses the chatbot technology. They can play any role: owning the chatbot, developing the bot, or interacting with the same. As long as they are human, they are termed ‘user’.

Agent-An agent is merely another term used to refer to the chatbot. Sometimes people say ‘agent’ when referring to the processing module within the application that enables discussions with the chatbot. And sometimes, it is another way to refer to the bot since it functions ‘like a support agent’. The context will always be clear enough for you know what they mean.

Expressions – Expressions/Training Phrases are the dialogues/utterances that people say when they interact with a bot. They represent a user’s desire and are often in the form of a question. For example –

- “Where is Vasavi College of Engineering?”
- “Hand me the recent placements details”

Intent - ‘Intents’ are how a chatbot understands Expressions.

We just saw how varied Expressions can be while still meaning the same thing. This *meaning* is termed as an *Intent*, wherein we extract what the user *intends* to say through his/her Expression.

Entities:

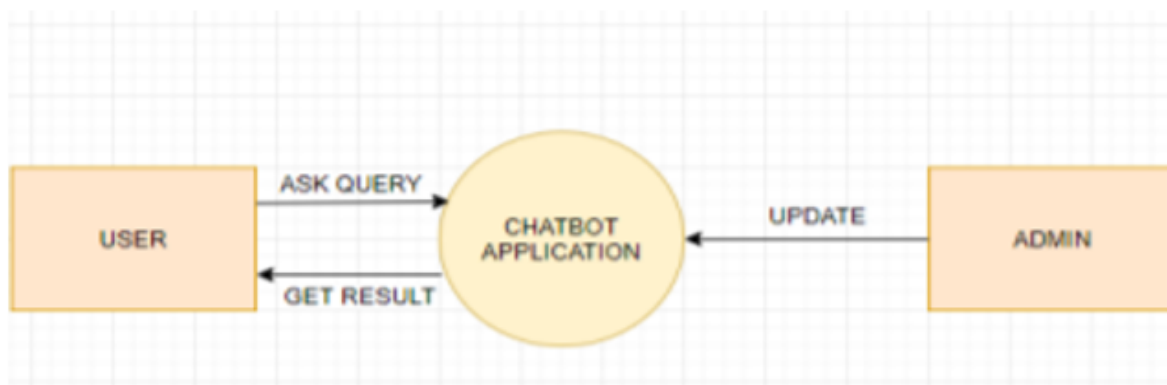
Entities’ are Dialogflow’s mechanism for identifying and extracting useful data from natural language inputs.

An Intent limits the bot to the scope of the user input. Entities enable it to extract specific pieces of information from your users. This can be anything from burger toppings to appointment dates. Basically, if there is any important data you want to get from the user, you will use a corresponding entity.

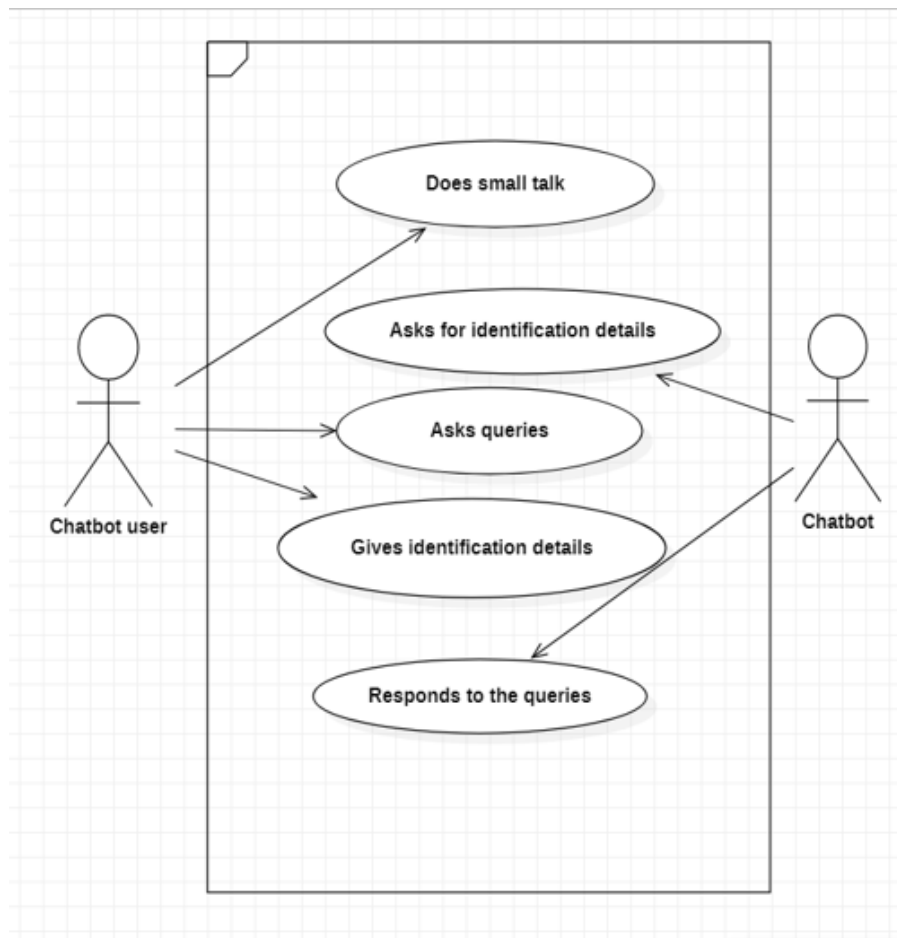
Response: This is the chatbot’s output that is aimed at satisfying the user’s intent. The most accurate responses occur when a proper range of expressions have been correctly grouped into Intents. Accurate and simple responses are important traits for a good chatbot.

3.4 Design –

DATA FLOW DIAGRAM



USE CASE DIAGRAM



3.5 Implementation –

At its current stage, the chatbot is trained to answer various kinds of queries posed by outside visitors.

3.5.1 – Modules :

The various intents the chatbot is trained on are –

3.5.1.1 – Default welcome intent –

matched when an end-user begins a conversation with your agent.

3.5.1.2 – Default fallback intent –

matched when your agent doesn't recognize an end-user expression.

3.5.1.3 – Other Intents –

These are the various possible queries a user who is not a part of the organization could ask.

Some of the intents under this category are –

About college

Placements

Admissions

Departments information

Transport information

College events

Co-curricular activities

Extra-curricular activities, etc

3.5.1.4 – Email module –

An interesting feature about the chatbot is its ability to send emails.

Users who wish to get more information about the admission process can give their email address to receive a mail about the detailed admission procedure.

3.5.1.5 – Small talk module –

The chatbot ‘konVersation’ engages in small talk with its users as well.

3.5.1.6 - Student module -

Our chatbot offers additional features for the students of VCE. Given the roll number and password, a student can get access to details like his/her attendance, scores, fee reminders, etc.

3.5.2 – Algorithm used –

Dialogflow uses two algorithms to match intents: *rule-based grammar matching* and *ML matching*. Dialogflow simultaneously attempts both algorithms and chooses the best result.

When searching for a matching intent, Dialogflow scores potential matches with an *intent detection confidence*, also known as the *confidence score*. These values range from 0.0 (completely uncertain) to 1.0 (completely certain).

3.5.3 – Code –

```
// See https://github.com/dialogflow/dialogflow-fulfillment-nodejs  
// for Dialogflow fulfillment library docs, samples, and to report issues
```

```
'use strict';
```

```
const functions = require('firebase-functions');
```

```
const {WebhookClient} = require('dialogflow-fulfillment');
```

```
const {Card, Suggestion} = require('dialogflow-fulfillment');
```

```
process.env.DEBUG = 'dialogflow:debug'; // enables lib debugging statements
```

```
process.env.SENDGRID_API_KEY='SG.9fXQLZ9xTWWeZEZR-hEpPw.3e7_0CDop7  
ODXK8Y0X3hZBnsUw1C56n0QIz5_wRwOC0';
```

```
exports.dialogflowFirebaseFulfillment = functions.https.onRequest((request,  
response) => {
```

```
  const agent = new WebhookClient({ request, response });
```

```
  console.log('Dialogflow Request headers: ' + JSON.stringify(request.headers));
```

```
  console.log('Dialogflow Request body: ' + JSON.stringify(request.body));
```

```
  function welcome(agent) {
```

```
    agent.add(`Welcome to my agent!`);
```

```
  }
```

```
  function fallback(agent) {
```

```
    agent.add(`I didn't understand`);
```

```
    agent.add(`I'm sorry, can you try again?`);
```

```
  }
```

```

function sendemail(agent){
    const sgMail = require('@sendgrid/mail');
    sgMail.setApiKey(process.env.SENDGRID_API_KEY);
    const emailparam = agent.parameters.email;
    const msg = {
        to: emailparam, // Change to your recipient
        from: 'sripriyamaturi8@gmail.com', // Change to your verified
sender
        subject: 'Vasavi College of engineering - Admission details',
        text: 'Here is the admission manual.',
        html: '<strong>Link to the manual -
<href>https://drive.google.com/file/d/1p_TgVog3mqoGPzhVFv_F8SAaji-c0w5f/
view?usp=sharing</href><br> Thank you.<br>regards,<br>Vasavi college of
engineering</strong>'
    };
    console.log(msg);
    sgMail.send(msg);
    agent.add('We hope you have received the email with detailed
procedure. Keep the conversation going');
}

```

```

// // Uncomment and edit to make your own intent handler
// // uncomment `intentMap.set('your intent name here',
yourFunctionHandler);`
// // below to get this function to be run when a Dialogflow intent is matched
// function yourFunctionHandler(agent) {
//     agent.add(`This message is from Dialogflow's Cloud Functions for Firebase
editor!`);

```



```
// agent.add(new Card({
//   title: `Title: this is a card title`,
//   imageUrl:
'https://developers.google.com/actions/images/badges/XPM_BADGING_GoogleAssistant_VER.png',
//   text: `This is the body text of a card. You can even use line\n breaks and emoji! 🙋`,
//   buttonText: 'This is a button',
//   buttonUrl: 'https://assistant.google.com/'
// })
// );
// agent.add(new Suggestion(`Quick Reply`));
// agent.add(new Suggestion(`Suggestion`));
// agent.setContext({ name: 'weather', lifespan: 2, parameters: { city: 'Rome'
}});
// }
```

```
// // Uncomment and edit to make your own Google Assistant intent handler
// // uncomment `intentMap.set('your intent name here',
googleAssistantHandler);`
```

```
// // below to get this function to be run when a Dialogflow intent is matched
```

```
// function googleAssistantHandler(agent) {
//   let conv = agent.conv(); // Get Actions on Google library conv instance
//   conv.ask('Hello from the Actions on Google client library!') // Use Actions
on Google library
//   agent.add(conv); // Add Actions on Google library responses to your
agent's response
// }
```

```
// // See https://github.com/dialogflow/fulfillment-actions-library-nodejs
```

```
// // for a complete Dialogflow fulfillment library Actions on Google client  
library v2 integration sample
```

```
// Run the proper function handler based on the matched Dialogflow intent  
name
```

```
let intentMap = new Map();  
intentMap.set('getEmail', sendemail);  
intentMap.set('Default Welcome Intent', welcome);  
intentMap.set('Default Fallback Intent', fallback);  
// intentMap.set('your intent name here', yourFunctionHandler);  
// intentMap.set('your intent name here', googleAssistantHandler);  
agent.handleRequest(intentMap);  
});
```

```
{  
  "name": "dialogflowFirebaseFulfillment",  
  "description": "This is the default fulfillment for a Dialogflow agents using  
Cloud Functions for Firebase",  
  "version": "0.0.1",  
  "private": true,  
  "license": "Apache Version 2.0",  
  "author": "Google Inc.",  
  "engines": {  
    "node": "10"  
  },  
  "scripts": {  
    "start": "firebase serve --only functions:dialogflowFirebaseFulfillment",  
    "deploy": "firebase deploy --only functions:dialogflowFirebaseFulfillment"
```

```
    },  
    "dependencies": {  
      "actions-on-google": "^2.2.0",  
      "firebase-admin": "^5.13.1",  
      "firebase-functions": "^2.0.2",  
      "dialogflow": "^0.6.0",  
      "dialogflow-fulfillment": "^0.5.0",  
      "@sendgrid/mail": "^7.6.0"  
    }  
  }  
}
```

```
{  
  "richText": [  
    [  
      {  
        "icon": {  
          "color": "hashtagFF9800",  
          "type": "link"  
        },  
        "type": "button",  
        "link": "https://www.vce.ac.in/CampusLife/Extramural.cshtml",  
        "text": "Click here for extracurricular activities information"  
      }  
    ]  
  ]  
}
```

```
{
```

```
"richContent": [  
  [  
    {  
      "type": "chips",  
      "options": [  
        {  
          "text": "Clubs"  
        },  
        {  
          "text": "Social work."  
        },  
        {  
          "text": "Cultural fests"  
        },  
        {  
          "text": "Admission information"  
        }  
      ]  
    }  
  ]  
]
```

<!DOCTYPE html>

<html style="font-size: 16px;">

<head>

<meta name="viewport" content="width=device-width, initial-scale=1.0">

<meta charset="utf-8">

```

<meta name="keywords" content="VASAVI COLLEGE OF ENGINEERING">
<meta name="description" content="">
<meta name="page_type" content="np-template-header-footer-from-plugin">
<title>Page 2</title>
<link rel="stylesheet" href="nicepage.css" media="screen">
<link rel="stylesheet" href="Page-2.css" media="screen">
<script class="u-script" type="text/javascript" src="jquery.js"
defer=""></script>
<script class="u-script" type="text/javascript" src="nicepage.js"
defer=""></script>
<meta name="generator" content="Nicepage 4.1.0, nicepage.com">
<link id="u-theme-google-font" rel="stylesheet"
href="https://fonts.googleapis.com/css?family=Roboto:100,100i,300,300i,400,
400i,500,500i,700,700i,900,900i|Open+Sans:300,300i,400,400i,600,600i,700,7
00i,800,800i">

<script
src="https://www.gstatic.com/dialogflow-console/fast/messenger/bootstrap.js
?v=1"></script>
<df-messenger
intent="WELCOME"
chat-title="konVersation"
agent-id="bbe1d962-3d5e-4c2b-9478-f4a5152a768c"
language-code="en"
></df-messenger>
<script type="application/ld+json">{
    "@context": "http://schema.org",
    "@type": "Organization",
    "name": ""

```

```

}</script>

<meta name="theme-color" content="#478ac9">

<meta property="og:title" content="Page 2">

<meta property="og:type" content="website">

</head>

<body class="u-body"><header class="u-clearfix u-header u-header"
id="sec-eb02"><div class="u-clearfix u-sheet u-valign-bottom-lg
u-valign-bottom-md u-valign-bottom-sm u-valign-bottom-xs u-sheet-1">

<h1 class="u-text u-text-black u-text-1" data-animation-name="slideIn"
data-animation-duration="1000" data-animation-direction="Down">VASAVI
COLLEGE OF ENGI<span style="font-weight: 400;"></span>NEERING

</h1>

</div></header>

<section class="u-clearfix u-section-1" id="sec-dbbc">

<div class="u-clearfix u-sheet u-sheet-1">

<p class="u-text u-text-custom-color-6 u-text-default u-text-1"
data-animation-name="zoomIn" data-animation-duration="1000"
data-animation-direction="Down" data-animation-delay="1000">Hello, I am
Konversation</p>

<p class="u-text u-text-custom-color-6 u-text-2">A Chatbot for Vasavi College
OF Engineering<br>I will give you a experience as if you were conversing with a
real human being

</p>

<div class="u-shape u-shape-svg u-text-palette-1-base u-shape-1"
data-animation-name="fadeIn" data-animation-duration="1000"
data-animation-direction="" data-animation-delay="1750">

<svg class="u-svg-link" preserveAspectRatio="none" viewBox="0 0 160 140"
style=""><use xmlns:xlink="http://www.w3.org/1999/xlink"
xlink:href="#svg-494f"></use></svg>

<svg class="u-svg-content" viewBox="0 0 160 140" x="0px" y="0px"
id="svg-494f" style="enable-background:new 0 0 160 140;"><path
d="M90,45H0v50h90v45l70-70L90,0V45z"></path></svg>

```

```
</div>

<p class="u-text u-text-custom-color-6 u-text-3" data-animation-name="fadeIn"
data-animation-duration="1000" data-animation-direction=""
data-animation-delay="1750">Ask me anything here<span style="font-weight:
400;"></span>

</p>

</div>

</section>

</body>

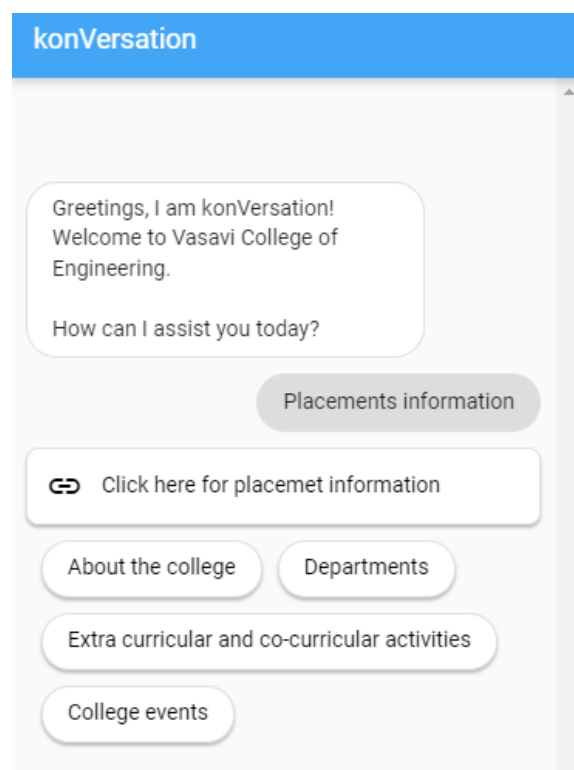
</html>
```

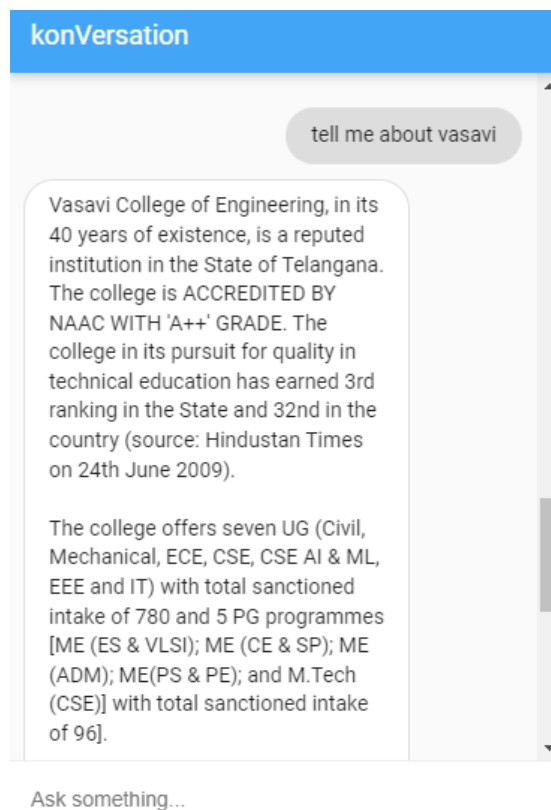
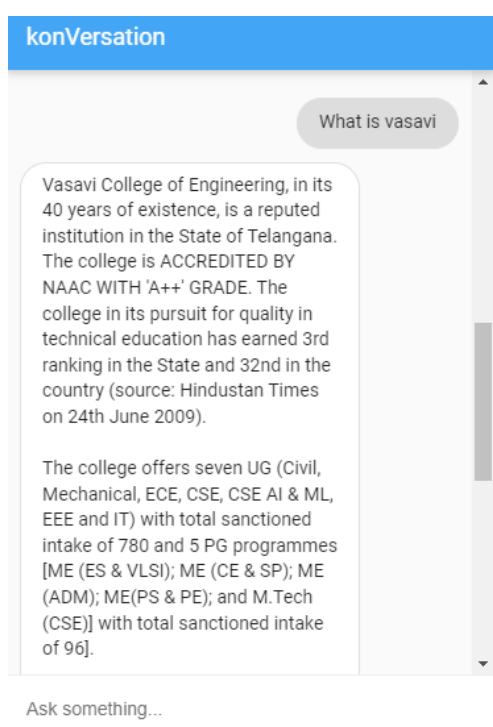
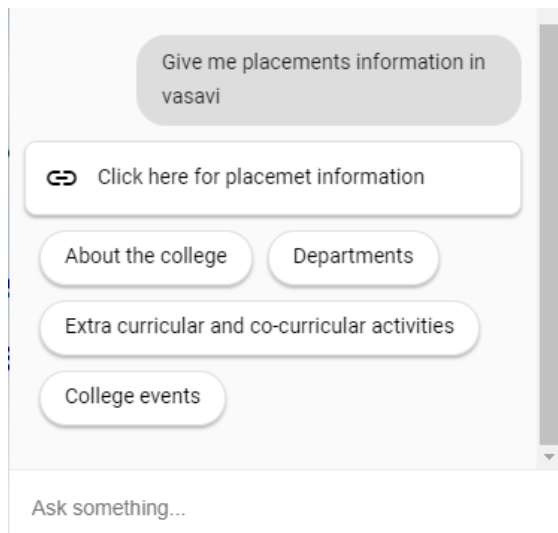
3.5.3 – GitHub Links –

<https://github.com/sanjaydevelop/konverSation>

3.6 – Testing –

A chatbot is giving the desired output only when it gives the same output for the same question posed in different formats.



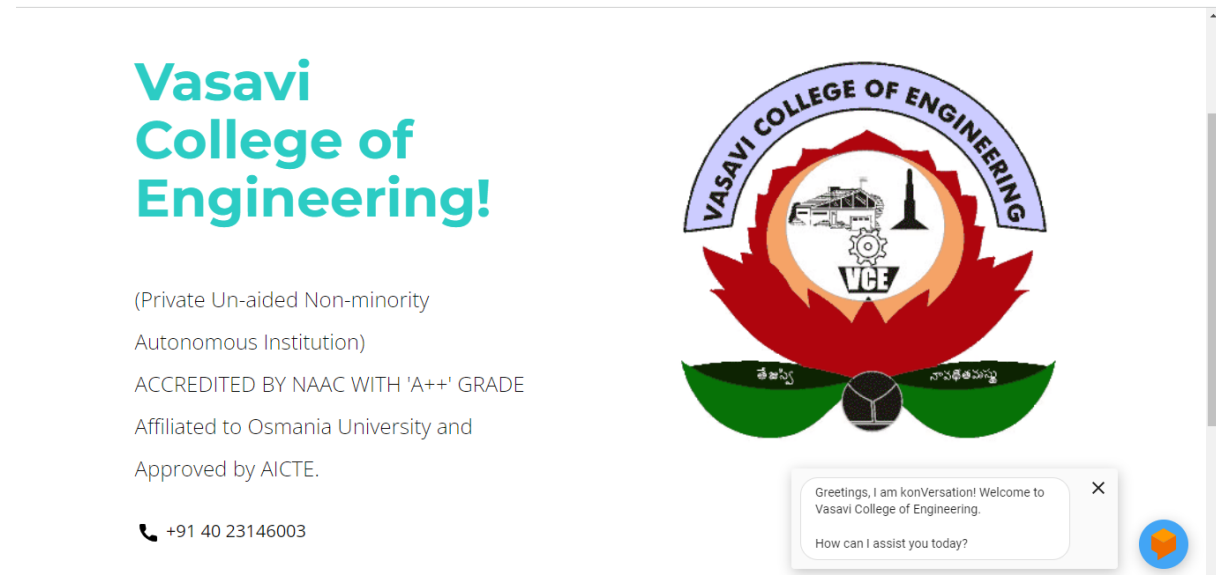


CHAPTER 4 –

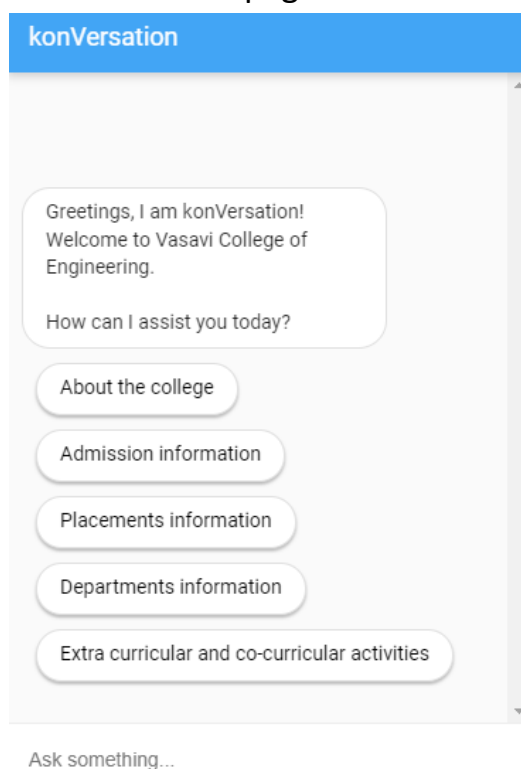
RESULTS

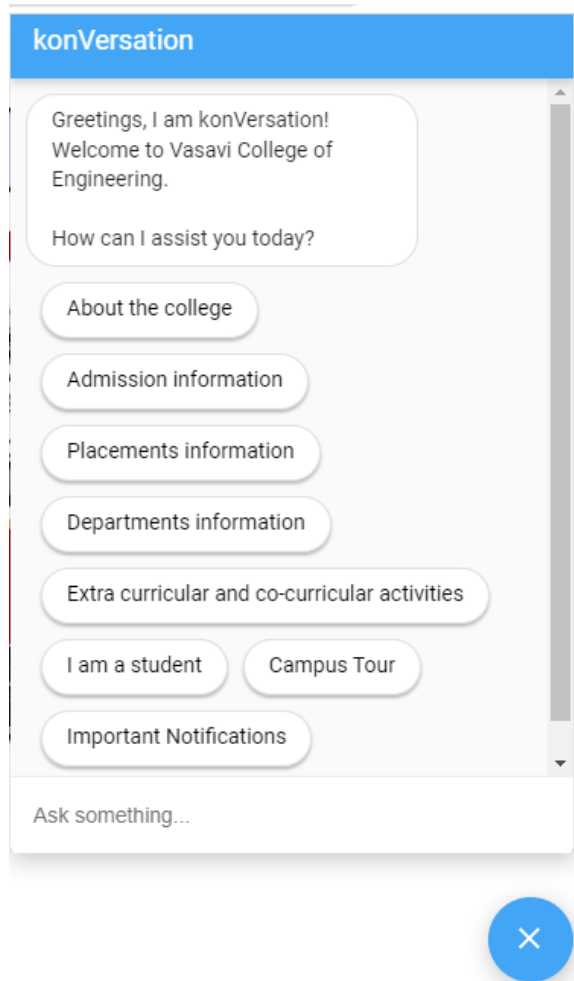
The following are the results obtained after implementation –

UI -



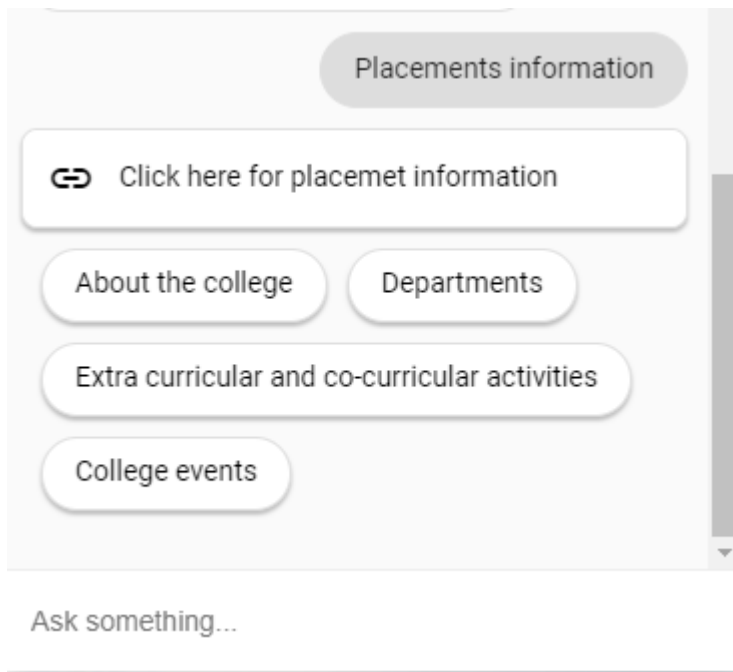
1) Initial welcome page –






There are suggestion chips after every reply consisting of FAQs.

2) Placements information –



The link will redirect to the following page in the vasavi website –

[HOME](#)
[ABOUT](#)
[ACADEMICS](#)
[ADMISSIONS](#)
[ALUMNI](#)
[CAMPUS LIFE](#)
[FACILITIES](#)
[DEPARTMENTS](#)
[TEQIP](#)
[PLACEMENTS](#)
[RESEARCH](#)
[STAFF](#)
[FEEDBACK](#)
[CONTACT](#)


Vasavi College of Engineering (Autonomous), Hyderabad

2020-2021

2019-2020

2018-2019

2017-2018

2016-2017

2015-2016

2014-2015

2013-2014

Bachelor of Engineering (B.E) - Students Placement Information for the Academic Year 2020-2021 as on 18-09-2021

S.No.	Name	CTC	CSE	ECE	EEE	IT	MECH	CIVIL	Total
1	Google	Rs 21.00 Lakhs p.a. + 50,000\$ as stock options	-	-	-	1	-	-	1
2	Uber	Rs 22.75 Lakhs p.a + 41,000\$ as stock options	-	1	-	-	-	-	1
3	Service Now	Internship 40 K per month & Employment Rs 21.00 Lakhs p.a.	5	1	-	4	-	-	10
4	Amazon - Through ACMS	Internship 60 K per month & Employment Rs 21.00 Lakhs p.a.	-	-	-	1	-	-	1
5	CISCO	Internship 60 K per month & Employment Rs 18.00 Lakhs p.a.	2	1	-	1	-	-	4
6	Amazon - Through ACMS (Amazon Campus Mentoring Series) & WOW (Women Of the World)	Internship 60 K per month	4	-	-	3	-	-	7
7	Visa Inc.,	Rs. 15.40 Lakhs p.a.	2	-	-	-	-	-	2
8	Electronic Arts	Rs. 13.24 Lakhs p.a.	1	-	-	1	-	-	2
9	Oracle India Private Ltd., (Vertical : GBU)	Vertical : GBU) (Internship 25 K per month & Employment Rs	20	4	-	6	-	-	30

Information about various other things can also be obtained in a similar fashion.

3) Email feature –

Admission information

To get detailed information about the admission procedure, enter your mail id.

Ask something...

To get detailed information about the admission procedure, enter your mail id.

sanjaysurya2527@gmail.com

We hope you have received the email with detailed procedure. Keep the conversation going

Ask something...

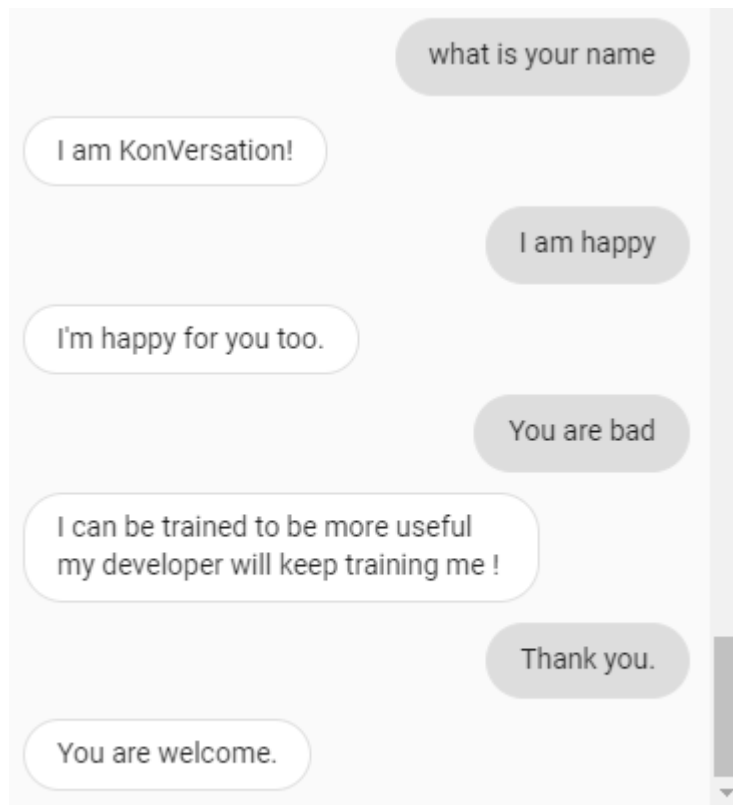
Vasavi College of engineering - Admission details Inbox x Updates x

sripriyamaturi8@gmail.com via sendgrid.net
to me ▾
Link to the manual - https://drive.google.com/file/d/1p_TgVog3mqoGPzhVFv_F8SAaji-c0w5f/view?usp=sharing
Thank you.
regards,
Vasavi college of engineering

Reply

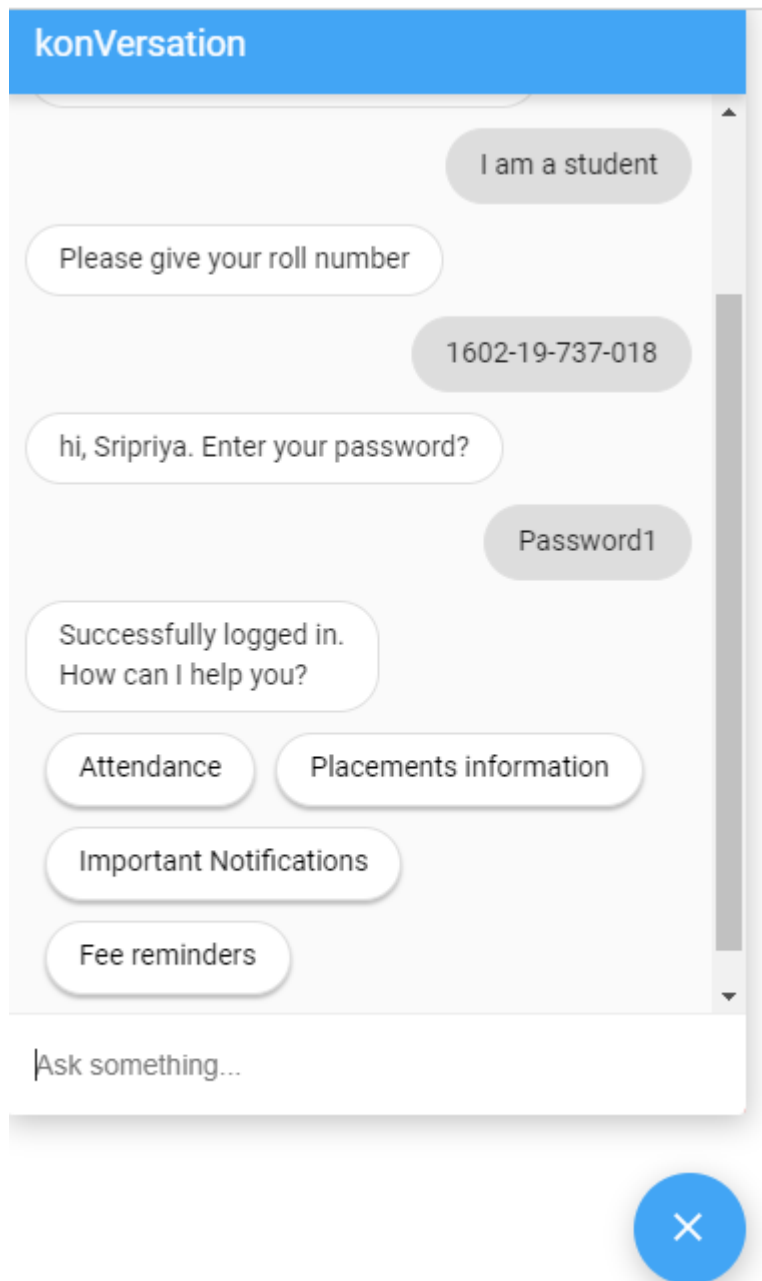
Forward

4) Small talk –



Ask something...

Student Features -



CHAPTER 5

DISCUSSION AND FUTURE WORK –

The chatbot can further be developed and trained to answer many other queries.

It can also be improved to take audio inputs.

The chatbot answers and understands questions posed in English, it can be improved to answer queries in various languages.

CHAPTER 6

REFERENCES –

<https://chatbotsmagazine.com/a-visual-history-of-chatbots-8bf3b31dbfb2>

<https://marutitech.com/build-a-chatbot-using-dialogflow/>

<https://marutitech.com/why-can-chatbots-replace-mobile-apps-immediately/>

<https://www.youtube.com/watch?v=qEjIB002Tk>

<https://cloud.google.com/dialogflow/es/docs/>