

Birla Vishvakarma Mahavidyalaya

Engineering College

[An Autonomous Institution]

A
Project Report
On

BVM CHATBOT

Under the course of
DESIGN ENGINEERING -3CP08
B. E. Semester – VI
(Computer Engineering)

Submitted by:

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Academic year
(2021-2022)

CERTIFICATE

This is to certify that the students namely, **Mr. Nihal Galani (190070107011), Bhumit Bedse (190070107001), Aman Shaikh (190070107064)** of *B. E. (Computer Engineering) Semester VI* have successfully completed the course work and related tasks for the course of **Design Engineering 3CP08** during the academic term ending in the month of May 2022.

Date: _____

Place: _____

(Faculty Guide)

Head of the Department

Contents

1. Introduction
2. Literature Review
3. Design Considerations for detail design –DFD, ER and UML diagrams
4. Canvases
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CHAPTER 1-INTRODUCTION

Problem Statement

as we know that any newbies student or person came to college he/she doesn't know some information about our college and then they have some trouble to finding out such tiny information via our website or ask to others faculties and that's look weird.

User has some need like they want some tool from which they can get information about college, for this college build one website but for newbie it is little bit complex so that's why they want some easy interface

Description of our project:

Basically we decided to make a chatbot for our college as we know that any newbies student or person came to college he/she doesn't know the some information about our college and then they have some trouble to finding out such tiny information via our website or ask to others faculties and that's look weird so as technology grows we need to make our college chatbot so anyone is easily get any information via this chatbot from there mobiles without any troubles this is the basic problem statement why we are going to build this project.

Now come to the Module which is the part of the Project then we decided that we are going to add features which help the students most like faculty and Subject relationships, Time-tables, Last Year Exam Papers, Marksheet and other information too.

And as our Research to this Chatbot so there are two types of chatbots basically first one is AI Based chatbot which are build using Machine Learning , Deep Learning , Natural Language Processing and others tech also and till now we are not learn this types of technology at our college level or self so we don't make this one but there is other type of chatbot also which is called Rules based Chatbot which is directly interact with database which we are going to make and no need to learn that deep learning models and NLP and for this type of Chatbot we worked with the Python, Machine Learning , Relational Databases and other things also as we needs. So that's all for How we implement this project hope you loved it

Case study of existance solution

1:-Problem:-

Whenever any newbies student or person came to college he/she doesn't know some information about our college and then they have some trouble to finding out such tiny information via our website or ask to others faculties and that's look weird so this is the cause of problem.

2:-Existing Solution:-

There is one solution about this problem.Our college already have one website which have all the information about college and professors and course related details but for any newbie it is very difficult to find such tiny information from the website.

3:-Dataset:-

For storing information related our college our college website has one database which store all details related to college and professors and different type of course.

4:-Cost analysis:-

There are different type of cost involve in maintenance of the website like server cost and for maintaining the website college have to hire one engineer who can handle the website also there are some hardware cost which is there for website.

5:-Hardware and software details:-

There are some type of hardware cost for website like processor cost ,memory cost and also there are some software cost for server and database.

6:-Feature:-

College website has some features for easiness of students like it has one help section which has guidance for how to use the website it has one noticeboard section which will update whenever any new notice will come from university.

7:-Pros:-

There are some pros for using website like it is always available to student for 24/7.Information can be exchange from college to student so these are some pros for using website.

8:-cons:-

There are some cons for using website like it always need some maintenance so cost is high for maintaining the website. It need server so it also have some cost so overall website is costly to maintain.

9:-Future Work:-

College can make one virtual assistance for website so that student can easily access information relate to college and departments and also about professors.

Project Objectives

Designing a simple and intuitive user interface

In any system, users will need to perform several tasks to achieve a high-level goal. A user interface should guide user through the tasks and help them to attain final goal. Since operations in a restaurant involve numerous tasks, extensive analysis should be performed into designing a UI that is simple and intuitive and addresses the users' goals (functional requirements) effectively.

Developing an efficient user friendly user interface

The system should be easily accessed by different type of devices; so that it is portable and reusable. Considering that each mobile device may have a different screen resolution and size, the UI of the system should provide a responsive mechanism to offset these limitations with a dynamic UI layout and content resizing.

Ensuring quality of the system through adequate software testing

A significant amount of testing should be in-place to ensure that the prototype system is free from errors and bugs. In addition, the prototype's performance should be evaluated to analyse the effectiveness of the proposed methodology.

Target User

The groups of user that had been identified to use the system are Student and Parents and also administrator.

Students and Parents

This user will register as a member to use the chatbot. Once they register through the system they can access the system and ask queries related to college. we provides some number of questions to our users and from which user can select the question and they can get answer accordingly also from our chatbot they can get information related to our college and the history of our college.

Administrator :

Administrator is the person who will manage the entire system. This type of user will also do maintenance and control the application of this system. Administrator takes a responsibility to register new students, register new register new question related to college etc.

CHAPTER 2 LITERATURE REVIEW AND PROJECT METHODOLOGY

The second phase in delivering a system is Literature Review and Methodology. The purpose of Literature Review is to help in explaining how far the question needs to be investigated to maps out the requirement needed. A Literature Review is a summary of previous research on a topic. Literature Review can be either a part of a larger report of a research project. This chapter explains about facts or statement which known as Literature Review that will be used as guidance in developing the system. Other that, methodology will elaborate Prototyping model approach. To develop this system, methodology should be chosen for one important part of the Literature Review.

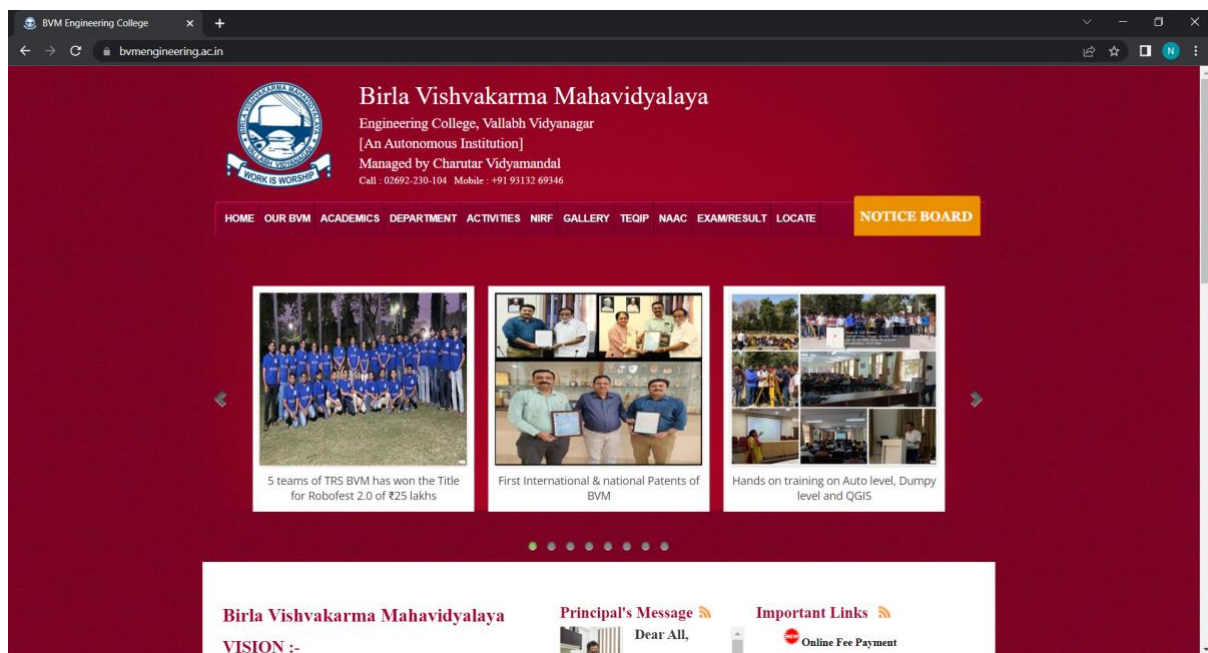
Domain:

This Chatbot is developed using machine Learning. Module that had been specified in this system is based on a research or application field. Chatbot is categorized as a student field because this system concern about queries abot college. Chatbot affecting most for Students and administrator management. The functionality of Chatbot concerns on how to develop a system so that students can easily get their answers.

Existing System

There is one solution about this problem. Our college already have one website which have all the information about college and professors and course related details but for any newbie it is very difficult to find such tiny information from the website.

College Website



1. Planning Phase :

The project planning starts in this phase. First, the information is gathered from the college website and the end users about the manual system. Before starting built the system, problem must be analyze in manual system then try to solve the problem. At the same time, element that is in the database should be known.

2. Analysis Phase :

During this phase, the manual system is investigated and improvement opportunities are identified based on the information gathered in the Planning phase. The user requirements are gathered, analyzed and reviewed. The final deliverables from this phase are Analysis Report. Output from this phase is Context Diagram, Data Flow Diagram (DFD) and Entity Relationship Diagram (ERD).

3. Design Phase :

The output produced in the Analysis phase is used to guide the design process of this system. During this phase, database will be designed. It is design based on requirement needed by this system. Besides that, an interface will also be designed. It is based on output of analysis phase which had been gathered from the organization.

4. Implementation Phase :

During this phase, the system actually built by using python programming language on the deliverable produced in design phase. Database and interface design from design phase will be developed. Then, process of written code will be done. In this system, programming had divided into two; python language and MySQL database.

5. Testing Phase :

After complete develop the system, testing phases will be done. This is important to test whether code which had been implemented is correct or not. If there is error occurred, a solution will be finding to overcome the problem. If there is an error, a modifying code will be done from the beginning phase of development.

CHAPTER 3

Design Considerations For Detail Design

Data Flow Diagram

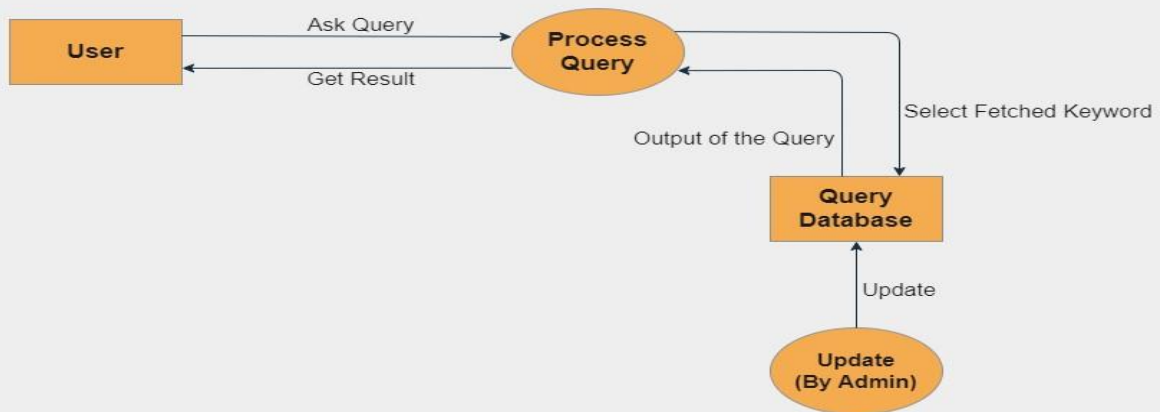
ID NOs

19CP016,19CP012,19CP006

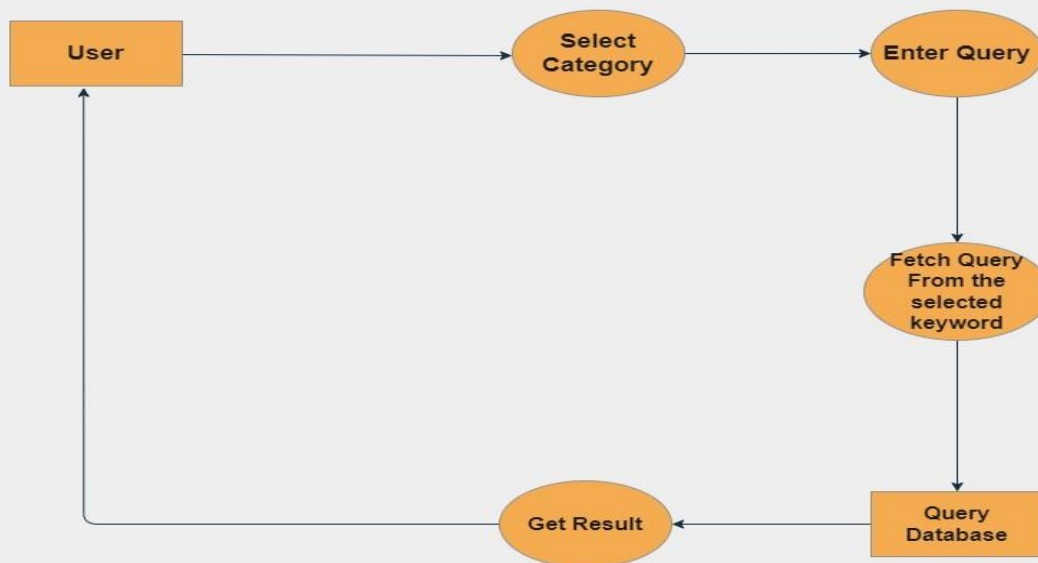
Level-0 DFD (Context Free Diagram)



• Level-1 DFD



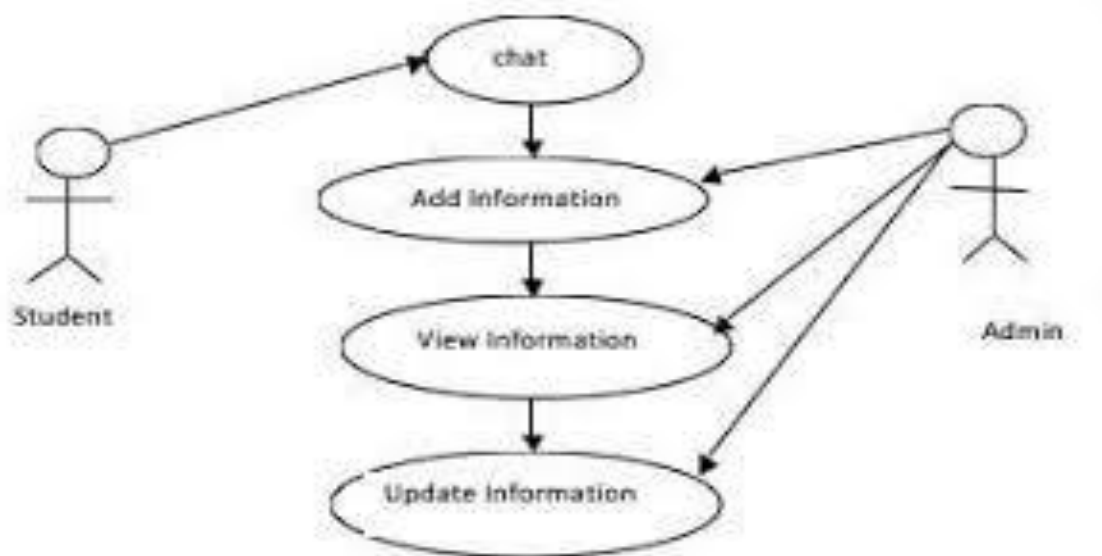
• Level-2 DFD



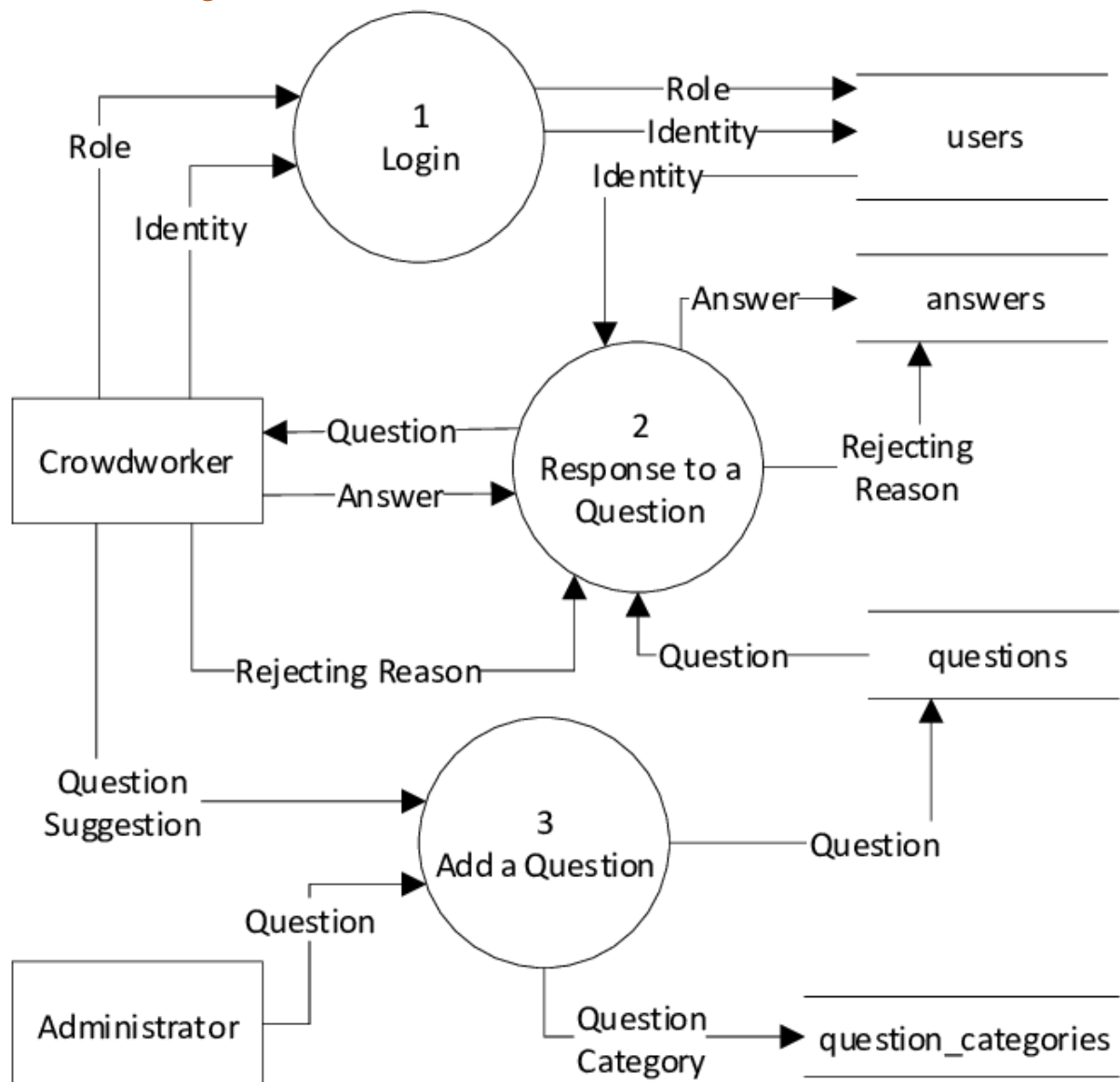
Er Diagram



Use-case



Context Diagram



CHAPTER 4 CANVASES

4.1 AEIOU CANVAS

AEIOU CANVAS (Chatbot For College Students)

AEIOU Summary		Group ID: 19CP016,06,012	Date:	Version:	
Domain Name:					
Environment :		Interaction :		Objects :	
Admission season	First month of start	Asking For PYQs	Between Classmates	Smart Board	
Summer vacation	Holidays	Asking Ques to prof.	Student&Clg Authority	Mobiles	
Winter vacation	Internet Connection	Asking Ques to Senior	Student&NoticeBoard	Books	
Exam Seasons	Server Breakdown			Question Papers	
				Notice Board	
				Laptops	
				Study Templets	
Activities :		Users :			
Taking Admission	Having Lunch	Attending Labs	College Students	Indirect Users	Food Stalls
Visiting Campus	Giving Exam	Asking Ques to Prof.	Parent of clg students	Shopkeepers	Vendors
Attending Lectures	Searching About Prof.	Finding PYQs	Professors	Book Stalls	
		Using College Wi-Fi			





4.2 EMPATHY CANVAS

EMPATHY CANVAS(Chatbot For College Students)

Design for : ChatBot		Design By : 19CP016,06,012	
Date: 11/02/2022		Version : 1.1	
USER <div>College Students</div> <div>Parents</div> <div>Professors</div>		STACKHOLDER <div>Vendors</div> <div>Shopkeepers</div> <div>Book Stalls</div> <div>Food Stalls</div>	
ACTIVITIES <div>Taking Admission</div> <div>Visiting Campus</div> <div>Attending Lectures</div> <div>Attending Labs</div> <div>Finding PYqs</div> <div>Having Lunch</div> <div>Giving Exams</div> <div>Searching For Prof.</div> <div>Asking Questions</div> <div>Using College Wi-Fi</div>			
STORY BOARDING HAPPY When I was in my 3rd semester of B.Tech During Exam Time I was eagerly searching for previous year question papers because they are not available online or offline but eventually I found Out one humble senior who gave me all his question papers and my exam went well after that.			
HAPPY When I was in my 1st semester of B.Tech I don't have any knowledge about college and professors because I don't know from where to see this all information but later I was suggested to refer website to gather all this information. I felt very happy at that time.			
SAD I missed my first two online lectures due to unawareness of time table that time table is out because at that time I was unaware about we have to download time table from our website. I felt very sad at that time.			
SAD when I got question in one subject and I want to meet professor of that subject, I started searching for the cabin but actually I don't have idea about her full name so after wondering college also I was enable to find out her cabin just because I don't know her full name. I felt very sad that time.			









4.3 IDEATION CANVAS

IDEATION CANVAS(Chatbot For College Students)

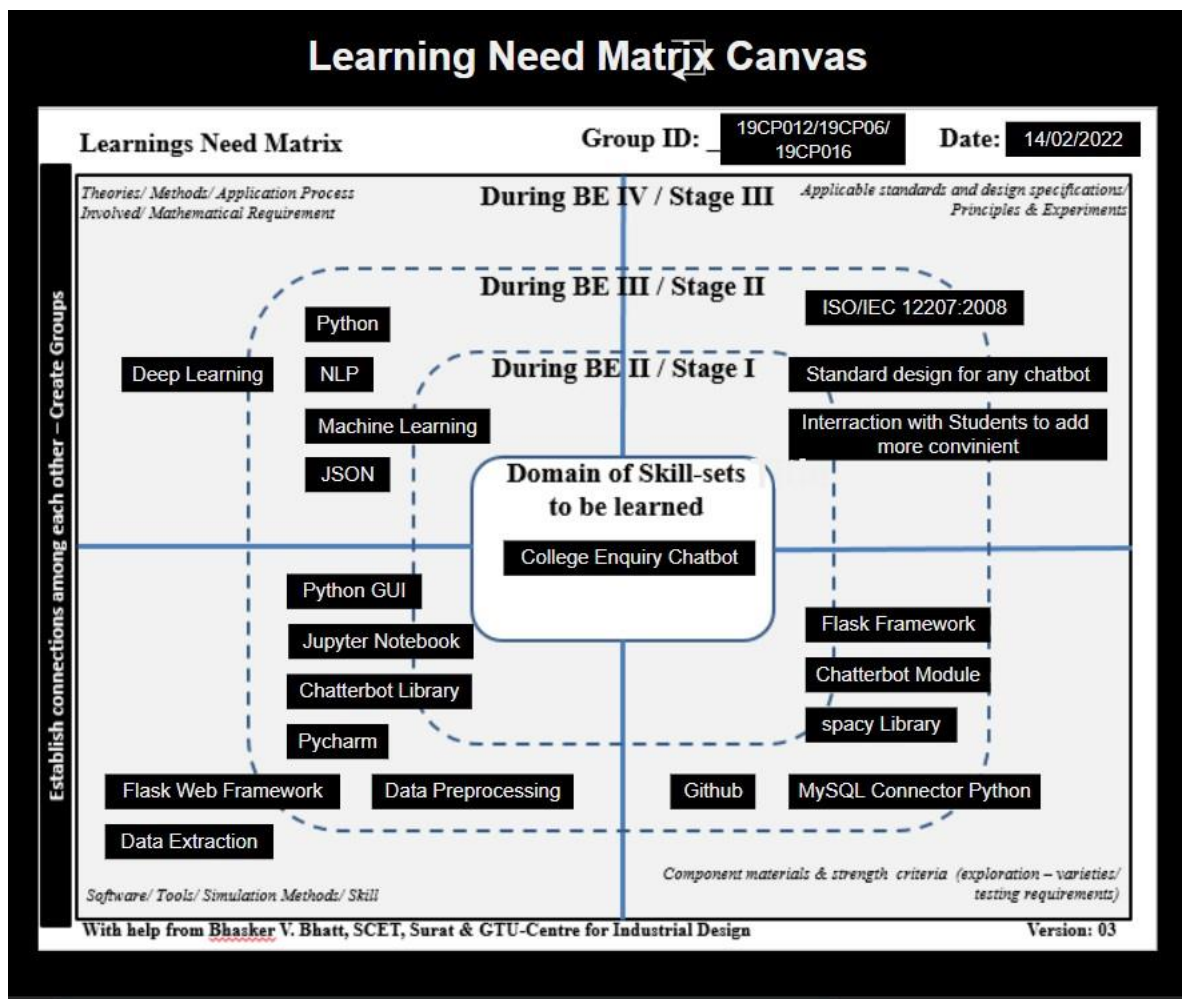
The ideanaut : <i>Ideation Canvas</i>		Project : Chat Bot	Team : 19CP016,06,012
<div> People</div> <div>College Students Professors Parent s Vendors Food Stalls Book Stalls</div>			
<div> Activities</div> <div>Taking Admission Visiting Campus Attending Labs Attending Lectures Having Lunch Giving Exam Seraching for Prof. Finding PYQs Using College Wi-Fi</div>		<div> Situation/Context/Location</div> <div>Searching PYQs / Preparation / Seniores Searching TimeTable / Attend Lectures,Labs / College Searching TimeTable / Prepare Stuff / Outside College Searching For Place / Relax or study / College</div>	
<div>Simplified Version Of Complex Website For</div> <div>New Students Outside Professors Parents Outside Students</div>		<div> Props/Possible Solution</div> <div>Easy GUI For Vendors To gather info About Recess Timing Holidays Working Days College Ending Time</div>	

4.4 product development CANVAS

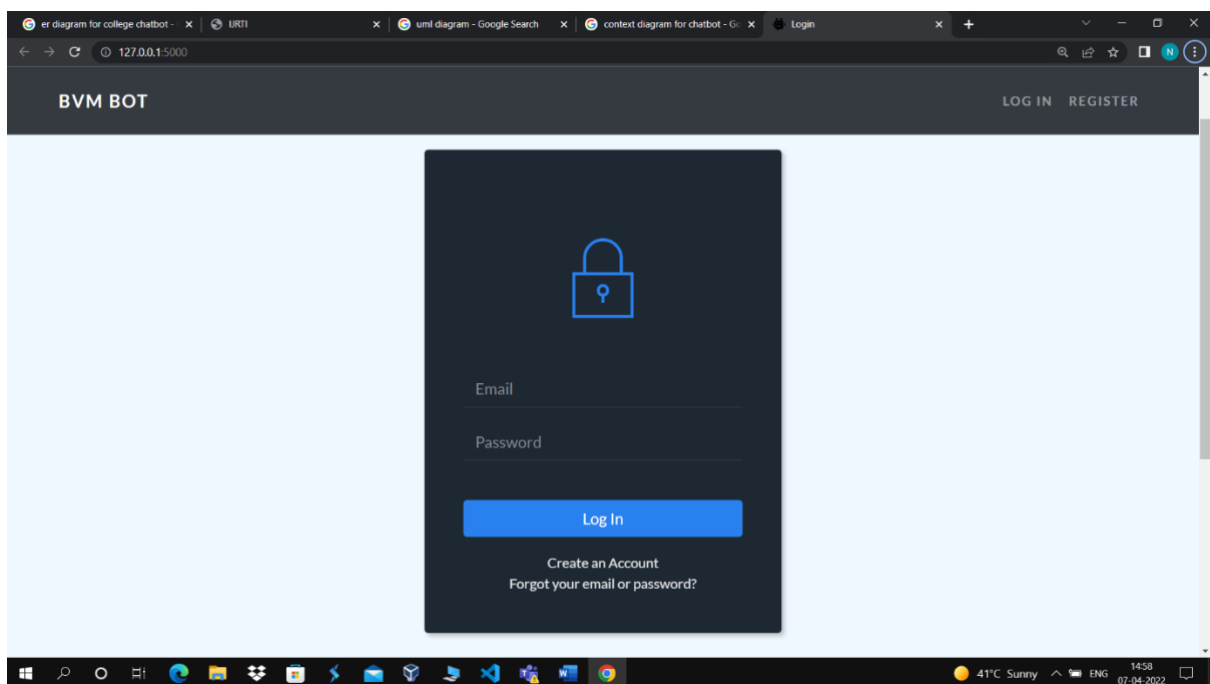
Product development CANVAS(Chatbot For College Students)

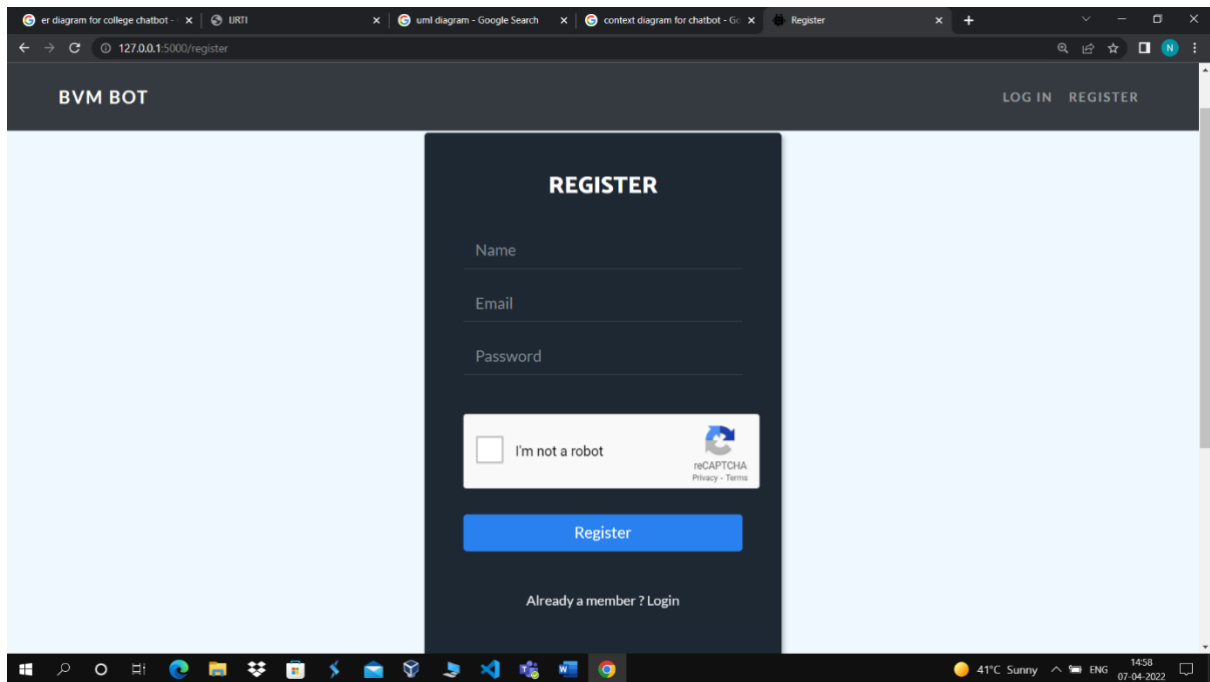
Product Development Canvas		Team/Date/Version:	/	/
 Purpose To Make Retrieval of Information and Finding Something Related to College Simpler	 Product Experience Secure Easy to Interact Minimal Design	 Customer Revalidation <small>Use features, functions are useful. Speak to the customer/user.</small> Satisfied		
	 Product Functions <small>Functions are a products answer to user problems/pain. They do something that user wants. They are often verbs in nature. Every function is powered by many features. Multitasking is a function. Browser tabs is a feature that powers the multitasking feature. A function can have one or more features powering it. Functions are very generic in nature, features are often more specific. Functions can be similar to product experience. Safety (product function) provides a feeling of safety (product experience).</small> Give All type of Information about College One to One Interaction with Client			
	 Product Features <small>Product features are specific. One or more features will power a function. Antilock Brakes, Airbags are features that power the safety function. Browser tabs, Apple's home button to multitask between apps are features powering the multitasking function. Each feature will have many components/sub components powering it. Sometimes a very smaller component becomes a feature itself. Like car alarm is a minor component and a feature at the same time powering the in-car entertainment function powering entertainment as a product experience.</small>			
 People <small>Who is the key customer segment who will use this product/service or the end-product of the concept you're pursuing? Write here about them, describe them a little.</small> Students Professors Newbie People Parents	Compact High Accuracy Instant Results	 Reject, Redesign, Retain <small>Post customer validation, reject, those functions or features that the customers don't find useful. Redesign those that were partially useful and retain those that the bar iterate with this unit all functions/features or accepted.</small> Retain		
	 Components <small>Components build up the features. For a setup it will comprise a lot of component like bags, triggers etc. that go into making it. For a tabbed browser it will comprise of various chunks of code that will make the tabs work. In cases where the feature is a major component, you could list here the auxiliary components that are required to make the major component work. You can also list new adjustments and innovations you're planning here at the component level.</small> Programming Language : Python Natural Language Processing Machine Learning			

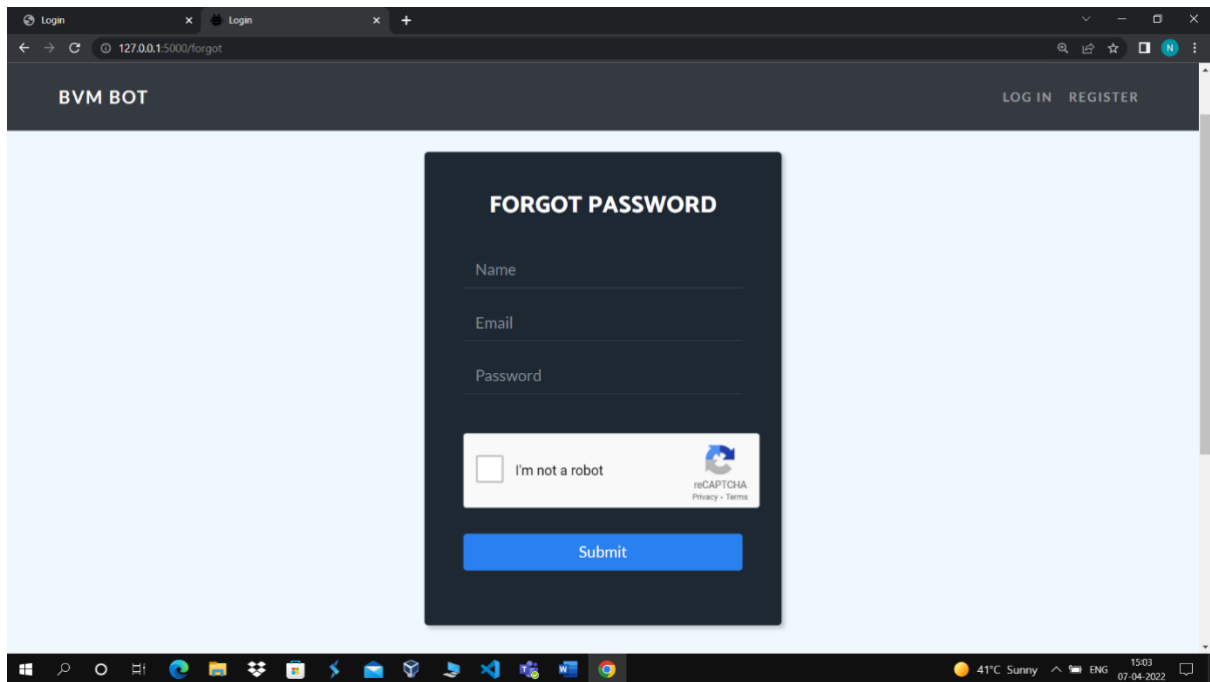
Learning need matrix

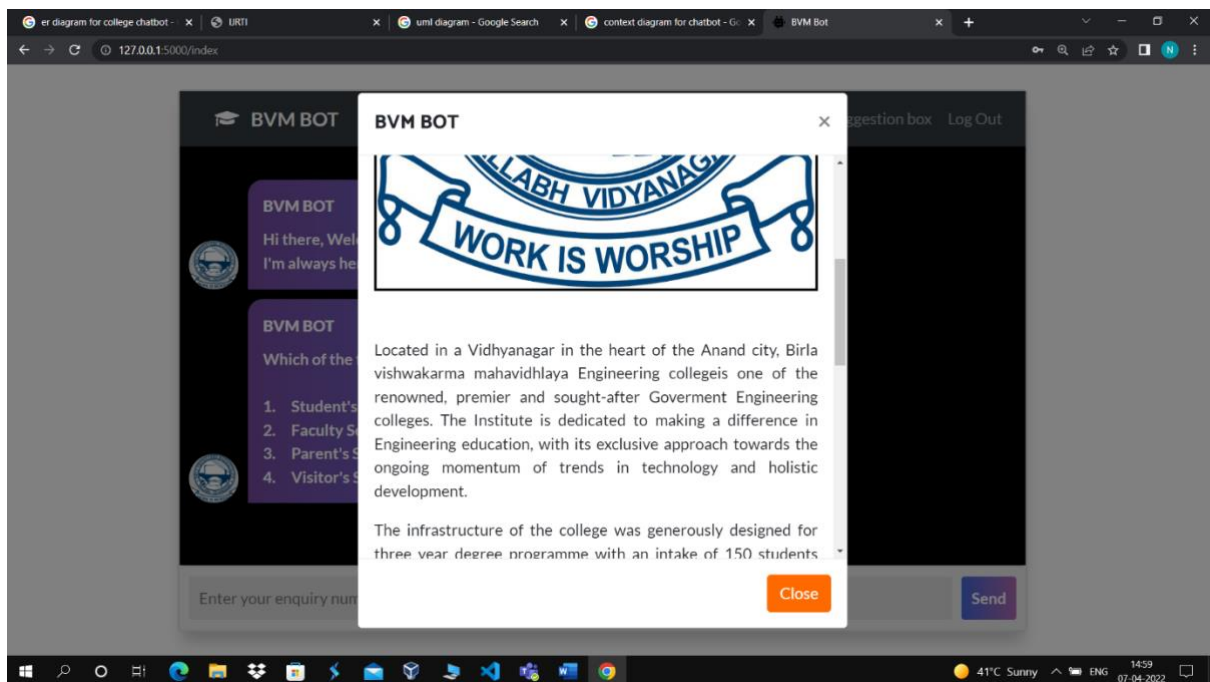
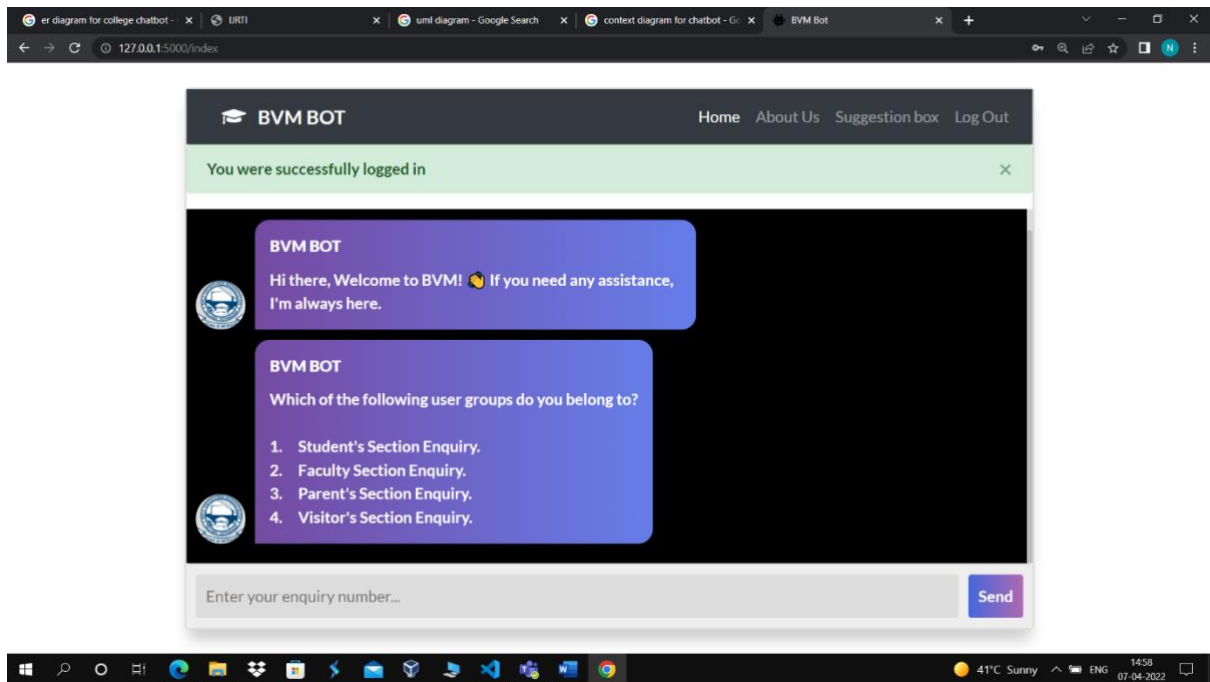


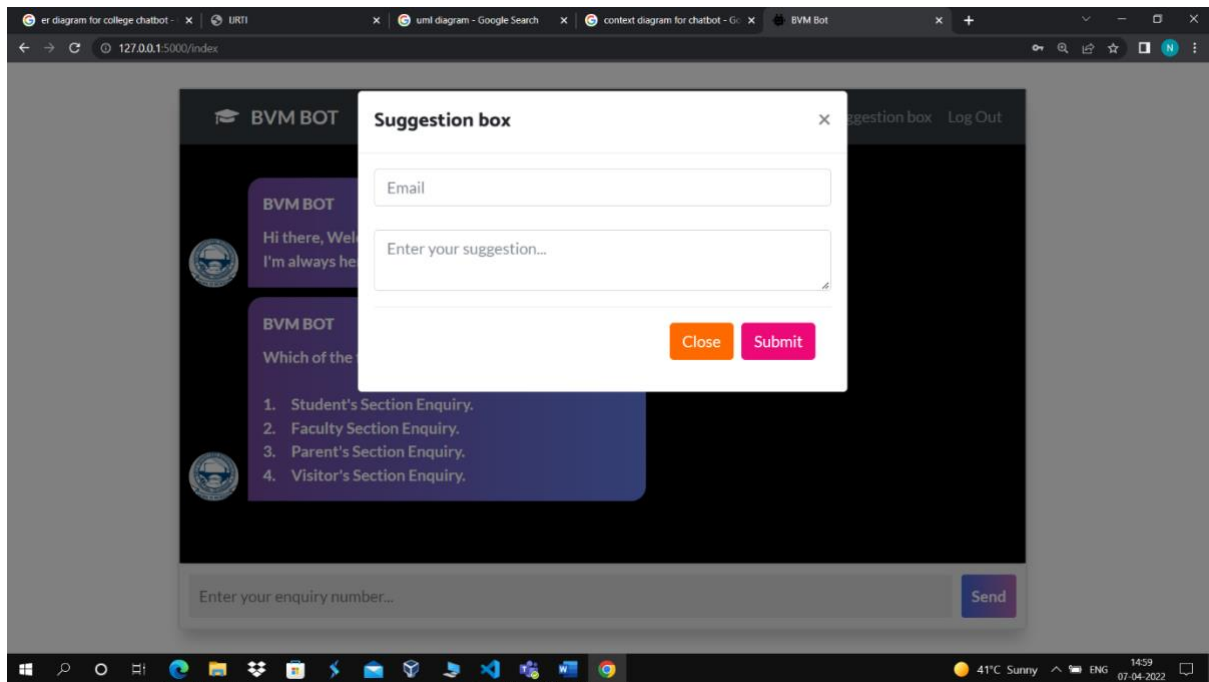
CHAPTER-5 Implementation











Entire implementation code for project is available in the following link :

https://drive.google.com/drive/u/0/folders/1J7NyhU-wmlM2XCz3U0rQQV12l4JUby_o

CHAPTER-6 Conclusion And Future Scope

Concluding Remarks :

This chapter has concluded the report of this project. The project successfully implemented a working complex prototype of a ML based Chatbot . The implemented prototype software has been fully tested throughout the project phases and it demonstrated acceptable performance. Overall, the project enabled the author to completed most of the high priority requirements. This report also documented all the relevant research details and decision-makings processes. If future extensions of the system are undertaken, the report will be helpful in assisting the completion of the remaining requirements and future improvements that might be involved. In summary, the project has satisfied its objectives and fulfilled its purpose.

Future Improvement

In addition to the unfinished requirements, there are other possibilities of further improving the project.

The improvements may include:

1. Develop AI based chatbot so that it will answer all the question which ask by student or parents

Another interesting possibility is to host the entire system on Cloud-based services so that everyone can access the chatbot.

CHAPTER-7 References

Websites :

<https://www.bvmengineering.ac.in/>