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Department of Information Technology

A Project Report  
On  
**WCE Academic Chatbot  
Web Interface for Chatbot**

Submitted in partial fulfillment for

**Mini-Project V**

**Submitted by**

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Under the guidance of

**Dr. S.P. Sonavane**  
Information Technology Dept.  
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Year 2022-23

## **CERTIFICATE**



This is to certify that the mini-project work entitled

### **WCE Academic Chatbot Web Interface for Chatbot**

submitted by

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Submitted in partial fulfillment for

#### **Mini-Project V**

**Walchand College of Engineering, Sangli**

*(An Autonomous Institute)*

**Affiliated to Shivaji University, Kolhapur**

is a record of student's own work carried out by them under my supervision and guidance during the session 2022-23.

**Dr. S.P. Sonavane**  
Guide

**Dr. R. R. Rathod**  
HOD

External Examiner

## Acknowledgement

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## Declaration

We at this moment declare that the work presented in this project report titled WCE Academic Chatbot-Web Interface for Chatbot submitted by us in the partial fulfillment of the requirement of the award of the degree of Bachelor of Technology (B.Tech) Submitted in the Department of Information Technology, Walchand College of Engineering, Sangli, is an authentic record of our project work carried out under the guidance of **Dr. S.P. Sonavane.**

### Team

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## **ABSTRACT**

This project focuses on the development of a web application for the WCE chatbot, an artificial intelligence-based assistant designed to provide support and information to students and staff in the field of academics. The increasing demand for online learning and digital resources has highlighted the need for efficient and responsive tools that can assist users in navigating through academic queries and frequently asked questions (FAQs).

Using natural language processing (NLP) techniques, the WCE chatbot is trained to understand and interpret natural language inputs, enabling it to provide accurate and timely responses.

The web application is designed with a user-friendly and visually appealing interface to ensure seamless interaction between users and the chatbot. The application allows users to ask questions and receive prompt responses, providing them with instant assistance in their academic inquiries.

The development of the WCE chatbot web application serves as a valuable tool in the education sector, addressing the growing demand for digital resources and personalized support. By leveraging NLP techniques and a comprehensive dataset, the chatbot aims to enhance the educational experience by providing accessible and efficient academic assistance to students and staff.

# Table of Contents

<b>1. Introduction</b>	<b>8</b>
<b>1.1 Overview and Problem Statement</b>	<b>8</b>
<b>1.2 Motivation</b>	<b>8</b>
<b>1.3 Contributions of this work</b>	<b>8</b>
<b>2. Project Objectives</b>	<b>8</b>
<b>3. Proposed Method</b>	<b>9</b>
<b>3.1 Problem Definition</b>	<b>9</b>
<b>3.2 Proposed Idea/System</b>	<b>9</b>
<b>3.3 System Analysis and Design</b>	<b>9</b>
<b>3.3.1 Requirement Specification</b>	<b>10</b>
<b>3.3.2 Flowcharts / DFDs / UML</b>	<b>10</b>
<b>3.3.3 Design and Test Steps</b>	<b>11</b>

<b>4. Performance Study</b>	<b>11</b>
<b>4.1 Implementation/Simulation Environment</b>	<b>11</b>
<b>4.2 Results</b>	<b>15</b>
<b>4.3 Summary of performance study</b>	<b>15</b>
<b>5. Conclusions</b>	<b>15</b>
<b>6. References</b>	<b>16</b>

# **1. Introduction**

The education sector has seen a significant shift towards online learning and digital resources in recent years. This has led to an increased demand for digital tools that can provide assistance and support to students and staff. Chatbots have emerged as a promising tool that can provide this assistance by enabling users to ask questions and receive quick and accurate responses.

This project aims to develop a chatbot that can understand natural language and respond to queries related to academics. The chatbot will be designed to provide assistance to students and staff at educational institutions by answering frequently asked questions (FAQs) related to academics.

The chatbot will be built using natural language processing (NLP) techniques, which will enable it to understand natural language and provide appropriate responses. The chatbot will be trained using a dataset of FAQs related to academics that will be prepared by collecting frequently asked questions from various sources such as college websites, forums, and social media platforms.

To enable users to interact with the chatbot seamlessly, a user-friendly and visually appealing user interface (UI) will be designed.

## **1.1 Overview and Problem Statement**

To develop web application for WCE chatbot.

The aim of this project is to develop a web application for the WCE chatbot, which will enable users to interact with the chatbot through a user-friendly interface.

## **1.2 Motivation**

This project is motivated by the need to provide an efficient and effective way for students and staff to access academic information and support. The chatbot will be designed to provide quick and accurate responses to frequently asked questions related to academics. This will enable students and staff to access information quickly and easily, saving time and effort.

## **1.3 Contributions of this work**

This project will help students and staff to access academic information.



## **2. Project Objectives**

- To develop a chatbot that understand natural language and respond to query.
- To create UI for chatbot.
- To prepare a dataset of FAQ related to academics.

## **3. Proposed Method**

### **3.1 Problem Definition**

The design and implement web application for a chatbot that understands natural language and can respond to queries related to academics.

### **3.2 Proposed Idea/System**

The idea is to develop a video and user details database management system. A web interface is provided using a website to store and fetch the video data and user details

### **3.3 System Analysis and Design**

#### **3.3.1 Requirement Specification**

The system is expected to be:

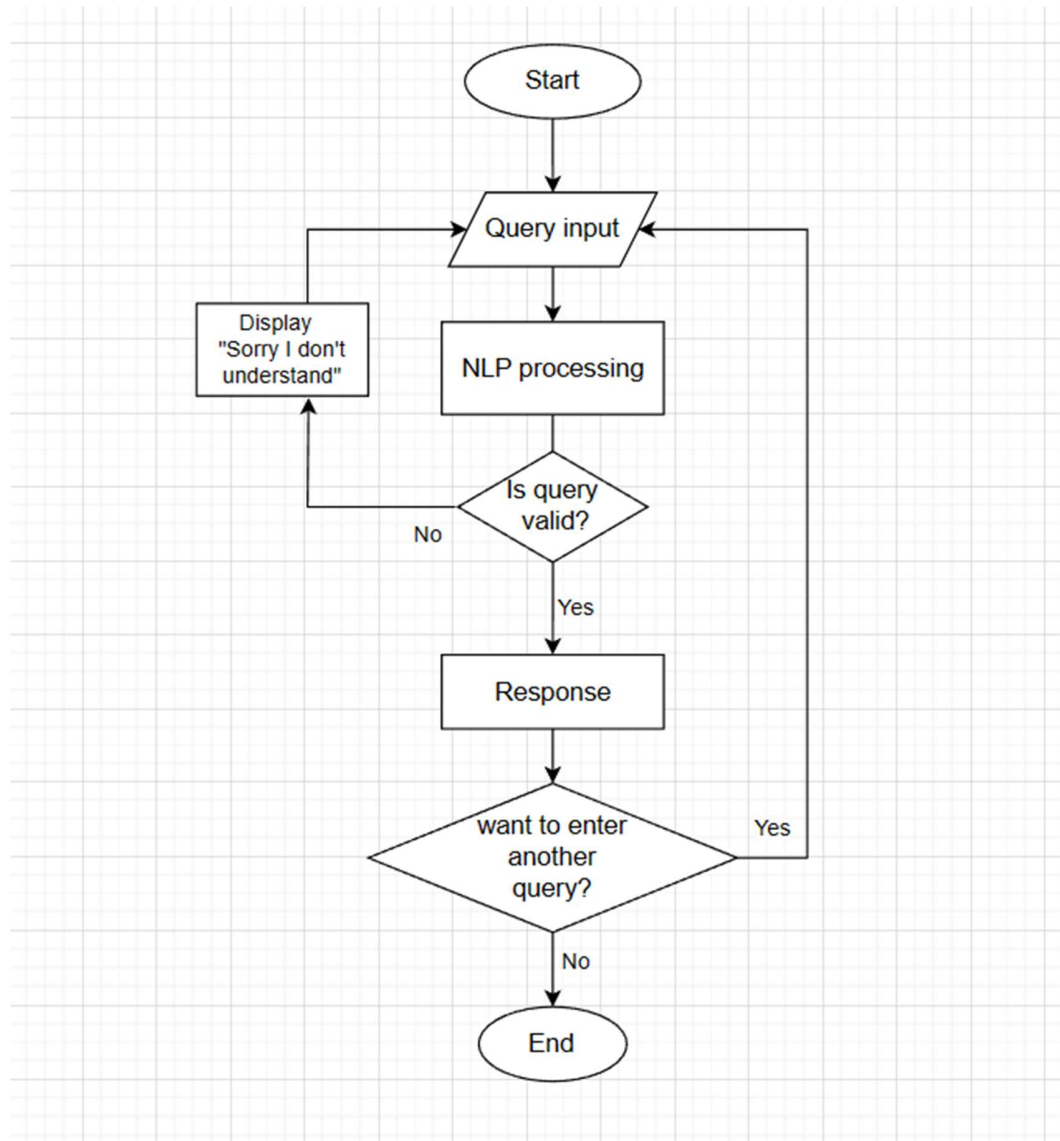
User Requirements:

1. Easy to use.
2. Easily and efficiently access academic information.
3. To get to work on an easy and user friendly interface.

Hardware Requirements:

- Operating System: Windows

### 3.3.2 Flowcharts / DFDs / UML



#### 3.1.1 Design and Test Steps

1. Identify the user requirements: The first step in the design process was to identify the user requirements. This involved understanding the needs of the target audience and the type of queries they are likely to have. This information was used to prepare a dataset of FAQs related to academics.
2. Design the chatbot architecture: Once the user requirements were

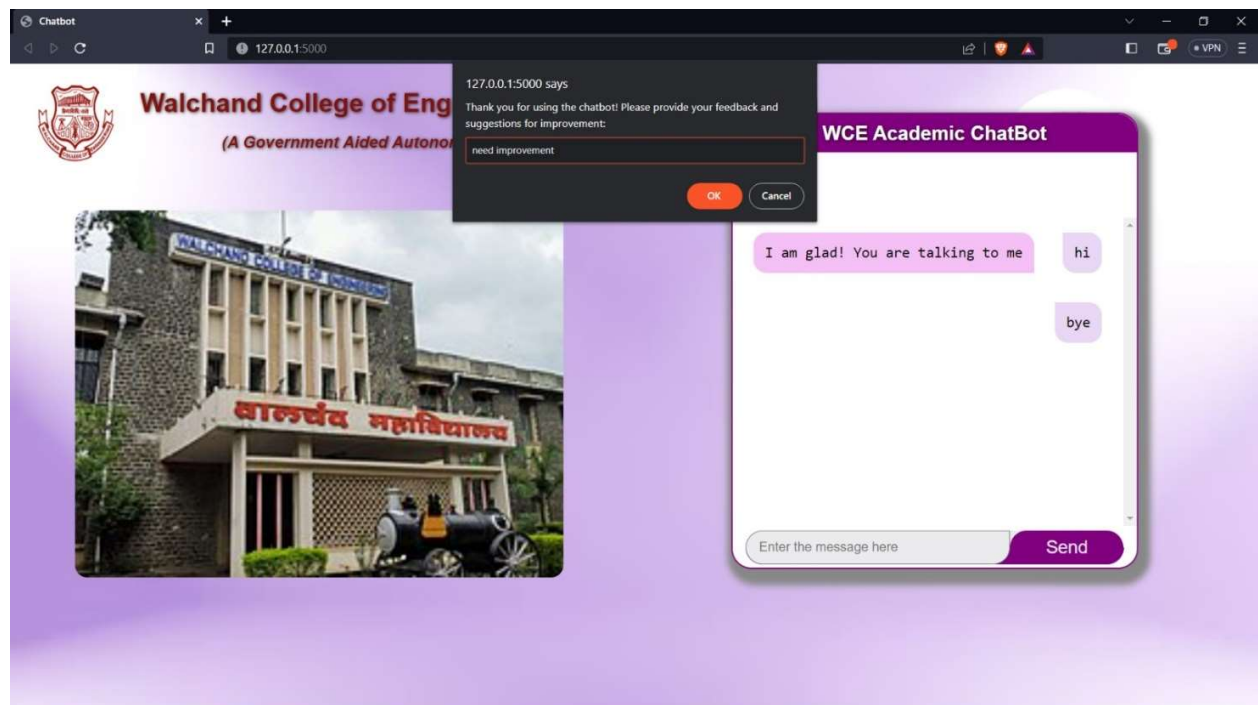
identified, the next step was to design the chatbot architecture. This involved selecting the appropriate natural language processing (NLP) techniques and algorithms that were used to train the chatbot. The chatbot was built using Flask, a Python-based web framework, for the backend.

3. Prepare the dataset: The next step was to prepare the dataset of FAQs related to academics. This involved collecting frequently asked questions from various sources such as college websites, forums, and social media platforms. The dataset was cleaned and preprocessed to ensure the accuracy and relevance of the questions.
4. Design the user interface: The next step was to design the user interface (UI) for the chatbot. The UI was designed using HTML, CSS, and JavaScript. It was designed to be user-friendly and visually appealing, with features such as quick links, search bars, and FAQs that enabled users to get assistance quickly and efficiently.
5. Integrate the chatbot and UI: Once the chatbot and UI were designed, they were integrated to ensure seamless interaction. The backend was developed using Flask, which allowed the chatbot to receive user queries and respond with appropriate answers. The frontend and backend were connected using AJAX, a technique that allowed the frontend to send queries to the backend without the need to reload the page.
6. Test the chatbot: The final step was to test the chatbot thoroughly to ensure it met the requirements and was free of errors. This involved testing the chatbot's accuracy, speed, and performance under different conditions.

## 4. Performance Study

### 4.1 Implementation/Simulation Environment

User UI =>



## **4.2 Results**

The chatbot UI was successfully developed using HTML, CSS, and JavaScript for the frontend, and Flask for the backend. The chatbot was trained using a dataset of FAQs related to academics, and the UI was designed to be user-friendly and visually appealing

## **4.3 Summary of performance study**

By following the design steps outlined in the report, the chatbot and UI were successfully developed and integrated, providing a seamless interaction between the frontend and backend. The project met the user requirements, and the chatbot and UI were designed to be user-friendly, visually appealing, and efficient. The project's success demonstrates the potential of chatbots and UIs to provide assistance and support to users in a variety of contexts.

## **5. Conclusion**

The chatbot and UI will be a valuable tool for students and staff at institute. It provides accurate and relevant responses to frequently asked questions related to academics, and it is user-friendly and easy to use. The chatbot and UI saved time and effort for users who needed assistance with academic-related queries, and they were a great addition to the educational institution's website.

## 6. References

- 1) Sproutsocial.com (2018). A complete Guide to Chatbots in 2018. Retrieved March 9, 2019 from: <https://sproutsocial.com/insights/topics/chatbots/>
- 2) "Using Chatbots to Improve Student Engagement in Higher Education" by IEEE Xplore - <https://ieeexplore.ieee.org/document/8683455>
- 3) Tamrakar, Rohit & Wani, Niraj. (2021). Design and Development of CHATBOT: A Review.  
[https://www.researchgate.net/publication/351228837\\_Design\\_and\\_Development\\_of\\_CHATBOT\\_A\\_Review](https://www.researchgate.net/publication/351228837_Design_and_Development_of_CHATBOT_A_Review)