Software Requirements Specification

for

Virtual Guide

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Table of Contents

Revision History

Name	Date	Reason For Changes	Version
Parvathy J	26.02.23	Initial draft prepared	1.0
Mikhel V kuttickal	26.03.23	Added system features	1.0
Meghna AG	01.03.23	Added non functional requirements	1.0
Dhrisya T R	01.03.23	Added external requirements	1.0

1.Introduction

1.1. Purpose

The purpose of this Software Requirements Specification (SRS) document is to provide a detailed description of the requirements for the development of a virtual guide platform for college students. The virtual guide will be accessed through a Whatsapp interface and will provide students with guidance and support in navigating their academic and social lives as well as to update the users with events happening in college. We aim to provide the students , the details of events and its associated benefits from those who have experience in the same.

1.2.Project Scope

The virtual guide will include the following features:

Ability to receive and respond to student inquiries and questions in a timely and accurate manner. Access to information on college events and activities. Guidance on academic and career planning, including advice on innovations and mentoring in all areas Connection to senior students and faculty members who can provide additional guidance and support.

1.3. Intended Audience and Reading Suggestions

Readers include the panel of professors and the team members consisting of developers and documentation writers.

The document consists of a detailed description of all the functional and non-functional requirements and various perspectives of the product. It has all the features that is to be implemented in the product.

1.4.References

- IEEE. (1998). IEEE Recommended Practice for Software Requirements Specifications (IEEE Std 830-1998). Retrieved from https://ieeexplore.ieee.org/document/720574
- https://flutter.dev/
- https://developers.facebook.com/docs/whatsapp/cloud-api/
- https://nodejs.org/en/download/
- https://webhook.site/#!/7d284e30-ec75-4cdc-baac-47aeb3fdbd72

2. Overall Description

2.1.Product perspective:

The virtual guiding system will be a WhatsApp chatbot that can be accessed by college students. The system will use conversational natural language processing (NLP) to provide guidance, information, and updates to users.

2.2.Product features:

The virtual guiding system will include the following features:
Provide updates on events
Campus maps and directions
Event schedules and reminders
Campus resource information (e.g., library hours, dining options, etc
User has the option to unsubscribe and re -subscribe to the whatsapp channel
Feedback and rating system can be collected
Option to collect student issues

2.3. User classes and characteristics:

The virtual guiding system will be designed for use by college students of all levels and disciplines. Users should be comfortable using WhatsApp and have basic knowledge of navigation and campus resources.

2.4.Operating environment:

The virtual guiding system will be designed to operate on any device with WhatsApp installed. The system will require an internet connection and access to location-based services.

2.5.Design and implementation constraints:

The virtual guiding system will be designed to meet the following constraints:
Conversational NLP design
Integration with existing campus systems and databases
Limitations in sending bulk whatsapp messages
Lack of proper free servers

2.6. Assumptions and dependencies:

The virtual guiding system is dependent on the following assumptions:
Users have access to WhatsApp and an internet connection
The campus database and systems are accessible and up-to-date
Users are comfortable using conversational interfaces and location-based services

3. System Features

3.1. User management:

Users have the option to unsubscribe the channel. Admin features allow the users to send bulk messages to a list of contacts.

3.2. Messaging and notifications:

The system should be able to send messages and notifications to users, either individually or as a group.

3.3. Search functionality:

The system allows the users to ask queries and get answers to the same. For this Recurrent Neural Network will be used. It will act like a chatbot trained using a Machine Learning algorithm.

3.4. Reporting and analytics:

There is an option to report issues and concerns from the students which will be collected and can be evaluated by the higher authorities.

3.5. Security and privacy:

The system should provide adequate security measures to protect user data and prevent unauthorized access. This could include features such as data encryption.

3.6. Data management:

The system should be able to manage large amounts of data, messages, notifications, and other relevant data. This could include features such as data backup and recovery, data migration, and data archiving.

3.7. Mobile compatibility:

The system should be compatible with mobile devices, such as smartphones and tablets. This could include extending this to telegram, instagram etc.

3.8.Support and maintenance:

The system should provide ongoing support and maintenance to ensure that it remains functional and up-to-date. This could include regular software updates, bug fixes, and technical support for users.

4. External Interface Requirements

- **User Interfaces:** The system will have a user interface in the form of a Whatsapp chatbot that will allow students to interact with the virtual guide.

- **Hardware Interfaces:** The system will require a device that supports Whatsapp, such as a smartphone, tablet, or computer, to access the virtual guide.

- **Software Interfaces:** The system will integrate with other software systems to provide accurate and timely responses to user queries. For example, the system may integrate with the college's academic database, career development database, or event management system.
  The system uses Whatsapp Cloud API for implementing whatsapp interface
  Webhooks will be used as temporary cloud server
  Heroke will be used as the server to act like a database
  Node js will be used in connection and backend
  Frontend uses flutter

- **Communications Interfaces:** The system will require an internet connection to communicate with the user via Whatsapp. The system may also need to provide notifications and updates to the user.

5.Other Nonfunctional Requirements

Performance: The system should be able to handle a large number of users simultaneously without any significant decrease in response time. The response time for user interactions should be kept to a minimum.

Security: All user data should be encrypted, and the system should have mechanisms to prevent hacking and data breaches.Messages should be proper and should be handled responsibly

Usability: The system should be user-friendly, with an intuitive and easy-to-use interface. Users should be able to easily navigate the system and access the features they need. Users should be familiar and comfortable with using whatsapp

Scalability: The system should be scalable to accommodate increasing user demand and data storage requirements.

Availability: The system should be highly available, with minimum downtime for maintenance and updates. The system should have mechanisms to ensure continuous operation in case of server failures or other technical issues.

Reliability: The system should be reliable, with minimum errors or system crashes. The system should have mechanisms to ensure data integrity and consistency.

Maintainability: The system should be easy to maintain, with minimal effort required for updates, bug fixes, and feature enhancements. The system should have a modular architecture that allows for easy modification and extension**.**