

Web Based Career Counselling with ChatBot (V-Counselling)

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Abstract - Career guidance has been always important but only lately, got the recognition that it deserves and nowadays it is important to have basic knowledge about various career fields that are high in demand and available in every part of the world. Many students make career decisions based on the most common profession among their peers, which is ineffective. Career counselors have been tasked with providing high school students with early and continuous exposure to interactions and knowledge required to make educated choices when choosing a career that connects to academic readiness and future goals. However, not all the schools are fortunate to have them, and for those who do, these career counselors also teach other subjects, leaving them with little time to listen to all students or organize events or have forums on career guidance. This has contradicted many students with sufficient career guidance that would help them relate their academics and other related activities to their career goals. So, our Web based career counseling application implemented using ASP.NET Framework will assist students in career preparation, growth, and real-time guidance from our Counseling chat-bot developed using Google's Dialogflow .

Key Words: Career Guidance, ASP.NET, ChatBot, Dialogflow, Counselling, Query Processing, NLP.

1. INTRODUCTION

Many people regret forcing their career choices in their early stages, with many forcing their choices with unreasonable courses. According to recent studies, many students said that their parents tried to sway their career choices. It is no surprise that the students currently enrolled in universities claimed that they would have chosen a different course if they were aware about it and it may also happen that student may possess good score in entrance examination; their parents may not have a complete knowledge of good colleges and courses in the field of their interest. Passing out of school is a big time for most students because for most it is the first time they will have to make a life-changing choice for their undergraduate degree.

Our career counselling web application aims to be helpful and useful in starting point for this confusing phase. There is a wealth of tools and data available for students who are interested in any field. For the time being most students do not have the time to research as required. We aim to guide students by allowing them access to various features such as complete details of colleges like Institute information, how to reach and courses provided by college, Quizzes to test their

knowledge and from this they will come to know their interest, Complete details about Competitive exams, Forum to discuss on technical topics/queries, College Prediction and Counselling ChatBot in order to give real time guidance and solving queries. So, Our Career Counselling web application will bring all these tools and data in one place for students to lead a path for their bright career.

2. LITERATURE REVIEW

According to a recent survey of group of students conducted recently, more than half of the students said that their parents influence their career choices. According to the survey, more than 20% of students enrolled in the university said that if given the chance, they would pursue a different career path, and 18% of students said that they regretted their degree choice. As a result of poor choices, India's unemployment rate in August 2019 was 7.34 percent, owing to the fact that job satisfaction was not achieved in them, and they did not choose happily for them. [1]

[2] The author has explored the problems encountered by peoples in rural areas and found out career guidance is one of the challenging issues faced by them and accordingly implemented a basic web application with a clear user interface to assist young people in gaining a better understanding of themselves and advising them on the best career direction for them that assisted us in designing simple and interactive web pages with a systematic design that would enrich the user experience at maximum level and would be accessible with ease.

[3] The author suggests that with so many opportunities available in today's competitive driven world, students are often perplexed about which career path is best for them. The world is heading towards "knowledge sources" these days. Rather than the user knowing about the information, the information is thrown at them. In view of all the above, it is believed that the proposed method should be able to engage with a variety of students and assist them in finding the best career for them. To simplify, the aim of creating a career guidance system is to assist students who are interested in seeking a career must be guided towards a career path and how to go about pursuing it.

[6] Dialogflow is an Google-powered NLP (Natural Language Processing) tool that is used to create a conversation and experience application for the company's users in a variety of languages and on across multiple platforms. By using

Google developed products developers can create text conversation and voice based interfaces to respond to users requests in a variety of languages, making it one of the best platforms. In dialogflow, the bot is programmed with a variety of intents and responses. This dialogflow model can be updated as and when needed. This bot is able to keep track of context and react appropriately.

3. OBJECTIVES

The key goal of our V-Counselling web application is to assist young people in making reasonable and practical choices regarding the educational and occupational options available to them in order to develop a successful career and guiding youth to harmonize educational and professional aspirations of the individual with our application features. The System would specifically seek to achieve the following goals:

- In the current pandemic situation, creating an online platform for youth to identify their own skills and professional preferences in order to select an appropriate career based on their psychological profile, aspirations, preferred studies and professional requirements.
- Our system is designed to provide students with career-related information, advice, and guidance that is related to their career needs.
- This system will completely encourage learners in their future career planning, empowering them to understand and develop new skills required to excel in their chosen field.
- Our robust ChatBot will be able to advise and serve thousands of students with questions and answers at the same time, which is ideal for combating teacher and lecturer scarcity in schools and universities around the world.

4. PROPOSED SYSTEM

4.1 BLOCK DIAGRAM:

The following system level block diagram represents V-Counselling system which would be accessed by both Student and Admin with an ease.

This system level block diagram is composed of numerous blocks that are as follows:

Users: The V-Counselling platform can be accessed by students and admin and both have different views and accessibility control.

GUI: It acts as an interface between users and the system. The system consist of Admin Module and Student Module

-Admin Module: It consists of rights to update or add Quiz questions and answers, Manage Colleges Information and Manage Exams Information.

-Student Module: It consist of rights to access College information, Competitive Exams Information, Take multiple Quizzes to know his interested field, College Prediction for predicting his college on the achieved marks, Councelling-Bot for real time guidance and Queries forum to discuss on a topic with other users.

Remote server: It consist of central server and Database where all the resources of the system are stored and retrieved as and when needed.

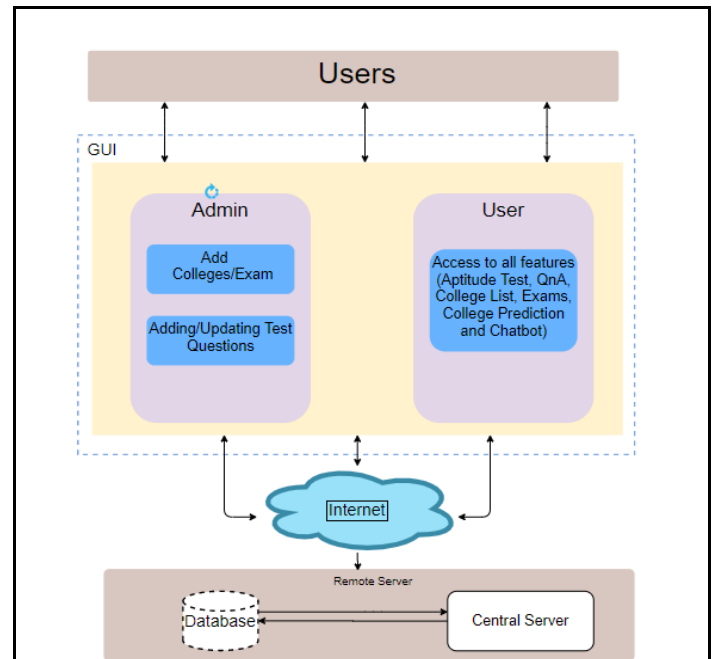


Fig-1: System Level Block Diagram

4.2 FLOWCHART:

- **Sign in Page:** If the user has an account, he can sign in to the system directly by entering his username and password.
- **Sign up Page:** If the user does not have an account, he must first click the register button on the Sign In page, enter his information, and then click the register button to have his account generated and his data saved in the database.
- **Users:**
 - College Information:** Users can access various complete details of any college according to different regions like Institute Information, How to reach and types of Courses available in that college.
 - Competitive Exams Information:** Complete Information about competitive exams can be viewed and their brochure or notification can also be downloaded by the users.
 - Quiz Section:** It includes multiple choice questions (MCQ) based quizzes user can take them to know his area of interest in a respective field.

Queries Section: Where a user is allowed to post his/her queries and is also able to answer other user's queries.

College Prediction and Compare: User can predict his college based on his marks and can also compare two colleges on various parameters.

Counsellor-Bot: It is the core part of V-Counselling system where users can communicate with the ChatBot as if talking to a real career counsellor.

- Admin:
 - Manage Quiz Questions: From here Admin can add a quiz or update the quiz questions.
 - Manage College Information: From here colleges can be added and also details of a particular college can be updated.
 - Manage Exams Information: Information of different competitive exams can be added or updated from this section.
 - Manage Course Information: Courses provided by a specific college can be added or updated from this section.

Student Module:

Any new user firstly has to register through the sign up page before logging in and after sign up his details will be stored in the database and then he needs to sign in to access the system. After successful login the user has open access to all the services provided by V-counselling System that is he can browse the list of colleges located in different regions with complete details and can also compare two colleges side by side with that it can also predict his college based on his entrance exam score and can also discuss on a topic with other users on Queries Section, also he can take quizzes to know his area of interest. Whenever user has any doubt regarding his career at any point of time he can interact with Counselling-Bot.

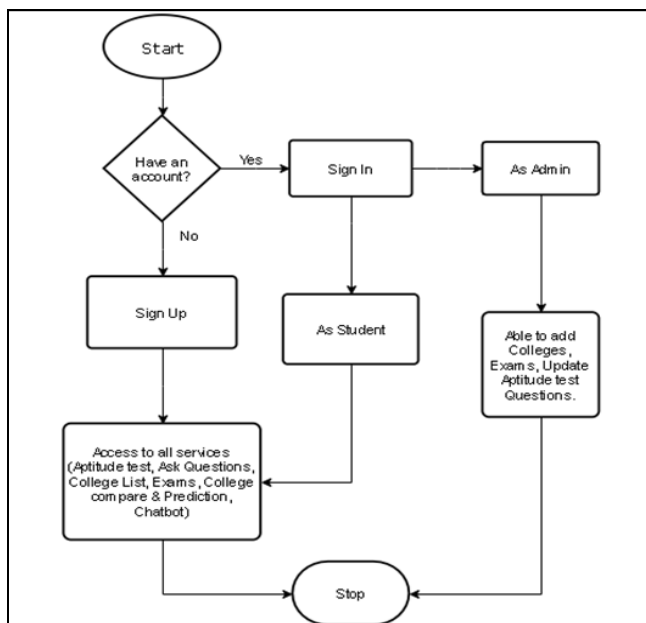


Fig-2: Flowchart

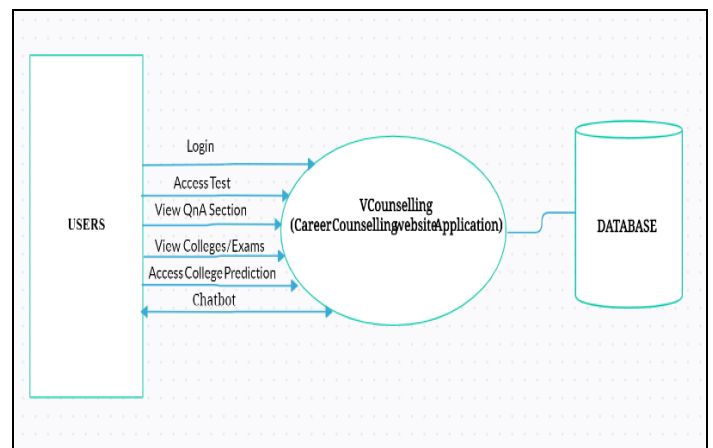


Fig-3: Data Flow Diagram of User Module

Admin Module:

It is the main module of the system from where the admin manages various services that are provided to the user for his career growth like he can add and update quiz questions, college information with courses provided by that college and also competitive exams information with notification or brochure of it which avoids him to access the database and do such things manually which would consume more time and eventually will bring down the efficiency of the system.

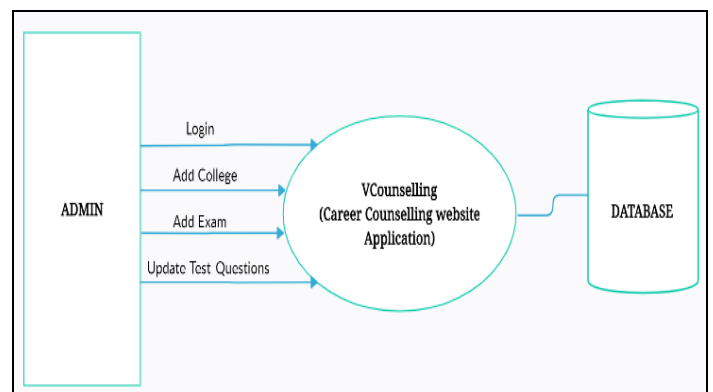


Fig-4: Data Flow Diagram of Admin Module

5. METHODOLOGY:

The proposed system includes the evaluation of student's abilities and personalities to help them develop realistic academic and career goals.

The system is divided into two modules that are Student Module and Admin Module. Both the modules are having the same login page to access the V-Counselling System.

6. IMPLEMENTATION DETAILS:

6.1 HARDWARE REQUIREMENTS:

- Processor: Intel i3
- Hard Disk: Minimum 400GB
- RAM: Minimum 4GB RAM

6.2 SOFTWARE REQUIREMENTS:

Database: Microsoft SQL Server 2014 using C#

Framework: ASP.Net

Design: HTML, CSS, JS

ChatBot: Dialogflow API

IDE: Visual Studio 2019

7. FUTURE SCOPE

Further, the application can be extended to include Online Courses Section which will be helpful for student to understand and develop the skills that are required to be successful in their future pathway or in the stream that they have chosen and also it can be extended further by including a news feed section where a student can discover new related to numerous streams. Also, further challenges include making the design more secure. The greater security can be provided to individuals accessing the application using cryptographic functions. Hence, future scope of V-Counselling web Application is unpredictable as it can be further extended with many tools as technology grows.

8. CONCLUSION

This paper introduces efficient way to create an advanced web application that will assist young people in making rational and practical decisions about their educational and vocational options in order to construct a successful career using the web technology. This application provides an interface where the students can interact with chatbot for guidance on their career path. The requirements of this project will be improved during each stage of development. Designing such an application to meet the aspirations of many users seems complex at the beginning, but working as a team and under guidance of the teachers we are confident of meeting all the objectives.

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