VCounselling
(Career Counselling Website Application)

Submitted in partial fulfillment of the requirements

of the degree of

Bachelor of Engineering in Information Technology

By

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2020-21

CERTIFICATE OF APPROVAL

This is to certify that the project entitled

"VCounselling (Career Counselling Website Application)"

is a bonafide work of

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submitted to the University of Mumbai in partial fulfillment of the requirement for the award of the

degree of

Undergraduate in **"Information Technology Engineering"**.

Guide   Head of Department   Principal
(Prof. Debarati Ghosal)   (Prof. Deepali Vora)   (DR. S. A. Patekar)

Project Report Approval for B. E.

This project report entitled (***VCounselling (Career Counselling Website Application)***)) by

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2. ***Ganesh Dongre (Roll No. 18101C2004)***

is approved for the degree of ***Bachelor of Engineering in Information Technology***

Examiners

1.---

2.---

Date:

Place:

Declaration

I declare that this written submission represents my ideas in my own words and where others' ideas or words have been included, I have adequately cited and referenced the original sources. I also declare that I have adhered to all principles of academic honesty and integrity and have not misrepresented or fabricated or falsified any idea/data/fact/source in my submission. I understand that any violation of the above will be cause for disciplinary action by the Institute and can also evoke penal action from the sources which have thus not been properly cited or from whom proper permission has not been taken when needed.

Name of student	Roll No.	Signature
1. Farooque Vadraiwala	18101C2060	Farooque
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Date:

Acknowledgment

We are pleased to present "VCounselling (Career Counselling Website Application)" as our project and take this opportunity to express our profound gratitude to all those people who are guiding us in completion of this project.

We thank our college for providing us with excellent facilities in order to complete and present this project. We would also like to thank the staff members and lab assistants for permitting us to use computers in the lab as and when required.

We express our deepest gratitude towards our project guide Prof. Debarati Ghosal for her valuable and timely advice during the various phases in our project. We would also like to thank her for providing us with all proper facilities and support as the project co-coordinator. We would like to thank her for support, patience and faith in our capabilities and for giving us flexibility in terms of working and reporting schedules.

Finally, we would like to thank each and every one who is guiding us directly or indirectly in our project.

<div align="right">

Farooque Vadraiwala
Ganesh Dongre

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ABSTRACT

Career Counselling has ever been important but only newly, got the recognition it deserves. First, people tried out career counsellors, for a switch in careers, only after they got a job and were unhappy with it. The jobs available vary by region, state, and country. Some can be perceived as social workers, life coaches, therapists, corporate recruitment staff, teachers, and various other positions where a firm understanding of psychology is helpful or required. As humans improve in various fields, we are also developing a lot of new job industries and job roles that didn't even exist before. Now, people understand that this isn't fitting. What is noteworthy, is to examine why people change careers. It doesn't need much time to think to understand that someone who does that was never satisfied with the career that they should know. Such a decision normally begins from school. Countless students make career choices based on the most chosen career among their peers which is inappropriate. Providing secondary school students with early and ongoing exposure to experiences, information necessary to make informed decisions when selecting a career that connects to academic preparation and future aspirations has been left to career counsellors. However, not all schools are privileged to have them and even those who have them, these career counsellors also have other subjects to teach and this leaves them with limited time to attend to all the

students or even plan for activities or forums on career guidance. This has denied secondary school students adequate career guidance that ought to help them relate their academics and extra curriculum activities to their career goals.

The solution is career counselling website application which can be used by students and parents to enhance their understanding of personality types and what different careers involve to help in career planning, development and guidance which will be appropriate, through this application We aim to guide students by allowing them to access various features such as complete details of colleges like tuition and accommodation fees, eligibility criteria, campus placement opportunities, accommodation facilities, scholarship schemes, campus support services, rules and regulations etc. It helps students to select colleges in engineering and management field in India and abroad based on the factors like qualifying exam details, technical expertise and other details. The application prepares the college list as per the entrance examination marks and the eligibility criteria of colleges and the courses chosen. The college list is filtered based on parameters like institution ranking, fee limits and location chosen, and also a Chabot so that user does not have to personally go to career counsellor for the same which will give them an idea how to start and what to do further.

Chapter 1: Introduction

The career guidance in terms of discipline, college and course after higher secondary education has always been an important area of concern to students, parents and college authorities. Nowadays it is important to have basic knowledge about various career fields that are high in demand and available across the world. A large amount of people regrets pushing their career at their initial stages, with many forcing their choices with irrespective courses.

Many students have responded to a survey saying that their parents tried to influence over their career choice. 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. An average scorer usually finds difficult to search an appropriate college and to get the admission in it. An ambitious student with excellent academic record may look to pursue his graduation in a prestigious institution inside India or abroad and interested to know about factors like institute ranking, scholarship facilities, facility for research, campus placement, industry collaborations, etc. In general, every student and parent is concerned about fee structure, location of the institute, institute affiliation, campus placement, hostel facilities, rules and regulations etc.

Also 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 VCounselling website application aims to be a 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 but most students do not have the time to research as well as required. This Career Counselling website application will bring all these tools and data in one place for students to lead a path for their bright career.

Chapter 2: Aim and Objectives

Aim:

The main aim of the VCounselling website Application is to provide counselling and career guidance so that students and youths know their own skills and professional interests, in order to choose an appropriate career in accordance with their psychological profile, aspirations, studies chosen, professional requirements and existent jobs, in the current conditions for the students to evaluate their own strengths and to build on their own areas for development and also fully engage in career planning which will lead students to understand and develop the skills that are required to be successful in their future pathway and Ultimately provide students with the relevant careers information, advice and guidance that are suitable for their personal needs.

Objective:

Objective of our VCounselling website Application is to Guide young people to adopt fair and realistic decisions about the opportunities they have in terms of educational and vocational route on which to build a successful career and will also counsel youth to harmonize educational and professional aspirations of the individual with our application features and with personal aptitudes and skills test if they don't know which stream they should opt which would ultimately develop leadership qualities and personality development of youth and to channelize their energy towards socio-economic development and growth of the community and nation.

Chapter 3: Literature Surveyed

Web Based Career Guidance is very important to our Educational System. Web Based Career Guidance is very important to our Educational System. the methodology and design challenges are addressed in [1] Abisoye Opeyemi, Alabi I., Ganiyu Shefiu, Abisoye Blessing, Omokore Josiah "A Web Based Career Guidance Information System for PreTertiary" Proceedings of the 2015 IJSRSET | Volume 1 | Issue 3 | Print ISSN : 2395-1990 Online ISSN : 2394-4099 Themed Section: Engineering and Technology. [2] Amit M. Farkade, Sneha.
R. Kaware, "The Android - A Widely Growing Mobile Operating System With its Mobile based Applications," International Journal of Computer Science and Mobile Applications, vol. 3, no. 1, pp. 39-45, Jan. 2015.

Recently there is growing interest in development of Android based mobile applications for Course Guidance and College Finder addressed in [3] Ajit Thorat, Tanvi Pugaonkar, Viraj Kamble, Jyoti Mobarkar, Prof. Sachin Barahate, "An Android Application for Course Guidance and College Finder," International Journal of Scientific Research in Computer Science, Engineering and Information Technology, vol. 2, no. 2, pp. 1029-1037, 2017.

[4] Methodology for the Implementation of Virtual Assistants for Education Using Google Dialogflow   Roberto Reyes1, David Garza1, Leonardo Garrido1, V´ıctor De la Cueva1, and Jorge Ramirez1 Tecnol´ogico de Monterrey, Wrinting Lab, TecLabs, Vicerrector´ıa de Investigaci´on   y TransferenciadeTecnolog´ıa,Monterrey64849,NL,M´exico{a00344331,a00820764}@ites m.mx,leonardo.garrido,vcueva,juresti}@tec.mxConversational.   Bots   have   many applications throughout the industry and in recent years they have been developed for educational purposes. The ability to serve with questions and answers to thousands of students at the same time is perfect to counter the scarcity of teachers and lecturers in schools and universities around the globe. It also creates a better tool for online courses to improve their students performance. The content of each course is unique and varies

depending on the subject and the lecturers approach. One of our main objective is to adapt any educational content into a well structured chatbot using Dialogflow. Dialogflow is a Google service that runs on Google Cloud Platform which basically allows any user to build engaging voice and text-based conversational interfaces. Dialogflow presented a big constraint for our development, which is the difficulty to work in this platform, as it sometimes froze or even closed while using it. It is essential that the lecturer, without having prior knowledge to chatbots or AI, can be capable of creating, modifying and implementing changes to this educational tool in a simple and efficient manner. We took advantage of the API provided by Dialogflow to implement a Google sheets capable of modifying and creating a chatbot with Dialogflow, without working directly on that platform. As it is still robust, is more stable and friendly.

Chapter 4: Problem Statement

4.1 Problem Definition:

It is often seen that the students have to face difficulties in choosing their appropriate career while selecting courses, colleges and universities. This is where Career Counselling website Application plays a crucial role and also boost student's morale and Guide young people to adopt fair and realistic decisions about the opportunities they have in terms of educational and vocational route on which to build a successful career.

Career counselling has come as a true gift of modern technology to the new generation via an application.

4.2 Proposed Solution:

The task of Proposed System includes the evaluation of students' abilities and personalities to help them develop realistic academic and career goals they will be facilitated with many features such as:

Questions & Answers: Where a user is allowed to post queries and is also able to answer other users' queries.

Aptitude test: If the user is confused to choose a stream then he can attempt this test which will provide students with the relevant careers information, advice and guidance that are suitable for their personal needs and ultimately lead user to understand and develop the skills that are required to be successful in their future pathway.

College Compare and Prediction: Where user can compare two colleges and can also predict college according to his/her marks.

Exams: In this section user can traverse through various kind of exams if he/she wishes to give one according to their interest.

Chatbot: Users can chat with the bot as if talking to a real career counsellor. This part is the core part of our chat bot system. The artificial intelligence technology is new as well as it will help us to create various interactive system. The same program can be used to build similar concept bots in future. It is very difficult to make decision on user's query but it is become easier because of the intelligent system. This part of the bot processing accepts the input in text form and process the result and then it will reply back to the user.

Chapter 5: 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 an news feed section where a student can discover new related to numerous streams.

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 VCounselling Application is unpredictable as it can be further extended with many tools as technology grows.

Chapter 6: Proposed System

The task of Proposed System includes the evaluation of students' abilities and personalities to help them develop realistic academic and career goals they will be facilitated with many features such as: Questions & Answers, Aptitude tests, College compare and prediction, Exams, Chatbot.
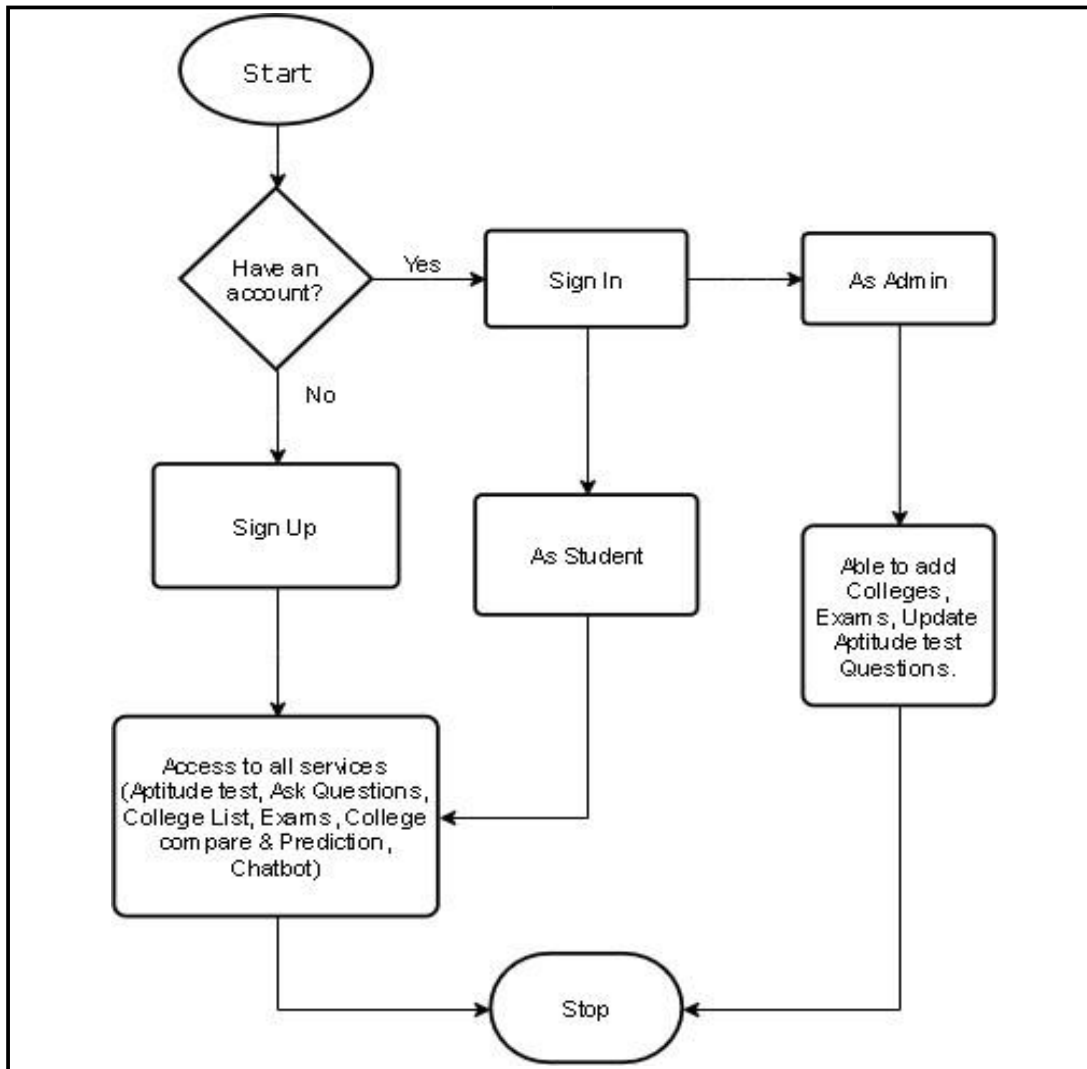
6.1 Flowchart

Fig. 6: Flowchart

Chapter 7: Methodology

The objective is to develop a static/dynamic version of Website based application which would be accessed by both User and Admin with an ease.
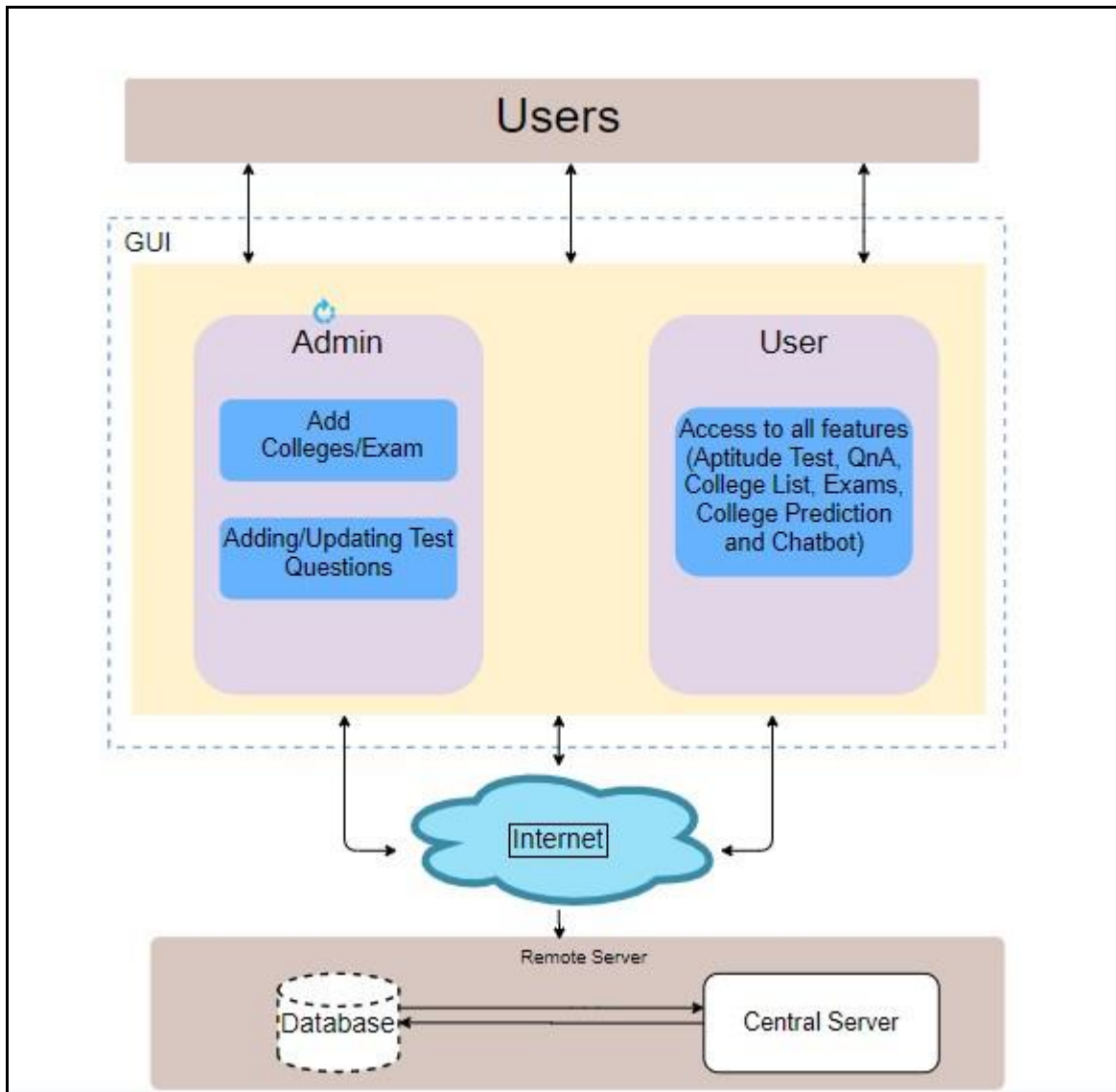
Fig. 7: System level Block Diagram

Following modules will be developed in our System Application as follows:

Admin login: The website App will be under sole control of an admin who provides inputs to the Application. Admin will update colleges, Exams, Aptitude test questions.

Student login: Any student can login into the system application by creating an account. The user has to enter the required information that is needed.

College list Section: After creating a login into the system, each student can see a list of colleges along with their detail in this section. Student can select different colleges as per their preference.

General Test Section: It includes a multiple choice question (MCQ) based test to check proficiency in the areas like verbal, quantitative and general career path knowledge which will lead user to understand and develop the skills that are required to be successful in their future pathway.

College compare and Prediction: Where user can compare two colleges on many parameters such as college ranking, college details, college facilities, courses provided by colleges, etc. and can also predict college accordingly meeting of the eligibility based on his/her CGPA and other academic records as per standard operating procedures (SOPs).

Question And Answer section: Where a user is allowed to post his/her queries and is also able to answer other users' queries.

Exams Section: In this section user can traverse through various kind of exams if he/she wishes to give one according to their interest.

Chatbot module: Users can chat with the bot as if talking to a real career counsellor. This part is the core part of our system. The artificial intelligence technology is new as well as it will help us to create various interactive system. The same program can be used to build similar concept bots in future. It is very difficult to make decision on user's query but it is become easier because of the intelligent system. This part of the bot processing accepts the input in text form and process the result and then it will reply back to the user.

Chapter 8: Analysis

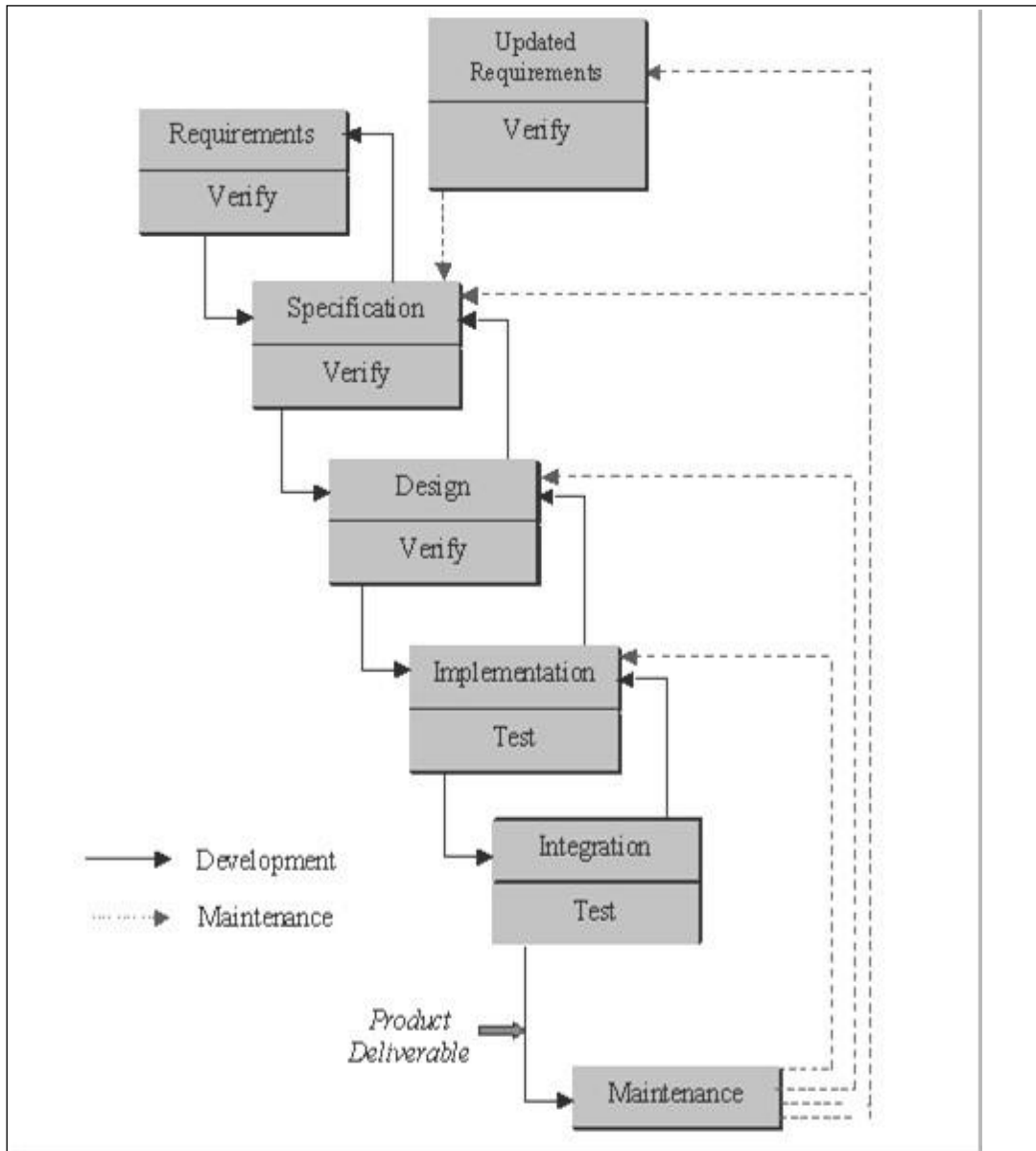## 8.1 Process Model used for the project

Fig. 8.1.1: Process Model

We will be using Iterative model in order to develop our project. The reasons for using Iterative model are as follows:

- Results are obtained early and periodically.
- Parallel development can be planned.
- Progress can be measured.
- Less costly to change the scope/requirements.
- Testing and debugging during smaller iteration is easy.

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- Risks are identified and resolved during iteration; and each iteration is an easily managed milestone.
- Easier to manage risk - High risk part is done first.
- With every increment, operational product is delivered.
- Issues, challenges and risks identified from each increment can be utilized/applied to the next increment.
- Risk analysis is better.
- It supports changing requirements.
- Initial Operating time is less.
- Better suited for large and mission-critical projects.
- During the life cycle, software is produced early which facilitates customer evaluation and feedback.

8.2 Feasibility Study

Feasible analysis of a mobile application includes a clear understanding of the application. This research is related to the design and development of a mobile application. The Five major area of feasibility analysis are as follows:

1. **Technical feasibility:** Technical feasibility focuses on the technical resources (software and hardware) available to the organization and also helps to determine whether the technical team is capable of converting the ideas into working systems. The hardware and software required for our project, Visual Studio, Microsoft SQL Server, etc. will be used. The project involves solvable technical issues.

2. **Economic feasibility:** This assessment typically involves a cost/ benefits analysis of the project. This project developed in minimal amount will emerge as a huge market valued project- solving the issue faced by students while choosing their career with less than an estimated amount of Rs. 4,000.

3. **Legal feasibility:** This assessment investigates whether any aspect of the proposed project conflicts with legal requirements like zoning laws, data protection acts, or social media laws. The project does not involve any legal

concerns since all the decisions will be taken which will not create any legal conflicts.

4. **Operational feasibility:** This assessment involves undertaking a study to analyze and determine whether—and how well—the organization's needs can be met by completing the project. The main objective of the project is is to Guide young people to adopt fair and realistic decisions about the opportunities they have in terms of educational and vocational route on which to build a successful career.

5. **Scheduling Feasibility:** This is the important one for the project success because a project will fail if not completed on time. Under scheduling feasibility, the team decides the time duration that how much time the project will take to complete as we have mentioned in Timeline Chart below.

8.3 Timeline Chart

	Task Name	Start Date	Finish Date	Status	Duration	Predecessors
1	Domain Finalization	11/07/19	12/02/19	Complete	26d	
2	Reviewing our Domain	12/10/19	01/07/20	Complete	29d	
3	Topic Selection	01/08/20	02/02/20	Complete	25d	
4	VCounselling(Career Counselling Application)	02/02/20	03/31/21	In Progress	423d	
5	Information Gathering	02/02/20	02/04/20	Complete	2d	
6	Literature survey	02/05/20	03/03/20	Complete	27d	5
7	Requirement Gathering	03/04/20	03/10/20	Complete	6d	6
8	Design	03/11/20	04/02/20	In Progress	22d	7
9	Implementation	04/04/20	09/29/20	Not Started	178d	
10	Submission of Project Synopsis	04/04/20	04/06/20	Not Started	2d	
11	Front-end	04/15/20	05/26/20	Not Started	11d	
12	Back-end	05/27/20	08/04/20	Not Started	99d	
13	Project Compilation	08/05/20	09/29/20	Not Started	55d	11,12
14	Testing	04/15/20	11/18/20	Not Started	217d	
15	Final Product	11/19/20	11/19/20	Not Started	1d	
16	Paper Publication	12/01/20	02/02/21	Not Started	63d	
17	Report	03/02/21	03/30/21	Not Started	28d	
18	Submission of Project II - Blackbook	03/31/21	03/31/21	Not Started	1d	

Fig. 8.3.1: Timeline chart

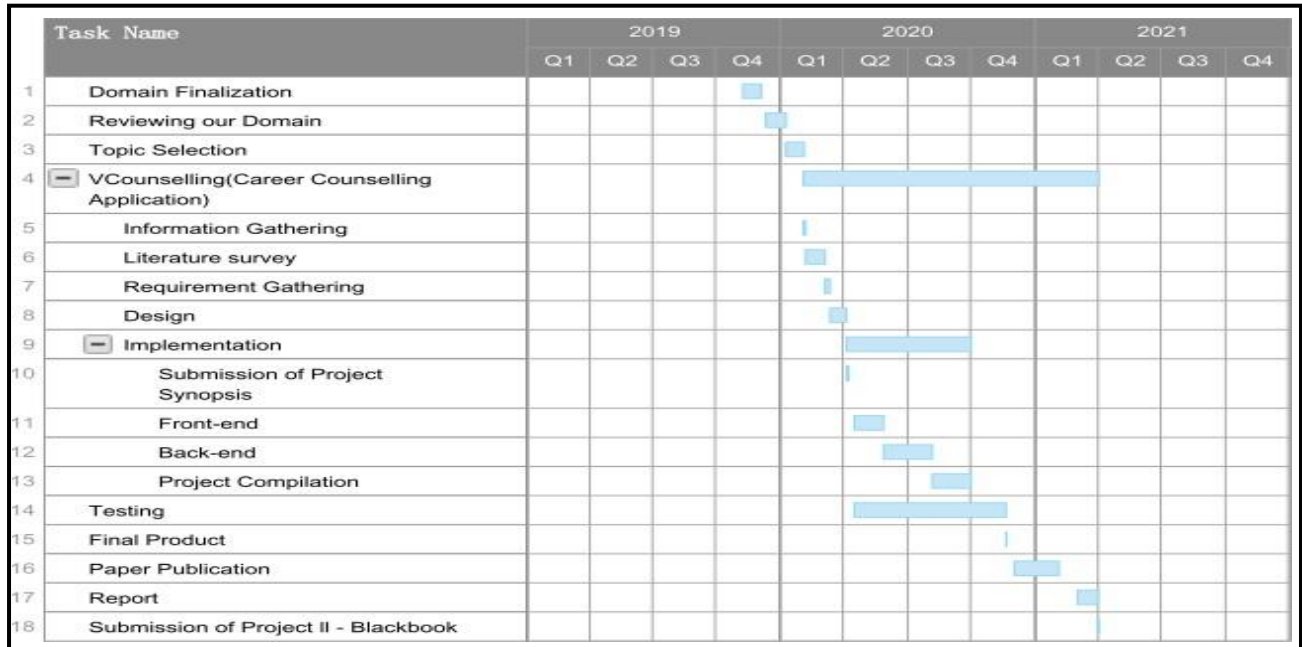| Task Name		2019				2020				2021			
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
1	Domain Finalization				▪								
2	Reviewing our Domain					▪							
3	Topic Selection					▪							
4	VCounselling(Career Counselling Application)												
5	Information Gathering					▪							
6	Literature survey					▪							
7	Requirement Gathering					▪							
8	Design					▪							
9	Implementation												
10	Submission of Project Synopsis					▪							
11	Front-end						▪						
12	Back-end						▪						
13	Project Compilation							▪					
14	Testing												
15	Final Product								▪				
16	Paper Publication								▪				
17	Report									▪			
18	Submission of Project II - Blackbook									▪			

Fig. 8.3.2: Gantt chart

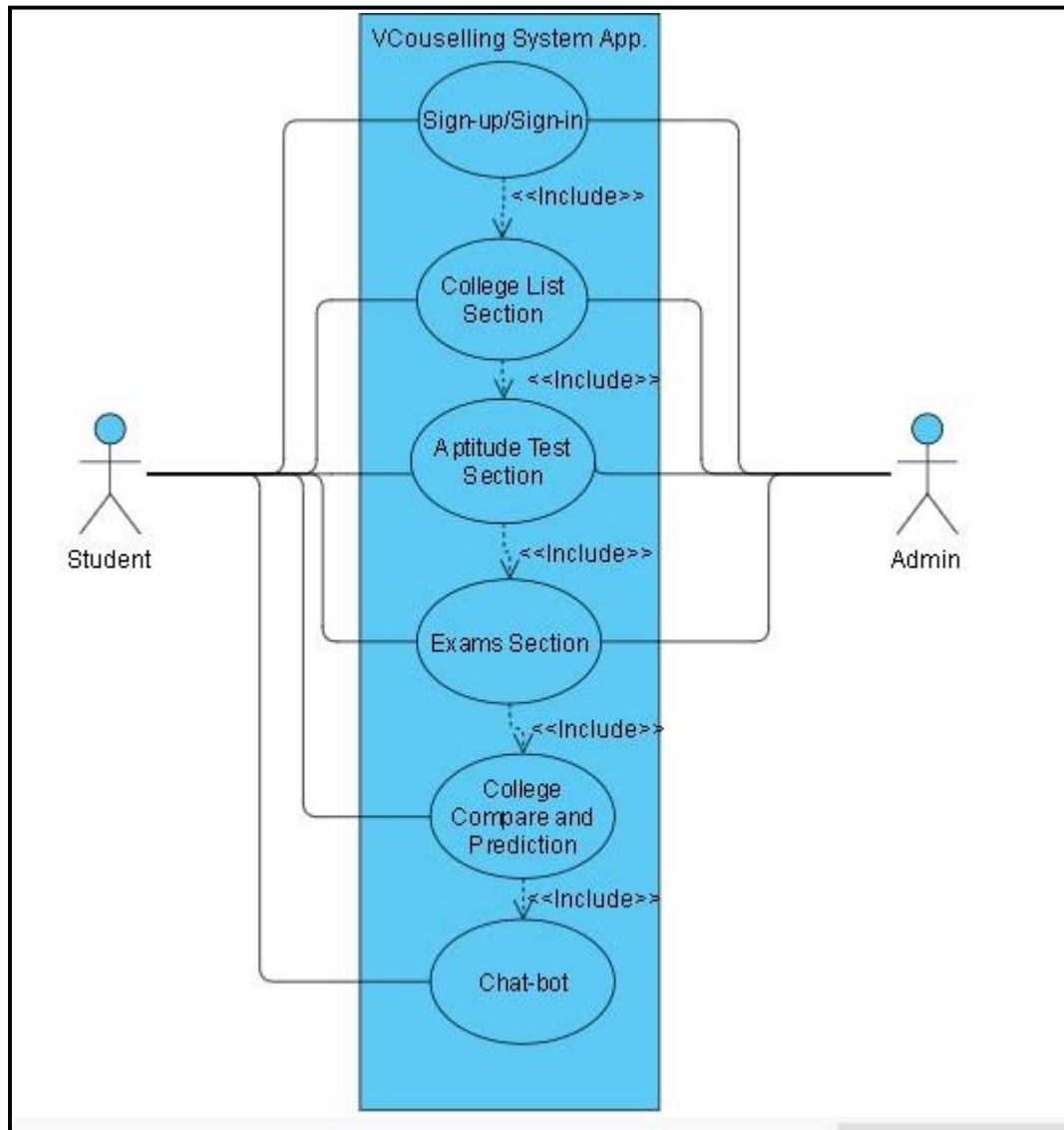# Chapter 9: Design

9.1 UML Diagram
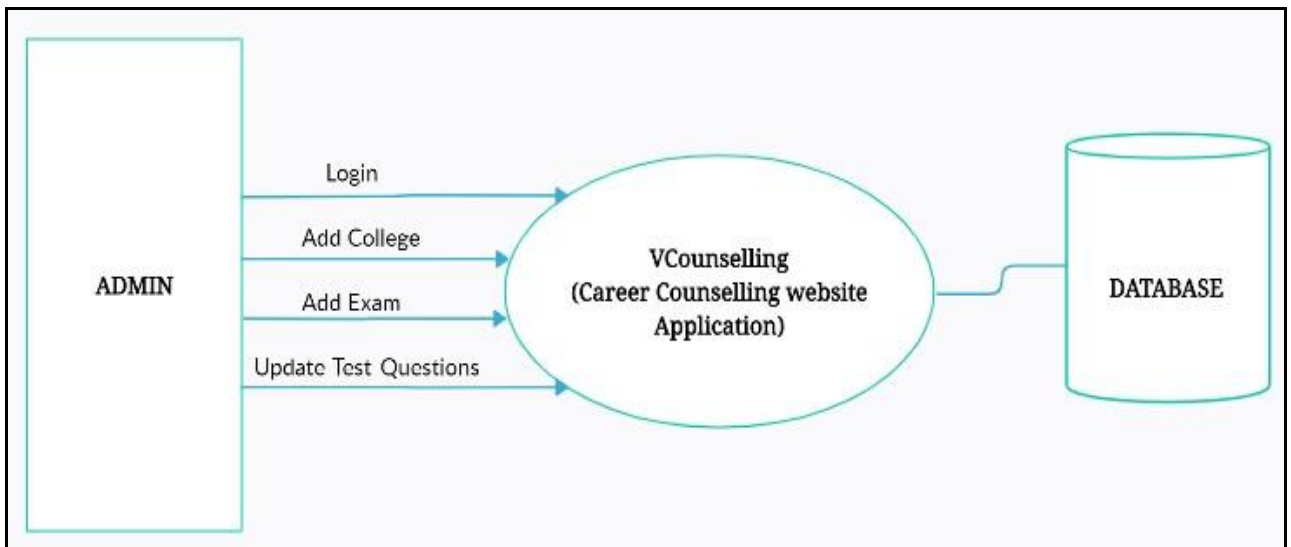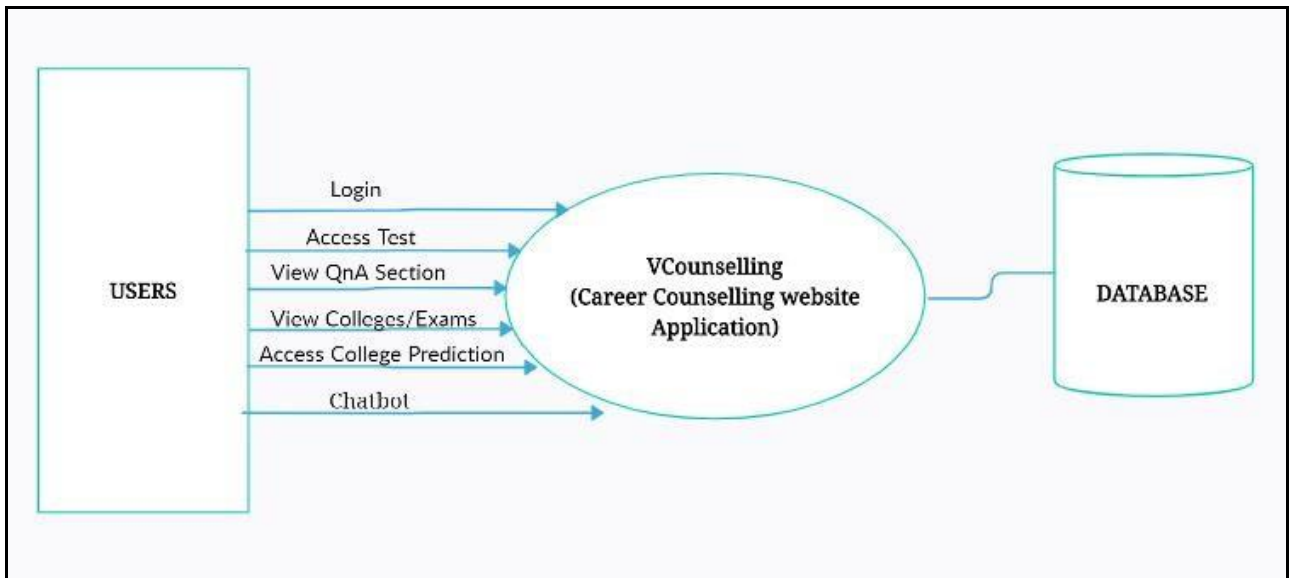

Fig. 9.1.1: Use Case Diagram

Fig. 9.1.2: Data Flow Diagram

Chapter 10: Hardware and Software requirements

Hardware Requirements:

-Minimum 4 GB Ram

-Minimum 15GB of Hard Disk space

-Minimum Intel i3 Processor

Software Requirements:

-Operating System: Linux or Windows 10

-Visual Studio

Chapter 11: References

[1]Abisoye Opeyemi, Alabi I., Ganiyu Shefiu, Abisoye Blessing, Omokore Josiah "A Web Based Career Guidance Information System for Pre-Tertiary" Proceedings of the 2015 IJSRSET | Volume 1 | Issue 3 | Print ISSN : 2395-1990 Online ISSN : 2394-4099

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[3]K. Sumathi, M. Umarani, P.Abinaya, "Mobile Application for Student Information System," vol. 6, special issue 1, Jan. 2017.

[4]An Android based Mobile Application for Career Guidance Vishal. D. Kamath1, B.Tech student E-mail: vishalkamath96@gmail.com Akanshya Meher2, B.Tech student E-mail: akanshya.meher@gmail.com Vidhya V3, Assistant Professor - Senior Scale E-mail: vidya.prakash@manipal.edu Deepthi S4‡, Assistant Professor - Senior Scale E-mail: deepthi.s@manipal.edu; ‡ Corresponding Author 1,2,3,4 Dept. of Computer Science and Engg., Manipal Institute of Technology, Manipal Academy of Higher Education, Manipal, India

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[7]R. Moore, G. Gibbs, "Emile:Using a Chatbot Conversation to enhance the learning of Social Theory" Univ. of Huddersfield, Huddersfield, England,(2002)Ausburg, Germany, University of Ausburg.

[8]Methodology for the Implementation of Virtual Assistants for Education Using Google Dialogflow Roberto Reyes1, David Garza1, Leonardo Garrido1, V´ıctor De la Cueva1, and Jorge Ramirez1 Tecnol´ogico de Monterrey, Wrinting Lab, TecLabs, Vicerrector´ıa de Investigaci´on y Transferencia de Tecnolog´ıa, Monterrey 64849, NL, M´exico {a00344331,a00820764}@itesm.mx, leonardo.garrido,vcueva,juresti}@tec.mx