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Mentor System

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Abstract: The student mentoring system is introduced in the College. All the Teachers are involved in the process of mentoring. Every mentor is allotted with about 10 students to take care of them depending upon the department and semester. Every mentor has a list of all the students allotted to him / her with details of Name, register number, roll number, semester. The mentor has a chalked-out responsibilities to take care of all the mentees such as to provide them career counselling, to provide them personal counselling to support them for any kind of difficulty in their curriculum and in their personal life, to make provision of remedial coaching for them and to always support them as and when required. Mentor system also provide a listener for mentee to speak up their problems. The mentor also works for finding out hidden talent of the students in various aspects of academic, co – curricular, extra – curricular and extra mural activities so that they can be promoted to do various activities in the concerned area for their holistic development. The mentor also contacts and meets the parents of his / her mentees to discuss their progress and / or any other matter, as and when required.

Keywords: React.js, Firebase,Html,Css.

I. INTRODUCTION

A. *Project Overview*

Mentor system is a web application that can be simplify the management of college mentoring system. The main objective of this application is to make mentee allocation for a mentor is easy a fast. You can allocate mentee randomly or allocate one by one. It provides a variety of services that include mentee allocation, search a mentee, add mentor, add mentee through form or through load file from excel, mentor list, allocated list.

B.*HOD login*

This application is for HOD usage, so only a hod have access to this application. This Login page will give the access to hod through email and password to do all the above-mentioned services like mentee allocation, search mentee, add mentor, add mentee through form or through load file from excel, mentor list, allocated list.

1. Can see mentee allocated list of every semester
2. Can add wanted mentor.
3. Add mentee through form.
4. Add mentee through excel file
5. Allocate mentee randomly.
6. Can allocate mentee one by one.
7. Can see mentor list including mentor' mobile number, email, id.
8. Can search mentee.
9. Can generate allocated list as in pdf, excel format.
10. Find mentor by search
11. Can generate mentees report for a single mentor.

II. SYSTEM ANALYSIS

System analysis is the process of gathering and interpreting facts, diagnosing problems and using the facts to improve the system. System analysis deals with a detailed study of the various operations performed by the system and their relationship within and outside of the system. System analysis is the heart of the process. Analysis helps us to understand the present system. System analysis specifies what the system should do. A system is a set of components that interact to accomplish some purpose. This chapter explains the analysis process done for mentor system. Identifying the drawback of the existing system. Perform feasibility study. Identify hardware, software and database requirements. Create system definition that forms the foundation for subsequent work. System analysis helped me to study the existing system and to get the needs of proposed system.

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A. *The Existing System*

We don't have web-based mentor system in here. We only have the paper system to manage mentoring system in colleges and schools. It is more complicated and in case of missing it is difficult to recover the data.

B. *Need of the application*

The student mentoring system is introduced in the College. All the Teachers are involved in the process of mentoring. Every mentor is allotted with about 60 to 70 students to take care of them depending upon the program and division. Every mentor prepares a list of all the students allotted to him / her with details of Name, Class, Division, Roll Number, Contact Number and E Mail Id. The mentor has a chalked-out responsibilities to take care of all the mentees such as to provide them career counselling , to provide them personal counselling , to support them for any kind of difficulty in their curriculum, to make provision of remedial coaching for them and to always support them as and when required

C. *Requirements of New System*

- The motive of this Mentor System web Application is to allow the HOD to make mentee allocation for a mentor is easy a fast.
- This app uses firebase to power up the backend. It is a non-relational database and has some fast data fetching capabilities.so the app is fast and reliable.
- Provide Interactive interface through which a HOD can interact with different areas of the web application easily.
- This web application is available in any browser.

D. *Proposed System*

This system proposes solutions to all the above-mentioned problems. In this COVID-19 situation we need to keep social distance. In this case the online mentoring method really helps. The main objective of this application is to make mentee allocation for a mentor is easy a fast.

E. *Advantages of Proposed System*

Current mentoring system requires more time and budget to manage this system that solve through online. Best results with short time. Software's required for the system are easily available because of which it becomes a very less expensive system. User friendly GUI can guide the new user to operate the system.

F. *Feasibility Study*

A feasibility analysis involves a detailed assessment of the need, value and practically of a systems development. Feasibility analysis n forms the transparent decision at crucial points during the developmental process as we determine whether it is operationally, economically and technically realistic to proceed with a particular course of action.

G. *Types of Feasibility*

A feasibility analysis usually involves a thorough assessment of the financial (value), technical (practically), and operational (need) aspects of a proposal. From the initial studies it is clear that mentor system is operationally, technically , behaviourally , economically feasible and socially feasible.

H. *Operational Feasibility*

A systems development project is likely to be operationally feasible if it meets the 'needs and expectations of the organization. User acceptance is an important determinant of operational feasibility. Mentor system has the following functionalities include mentee allocation, search a mentee, add mentor, add mentee through form or through load file from excel, mentor list, allocated list. All functionalities work well as per the requirements of the scheme and deliver the required result in a fast and efficient manner. So, mentor system is operationally feasible.

I. *Technical Feasibility*

A systems development project may be regarded as technically feasible or practical if the organization has the necessary expertise and infrastructure to develop, install, operate and maintain the proposed system. Organization will need to make this assessment based on:

- Availability of technically qualified staff in-house for the duration of the project and subsequent maintenance phase.
- Availability of infrastructure in-house to support the development and maintenance of the proposed system.
- The capacity of the proposed system to meet initial performance expectations and accommodate new functionality over the medium term.
- Mentor system provides flexibility to manage all mentoring system functions in online.

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J. *Economic Feasibility*

This study is carried out to check the economic impact that the system will have on the organization. The amount of funds that the company can pour into the research and development of the system is limited. The expenditures must be justified and mentor system requires only computer/laptop with an Internet Connection. Thus, the developed system as well within the budget and the cost of the entire project will depend simply on the expenditure incurred for the hardware requirements. The software requirements can be easily fulfilled without any cost.

K. S*ocial Feasibility:*

The acceptance of study is to check the level of acceptance of the system by the user. This includes the process of training the user to use the system efficiently. The user must not feel threatened by the system, instead must accept it as a necessity. The level of acceptance by the users solely depends on the methods that are employed to educate the user about the system and to make him familiar with it. His level of confidence must be raised so that he is also able to make constructive criticism, which is welcomed, as he is the final user of the system.

L. *Software Requirement Specification(SRS)*

There are many students out there who have different problems and difficulties. Many of them are afraid or shy to share their problems to teachers. Our goal is to solve their these kind of problems. The real task is to bring out their problems. It is one of the complicated tasks to complete. Our web app gives a mentor for all mentees to become their listener. It will fix the complicated problems of mentees.

M. *Purpose*

This project is aimed for chalked-out responsibilities to take care of all the mentees such as to provide them career counselling , to provide them personal counselling , to support them for any kind of difficulty in their curriculum and in their personal life, to make provision of remedial coaching for them and to always support them as and when required. Mentor system also provide a listener for mentee to speak up their problems.

N. *Scope*

This system is aimed at a digitized way to manage mentoring system. It will save a lot of money and also time. It's way more efficient than the current paper process.

O. *Overview*

This system attempts to provide an online mentoring system for department HODs.

P. *General Description*

The system provides only access to a hod of the department. Hod need to go through a login process to use the system with a email and password. He is the one who has all rights to do mentee allocation, search a mentee. He can add new mentor and mentee through form or through load file from excel. and he can view mentor list and allocated list.

III. SYSTEM DESIGN

A. *HOD*

Only hod has the rights to access the system. The hod can log in to the system by using his specific email and password. He is the one who has all rights to do mentee allocation, search a mentee. He can add new mentor and mentee through form or through load file from excel. and he can view mentor list and allocated list. Also, he can delete mentee from allocated list and he can reallocate an allocated mentee. Hod can also can generate allocated list in pdf format or excel format if wanted to edit the list later.

B. *Input Design*

Input design is the process of determining inputs to a particular project. Input design determines whether the user interacts with the computer in an efficient manner. Mentor system uses the following different User Interfaces for inputting values or data to the system.

B. *Output Design*

The output design has been done so that the results of processing should be communicated to the user. Effective output design will improve the clarity and performance of outputs. Following are some of the Output User Interfaces designed for mentor system.

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C. *Database Design*

In this design process, the information domain model created during analysis is transformed to data structures that will implement the software for data and information storage. After we collect the data required for the application, we'll create each model for the application. We're using a non-relational database called Firebase. It stores data as collections and each collection has its own sub collection containing the related data.

D. *Process Design*

In process design, the overall structure of the process is checked out. The design is carried out using top-down design strategy. First the major modules are identified then they are divided into sub modules at the lowest level and they are addressed as a single function of a whole system.

IV. SYSTEM IMPLEMENTATION

A. *Coding Standards Used*

It is a set of standard guide lines which are / should be used when writing the source code for a program.

- Naming convention: We use camel cases to name variables and functions.
- Component based: Were spitted up the entire app into different components.
- DRY principle is used to avoid replication of code.
- Used less global variables.
- A better folder structure is used for maintain ability.
- Application logic and business logic is separated.

B. *Coding environment used.*

Mentor System is a web application so to simulate and build a web app Visual studio code is needed. It uses React.js framework, it was based on the node.js environment, so Node.js stable 18.4.0 is needed. Visual studio code is used to write the entire application. Also, it needs some important plugins to code smoothly. It includes (Bracket pair colorizer, ES6/ES7 React redux snippets, JavaScript.

V. SYSTEM TESTING.

Software testing is a process of running with intent of finding errors in software. Software testing assures the quality of software and represents final review of other phases of software like specification, design, code generation etc.

A. *Unit Testing*

Every Single field in the design of the project is entered with different kinds of values to know the acceptance and each time make sure that the values are saving to the server system.

B.*Integration Testing*

In integration testing a system consisting of different modules is tested for problems arising from component interaction. Integration testing should be developed from the system specification. Firstly, a minimum configuration must be integrated and tested. In my project I have done integration testing in a bottom-up fashion i.e., in this project I have started construction and testing with atomic modules. After unit testing the modules are integrated one by one and then tested the system for problems arising from component interaction.

B. *Validation Testing*

It provides final assurances that software meets all functional, behavioural & performance requirement. Black box testing techniques are used.

There are three main components

- Validation test criteria (no. in place of no. & char in place of char)
- Configuration review (to ensure the completeness of s/w configuration.)
- Alpha & Beta Testing-Alpha testing is done at developer's site i.e., at home & Beta testing once it is deployed. Since I have not deployed my application, I could not do the Beta testing.

Test Cases- I have used a number of test cases for testing the product. There were different cases for which different inputs were used to check whether desired output is produced or not.

1. Testing hod login with correct and incorrect emails and passwords
2. Addition of new mentors and mentees.
3. Mentee allocation after clear the mentor list.

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4. Reallocation and Deletion of allocated mentees.
5. Searching mentees.

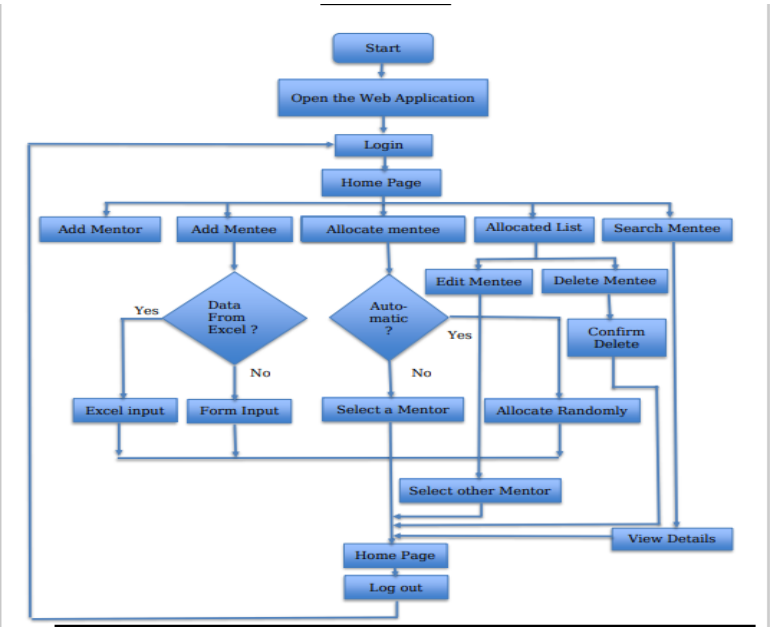
C. *White Box Testing*

For this testing technique all possible test cases are generated for testing every statement of subroutines, functions and modules of a class. Using these test cases every statement of functions and subroutines of a class are executed at least once for finding errors. Here all conditional branching statements and loop statements are tested. These errors are corrected after white box testing process.

VI. CONCLUSION

Mentor system is proposed to simplify the mentoring system in colleges. The aim is creating a better way to manage mentor system instead of current paper system. This method is secure and easy for use. It encourages to help mentees in a simple way. Through this the mentor also works for finding out hidden talent of the students in various aspects of academic, co – curricular, extra – curricular and extra mural activities so that they can be promoted to do various activities in the concerned area for their holistic development.

VII. APPENDIX



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