

# Automated Mentoring System

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**Abstract:** - Automation has become a boom for the present and future generation, which helps in efficient documentation of the data digitally for better transparency, centralization of data and for the quick review of the contents as and when required without spending much of the time in searching through loads of book which is an inefficient process. Mentoring is an age-old method which effectively and efficiently transfers the knowledge and skills from an experienced person to inexperienced personnel. This methodology is used in different sectors like industries, educational field for the overall upliftment. Mentoring requires constant meetings and documentation of the progress being noticed. This paper focusses on implementing the automation to the mentoring systems which can be utilized for the effective and efficient the mentoring system in Dept. of CSE, RYMEC. The tool being proposed would also be useful for the students to provide feedback about the facilities being provided by management and so on, which would reduce considerable amount of time compared to the present system in existence.

**Keywords :-** Mentoring, Mentee, Mentor Automation, Admin, login, System Architecture, feedback.

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## I. INTRODUCTION

Mentorship is a relationship in which a more experienced or more knowledgeable person helps to guide a less experienced or less knowledgeable person [1]. The mentor may be older or younger than the person being mentored, but he or she must have a certain area of expertise [2]. Mentorship experience and relationship structure affect the "amount of psychosocial support, career guidance, role modelling, and communication that occurs in the mentoring relationships in which the protégés and mentors engaged." [3]. Mentorship isn't a new topic which is being discussed, we experience it in our day to day lives [4]. For e.g. parents mentor their children on a daily basis for their improvement, similarly teachers mentor their students by guiding them towards right path. The mentorship provided by parents is based on their experiences in their own lives and their focus would be mostly concentrated on their own child [5], but the mentorship provided by teachers is a combined experience from their own lives and different students they have taught in their career [6]. Since teachers need to focus on group of students individually and the methods of mentorship would be different for each and every student, there needs to a maintenance of record, which is being done at present in the method of a individual record for each student and being maintained physically, which makes it difficult for teachers to go through those voluminous records of students and nowadays, students need to be monitored recurrently for giving feedback on their performances in academics as

well as extra-curricular activities for their time to time continuous improvements[7]. Also, students tend to skip these sessions thinking there wouldn't be any use for them to attend these sessions, and they tend to skip, which may become unnoticed by the teachers due to their regular workload [8]. Similarly, students are to provide their feedback anonymously about the facilities being provided by Management and teachers also are to be provided with regular feedback for their scope of improvements, either in the methodology of teaching, the contents being taught or the facilities being provided [9]. Currently, these are being carried out with lot of time consumption, labour-intensive and paper involvement in the process, which makes it difficult for the future reference of the feedback being collected and also to draw a conclusion through the feedback which has been provided from the students of the organization as it is difficult to read each and every feedback form submitted by students, also there is no hundred percent participation from the students, as these are conducted unexpectedly and also students fear backlash for any positive criticism which they have provided for the constructive good as a whole to be considered as negative, and also it consumes the valuable time of the teachers who are supposed to teach syllabus within stipulated time provided to them [10]. As explained till now, we can conclude that mentorship is an important process which is being carried out by teachers for the welfare of the students, so as to improve them in the areas in which they are lacking which is also burdening teachers with unnecessary records to be maintained and also to check whether

everyone has got the care as per their requirement [11]. The problems which have been discussed in detail can be eliminated through the proposed system, which is automation of the mentoring system. The automated mentoring system which is proposed would provide easy, clear, effective and efficient way of mentoring of the students in the Dept. of CSE, RYMEC and also eliminate any loop holes which are present in the current system of mentorship program.

**II. SYSTEM ARCHITECTURE**

Mentoring System comprises of mentor login, admin login along with data base as mentioned below, which would give a brief description of the working of the proposed automated mentoring system.

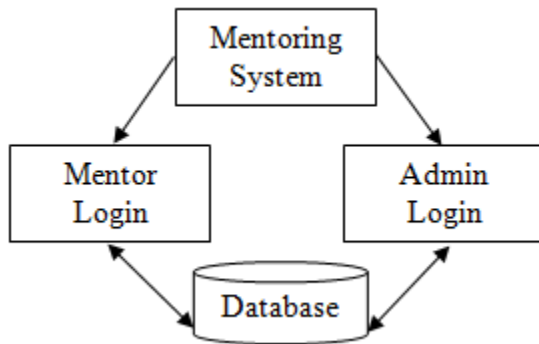


Fig1. Subsystem Architecture-1

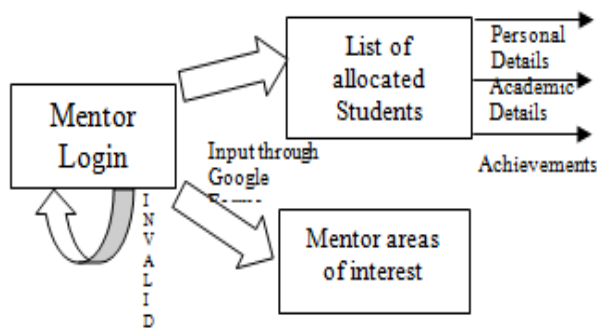


Fig2. Subsystem Architecture-2

**III. APPROACH**

The proposed automated mentoring system is a Web based application, which consists of functional and non-functional requirements as explained below

- o Functional Requirements
  - Mentor Module
  - Admin Module

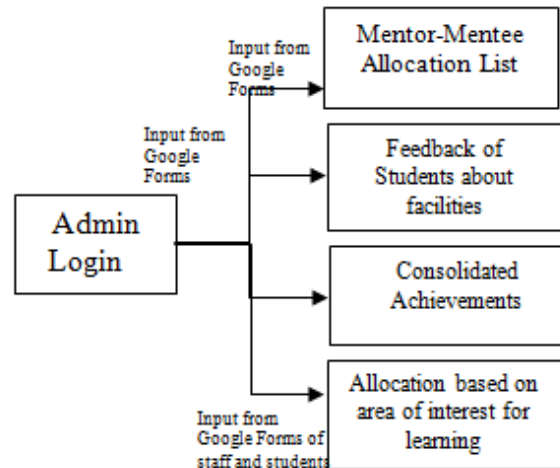


Fig3. Admin Login Details

o Non-Functional requirements

- Reliability
- Security
- Performance
- Data Integrity
- Maintainability
- Usability

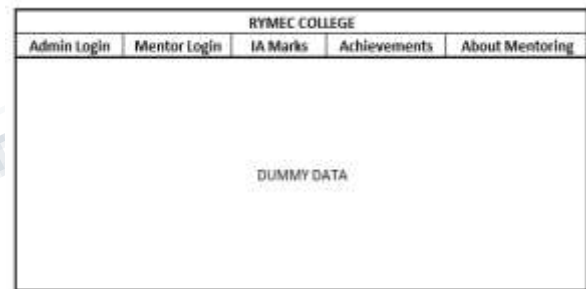


Fig4. Home Page

❖ Login:

- Mentor Login:
  1. With appropriate username and password, mentor can access the allocated students.
  2. Mentor will be able to check the personal details, previous semester and current semester details.
  3. Mentor can upload the certificates of the mentee for their respective achievements in different events.

Once Mentor logs in with appropriate user name and password, to enter the Internal assessment details of the mentee, the screen would display the dropdown menu with semester and section, as admin has already allotted

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the mentee, mentor needs to select the semester and section for entering the details.

RYMEC, Ballari Dept. of CSE										
Student Name	USN	1 <sup>st</sup> IA Marks / 2 <sup>nd</sup> IA Marks / 3 <sup>rd</sup> IA Marks	Sub 1			Att 1			Sub 2	Att 2
			Max	Min	Obtained	Max	Min	Present	.....	.....

**Fig5.Format for entering IA details of Mentee by Mentor**

The format for updating the respective subject IA marks for respective mentee is as shown in the fig below.

This format will be helpful to give a deep insight into the students' performance in the individual subjects, through which mentor can have a session with mentee for the lack of performance, and hence solving the root problem and in turn the performance of the students will be affected positively and will show an increased trend.

- Admin Login
  1. Mentor-mentee allocation: This list is provided by admin, for display and would be in the printable format.
  2. Feedback of students about facilities: The inputs for this are taken through online google forms.
  3. Consolidated achievements: Students with achievements in academics or extra co-curricular activities are displayed under respective mentors.
  4. Allocation based on area of interest for learning: Inputs taken through online google forms from staff and students would be utilized for mapping common interests, which would be utilized by student for approaching the faculties.

Admin Login	
User Name	
Password	
Ok	Cancel

**Fig6. Admin Login**

The table shown below is the format for the mentoring desk for the allotment of the mentor to the mentees, which captures the data of student and mentor being assigned for the future reference, and this would be

editable so as to incorporate any changes required occurred due to unexpected conditions.

RYMEC, Ballari Dept. of CSE	
Mentor ID	
Mentor Name	
Mentor User Name	
Mentor Password	
<b>ADD</b>	

**Fig7. Add Mentors**

RYMEC, Ballari Dept. of CSE	
USN	
Student Name	
Semester	
<b>ADD</b>	

**Fig8. Add students**

RYMEC, Ballari Dept. of CSE				
Student USN List	Student Name List	Mentor ID List	Mentor Name List	Allocate List
				Allocate
				Allocate
				Allocate
				Allocate
				Allocate

**Fig9. Editable Format of the Mentor Mentee allocation**

The table below is a format which would be capturing the feedback from the students about facilities and give a consolidated overall rating in the each of the facilities being rated, and these would be based on section to section, so as to capture the in-ground details so as to improve the problems being faced by section to section, as the problems won't be same as whole. This unique approach would be anonymous and also capture the in-ground reality for the better scope of improvement.

RYMEC, Ballari Dept. of CSE					SEM & SEC
Facilities	Ratings				
Labs	○ 5	○ 4	○ 3	○ 2	○ 1
Class	○ 5	○ 4	○ 3	○ 2	○ 1
Library	○ 5	○ 4	○ 3	○ 2	○ 1
...	...	...	...	...	...

**Fig10. Feedback of students about facilities**

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The table below shown is the format for capturing different achievements of the students, as students under mentor would be considerably less, it would give a better insight so as to capture individual students' achievements in different fields like sports, fests.

This would bring recognition to the students and encourage further to excel in the field and also mentors get an opportunity to nurture the budding talent.

RYMEC, Ballari Dept. of CSE						
USN	Student Name	Event Name	Mentor Name	Mentor ID	Event Date	Upload Certificate

**Fig11.Consolidated Achievements**

The table as shown below is the consolidated format which has been captured from the forms submitted by the students, and allocation of the mentors based on the interests being registered. This is an opportunity for the likeminded people to have constructive discussions which would help in the further upliftment of the knowledge of the mentee and mentors as well. This approach isn't confined for academics but also will be used for co-curricular activities. As this approach would bring likeminded people together under same roof, teams can be formed and also can be sent for the different competitions being held which would give further exposure to the mentees as well as for the mentors.

RYMEC, Ballari Dept. of CSE				
USN	Student Name	Areas of Interest		Mentor
		Academics	Co-Curricular	

**Fig12.Mentor Allocation based on areas of interest**

RYMEC, Ballari
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Dept. of CSE	
Personal Details	
Name:	
USN:	
Current Sem:	
Sec:	
Email:	
Phone Number:	
Parent Name:	
Parent Number:	
Address:	

**Fig13. Personal details of student**

USN									
Student Name									
Semester									
IA	Sub-1			Attendance			Sub-2		...
	Max	Min	Obtained	Max	Min	Obtained			
1 <sup>st</sup> IA									
2 <sup>nd</sup> IA									
3 <sup>rd</sup> IA									

**Fig14. Consolidated report**

Internals	Reason for poor performance	Remedial Assignment Status	Suggestions
IA-1			
IA-2			
IA-3			
<b>Add</b>		<b>Print</b>	

**Fig15. Counselling report with Add and Print for the addition of the report**

- ❖ Google Forms [12]:
- 1. Students feedback about the facilities.
- 2. Students area of interests to learn.
- 3. Faculty area of interests to teach.

Admin would be having the access for editing the lists and a consolidated list will be generated automatically for

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the effective results. Below are the lists which would be present after the admin login.

- Mentor Mentee Allocation List (gathered from the mentoring desk).
- Feedback of students about facilities (collected from the forms submitted by students through google forms).
- Details of irregular students whose attendance is less than 50% for filtering during IA (collected through IA portal).
- Enrolled students for learning (Collected from the forms submitted by students through google forms)
- Students achievements under the respective mentors (gathered from the data being updated by mentors through mentor login)
- Mentoring formats (gathered from the mentoring desk)
- Feedback forms (gathered from the mentoring desk)

RYMEC, Ballari Dept. of CSE	
Mentor Name	
Mentor ID	
Designation	
Subject	

*Fig16. Mentor area of interest*

RYMEC, Ballari Dept. of CSE	
Student Name	
USN	
Semester	
Subject	

*Fig17. Student area of interest*

Subject Ratings	
5	Outstanding
4	Excellent
3	Good
2	Average
1	Poor

Fig18. Subject ratings

#### IV. COMPARISON

Sl. No.	Existing System	Proposed System
1.	Pen to paper	Automated System

	work	
2.	Data Collection is hectic	Data Collection is centralized
3.	Mapping of domain is difficult and tiresome	Mapping domain of interest is effective, efficient and easy
4.	Achievements of the mentees aren't visible and transparent	Achievements of the mentees are made more visible and transparent
5.	Drawing conclusion from the whole lot of feedback forms is tiresome, difficult and inefficient.	Drawing conclusion is easy, effective and efficient.

#### V. ADVANTAGES

The system has benefits in reducing the paper work, accessible as and when required either by faculty or management, storing of data, to the point search, automatic periodic message passing to the parents and efficient follow up of mentee academic records and history, which could be utilized for drawing a conclusion on the progress being made by the mentee and also for the future use. The present mentoring system, aims at reducing the paper work and mentoring the students in a Centralized method. The student academic performance and their achievements are uploaded, which can be made visible to all the faculties, parents and management. This method will improve the performance of the students both in academic and multidisciplinary. Secondly, the potentiality of the mentors can be used to guide both inter-department and intra-department student. Further this software can also be used to mentor the students of public domain. The system is very much effective and efficient when compared with the present system hence making it a viable option.

#### VI. FUTURE SCOPE

The system can be improved further to accommodate all the students from different departments and it can be part of the official website for the easy accessibility to the management, faculty and students.

It can also be further developed to be integrated into an application to be even accessible through mobile for easy accessibility for the students, faculty and as well as management. The IA details once uploaded to the database, based on the further updates being made in the main database should be reflecting everywhere, which

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can be used to reduce the hectic work of updating the IA marks for the mentors and also reduce the chances of any discrepancies it is transparent system which can be viewed by students.

The achievements can also be uploaded by the students with proper supporting documents for the reduction in the burden of mentors and also can be used by placement cell for sharing data with companies to visit college.

### VII. CONCLUSION

The development and the approach of this proposed system is being carried out successfully. Further modules are to be developed with the above said features.

The design has been developed by considering the present system, which will be easy, effective and efficient for implementation as well as maintained properly without much effort. The proposed system will be effective and efficient in the implementation which will in turn reduce the time being spent and load on the lecturers and supporting staff.

Students will also be able to connect to the system and provide the reviews fairly and reliably as the feedback being provided will be anonymous. Once implemented it will prove to be an important asset for the feedback and as well as for the further improvements to be done to system as a whole and also for the students for their respective improvements in their interested categories and have an overall development.

In future, work on the remaining modules would be developed and implemented with more flexibility such that everything becomes automated hence reducing human effort.

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