

Review on SR- Tech Solution

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Abstract— The current education system is getting digitized at a very fast pace. Administrators of Educational institutions have become increasingly concerned about regularity of student attendance and their overall academic performance. In the earlier times, attendance record and performance evaluation was carried out manually like writing down the data using pen and paper. Most of the school's students and faculty are using iOS, Android and other LMS application based applications. The authors propose to develop application software for the college/university administration. The authors propose to use advanced java and other integrated technologies to develop the application that deals with the all the College/University related work. Administrative data needs to be digitized for the management to get accurate and up-to-date information regarding a student's academic career.

Keywords—Java, SpringBoot, Thymeleaf, SQL, GUI, Bootstrap.

I. INTRODUCTION

In this era College Management System is not an unknown term but the authors are introducing a similar concept which might be still unknown for some peoples. A lot of versions of deployment codes had to be maintained by the management. The development of application led to the centralized deployment and maintenance. Looking into this People brought up the concept of S-R Tech solution. That will definitely help that college/university who is not able to store their data and manage their works online.

There are still many areas in India where college/universities are not using online management systems. Even that college/university doesn't meet the latest system configuration. Looking into that college/university that is listed in 1-tier and 2-tier categories can also avail such facilities to do their all work on the system rather than following the traditional approaches. The design and implementation of an SR-Tech solution is to replace the traditional (by using pen and paper) approach[18]. College/university staffs can directly access all the aspects of student's academic progress through a secure, and easy to handle interface embedded in the software.

All data is thoroughly review people and validated on the software before actual record alteration occurs. In addition to a Admin user interface, the system plans for admin user interface, allowing users to access information and submit request in thus reducing processing time all data is stored securely on My SQL workbench managed by the school administration and ensures highest possible of security. The system future say complex logging systems to track all users access and user conformity to data access guideline and is accepted to increases the efficiency of school

administration system thereby decreasing the work hour needed to access and deliver student record to user online system[6] is widely accepted of doing modern business and is more convenient for user.

II. RELATED WORK

A. Purpose of the document

This project is for every kind of college, to run its administration in more efficient way. The project is aimed at providing the facility to do work in smooth manner. This project is focused to course planning to the faculties and to get the details of the each and every particular students. Although this project is considered as agile model, the project could be extended later to built full course planning system to big schools and also in the web application for the schools.

B. Literature review

[1].Faisal hijazi et al "E-School – School Management System" , according to the author They tell that to implement E-School, schools do not require expensive hardware and software, all schools need is internet connection and desktops. Their system works as a centralized database and application that schools can easily access the system from anywhere based on the login credentials.

[2] Akarsha Sudheer "A Survey on School Management System on Android and Windows Integrated with Smartcard Readers ", according to the author, They tell that there is a requirement of school Management System based on android and windows integrated with SMS gateway, Smartcard readers which will notify the parents about various activities of their child from the point child

swipes his/her smart card in the morning till he/she again swipes it at the time of boarding bus. In this paper, basic problem of student management in schools is defined and the main objective is to provide computer vision to it. As a prerequisite, various computerized systems being developed by using different techniques have been reviewed. This paper focuses on the advancement and modernization of the primitive methods which are being used till now in schools and colleges.

[3] Ms Elizabeth B Kuriakose "A Cost Effective School Management System for Disadvantaged Schools in the Free State Province Using the Software as a Service (SaaS) delivery model" According to author They create a dynamic software system that captures all information related to a student and delivers it to the educators, principal, higher authorities and parents. In order to achieve this aim, an investigation was launched as to the development of a cost-effective school management system for disadvantaged schools in the Free State Province using the Software as a Service (SaaS) delivery model. Although a variety of other school management systems exist in the market, they are often expensive and difficult to maintain.

[4] Majlinda Fetaji "Analyses of Factors that Influence the Reliability of e- school Management software System in High Schools in Macedonia" According to the author High schools have rapidly adapted computers in their administration, management and academy. School management uses papers and computers as tools to store the administrative and management data. However computers are not used to analyze data and output information. Therefore, SR- Tech solution is developed to facilitate teaching and administration staffs to manage activities in College/universities and parents to have in-time information about the performance of their child. As a result, users found that SR Tech Solution is capable of offering reliable and correct information and communication among teachers, parents, students and the general public and improved the management process in college/universities. Findings are presented and recommendations are provided.

C. Objectives

- To provide interface for admin , faculty and student.
- To increase the efficiency of College/universities record.
- To realize the statistical analysis function of student information.
- To increase the feasibility of College/universities works.
- To reduce the paper related work by giving a suitable environment.

III. METHODOLOGY

Agile Model has been used to develop this software. The Agile software development methodology is one of the

simplest and effective processes to turn a vision for a business need into software solutions. Agile is a term used to describe software development approaches that employ continual planning, learning, improvement, team collaboration, evolutionary development, and early delivery. It encourages flexible responses to change.

As demonstrated by Andrew et al [1] using a survey based approach, agile methodology is favourable due to improved communication between team members, quick releases and flexibility of designs. Scrum methodology is the most popular; and test driven development and pair programming are the least used practices. Anfan Zuo et al [2] apply formal methods into agile software development. They applied an object oriented approach to agile methodology to improve accuracy of the system analysis and facilitating system development with object-oriented ideas.

i. Gathering Requirements

Before taking up any projects, the requirements must be collected and verified for the feasibility.[1] The project can continued if the requirements' are feasible. In this phase all the requirements necessary to develop and implement the project are collected by the stakeholders and are conveyed to the developer and designer of the project. In this project, whose final product will be as web application[5], the requirements are categorized into three users, in which admin, faculty and students are in it.

- **Admin:** - This module is for admin. It will Register or update the details of professor and students.It can also add and update course details & also view the attendance and marks too of the particular student. Admin model is very important as it helps one to add details and delete details.
- **Professor:** - This module is for professor after login into the application the professor can take attendance of students, schedule exams, view and add marks, give assignments to the student with the deadline.
- **Student:** - This module is for student after login into the application the student can, give exams, submit assignments, view his/her attendance & marks, download study material.

ii. Design and Documents

A data flow diagram (DFD) maps out the flow of information for any process or system. It uses defined symbols like rectangles, circles and arrows, plus short text labels, to show data inputs, outputs, storage points and the routes between each destination.

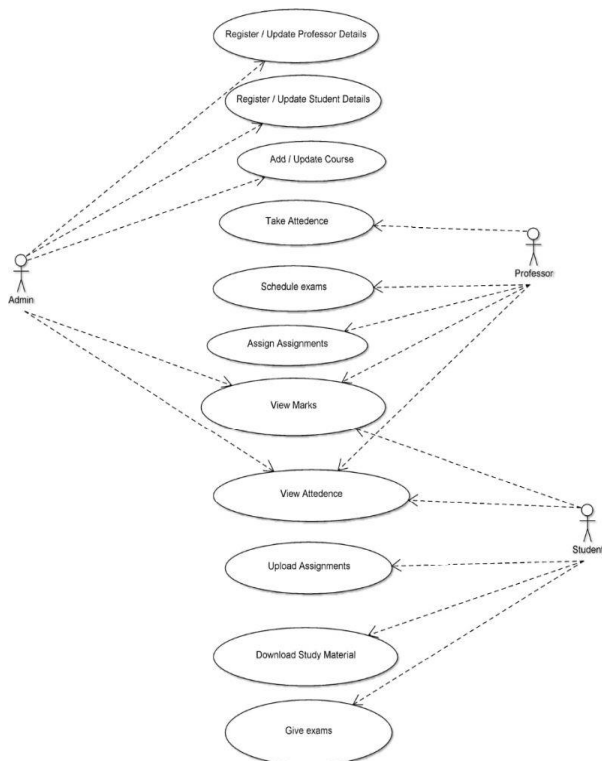


Figure 1. Use case diagram

In Figure 1 the developer has discussed about the use case diagram. It describes about the functionalities of users in the SR Tech solution.

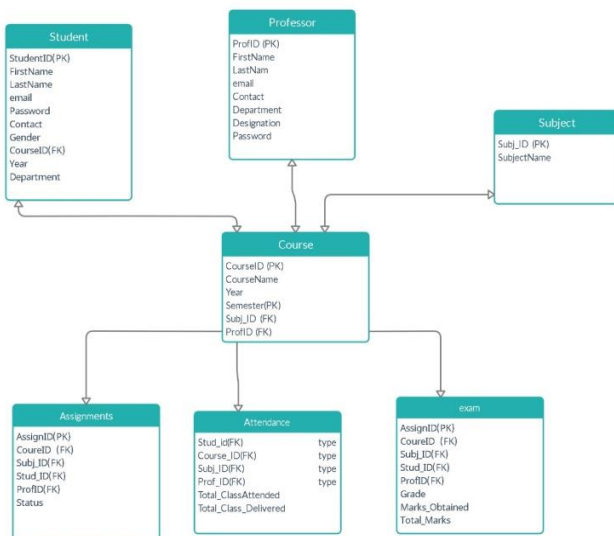


Figure 2. Database Diagram

In figure 2, it describes the association of each table in the database.

Development and Implementation

To develop the application based on spring boot architecture based on the agile methodology is used various frameworks such as jdbc, spring boot, thymeleaf, html, css are used to interact with the database MySQL workbench is

also employed. As per the requirement and design application are highly flexible and are hosted independently so that all applications are almost independent and are loosely coupled. Each application will have the same directory structure to maintain the uniformity in the process of development to make the application a single page web application, the front end of the application is developed using Eclipse

Testing

Any project before exposed to user must be tested to ensure that it behaves as expected. In this project, the application is tested by giving various types of input to check whether they are being validated or not and whether the application is behaving as expected or not. It meets the user requirements.

Maintenance

Once the application is tested and deployed, it must be maintained to satisfy the various constraints such as availability, reliability, etc the newer versions of the applications can be developed depending on the success or feedback of the users.

IV. RESULTS AND DISCUSSION

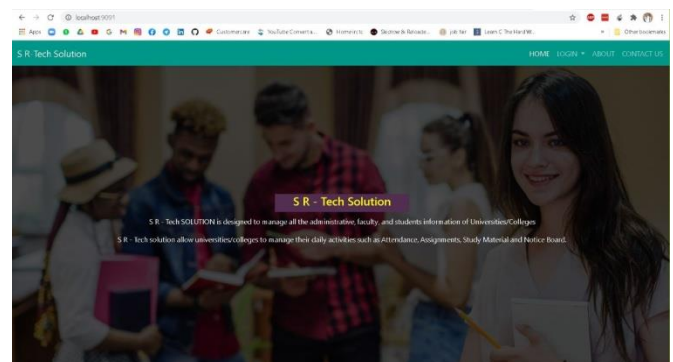


Figure 3. SR Tech solution homepage

In figure 4, it shows the SR Tech Solution homepage where it is displaying how different users can login and contact us for the queries. The frontend of the page is created with help of HTML5, CSS3, Bootstrap, Thymeleaf.

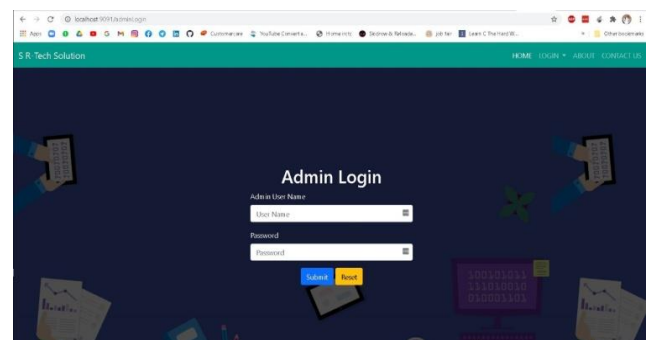


Figure 4. Admin Login

In figure 4, the developer has made a admin login module for entering the SR Tech solution web application after

entering the username and password the user has to select the user type i.e. Admin or Teacher or student. If the user selects the Admin User type & after clicking on the login button it will show the Admin homepage and vice versa.



Figure 6. Admin Dashboard

In figure 6, it shows the admin dashboard, where it displays the different functionalities of admin. Such as, student registration where the details of the new students could be filled, Professor registration where the details of the new professor could be filled, add or update course details where we can update or add new courses according to the need, view course details for showing the details of the existing course, view attendance and view marks could be seen for a particular student.



Figure 7. View marks

In figure 7, it shows the marks of a particular student of each subject and can see in which subject he/she needs to be improving. Similarly, we can show what is the progress of the students assignments submitted to the teacher in the single screen.

V. CONCLUSION AND FUTURE SCOPE

The results obtained from the experiments and testing ensures that the proposed method is efficient and user-friendly. As compared to existing methods of managing the academic institutions, this project which yields centralized software makes the work administration and management easier and provides detailed information. As this software is all based on the core java technology so it ensures that it will be user friendly and much easier to perform the tasks related to the college/universities.

The educational institution can be provided with an easy to user interface centralized software in which all services

associated with the institution can interact with each other and share the data. User requires internet connection for this application. As the application is developed using micro-service architecture and agile methodology, in the future services can be added without having to make changes to the existing code.

REFERENCES

- [1] Faisal hijazi, "E-School – School Management System" **May, 2016**
- [2] Akarsha Sudheer, "A Survey on School Management System on Android and Windows Integrated with Smartcard Readers" International Journal of Innovative Research in Science, Engineering and Technology, issue **vol. 4, issue 10, October, 2015**
- [3] Ms Elizabeth B Kuriakose, "A Cost Effective School Management System for Disadvantaged Schools in the Free State Province Using the Software as a Service (SaaS) delivery model." **March 2014**
- [4]Majlinda Fetaji, "Analyses of Factors that Influence the Reliability of e- school Management software System in High Schools in Macedonia" DOI :10.2498/iti.2013.0571
- [5] D. Zhibing Liu, Huixia Wang, Hui Zan, "Design and implementation of student information management system." 2010 International Symposium on intelligence information processing and trusted computing.
- [6] S. R.Bharmagoudar, Geeta R.B and S.G. Totad, "Web based student management system." Andra Pradesh, vol.2 June 2013.
- [7] M.A.Norasiah and A.Norhayti "Intelligent student information system." 4th International conference on telecommunication technology proceedings. Shah Alam, Malaysia, 0-7803-7773-7/03 **2013 IEEE**.
- [8] Meghan Cosier , Audri Gomez, Aja McKee ,Kimiya Sohrab Maghzi, "Smart phones permitted: How teachers use textmessaging to collaborate",Springer Science+Business Media New York , 20 October 2013. **pp. 347-358, 2013**
- [9] Kamaruddin, A., Nagalingam, S.V.A.L., Admodisastro, N., Md Rasid, N.S. , "Parent personal information system to improve parental involvement in children's learning process in elementary school", 3rd International Conference on User Science and Engineering (i-USER), IEEE, **pp. 174-179, 2014**
- [10] Yousuf Hasan, Mustafa Zaidi, Najmi Haider , W.U.Hasan, I.Amin, "Smart Phones Application development using HTML5 and related technologies: A tradeoff between cost and quality",IJCSI International Journal of Computer Science Issues, **Vol. 9, Issue 3, No 3, 2012**
- [11] Giulia Cavrini , Gina Chianese , Barbara Bocch, Liliana Dozza, "School Climate: Parents', Students' And Teachers' Perceptions", Procedia - Social and Behavioral Sciences 191, **pp. 2044 – 2048, 2015**
- [12] <http://developer.telerik.com/featured/what-is-a-hybrid-mobile-app/>
- [13]<https://developer.mozilla.org/enUS/docs/Web/Guide/HTML/HTML5>
- [14] <http://webdesign.about.com/od/css/>
- [15] <https://en.wikipedia.org/wiki/JavaScript>
- [16] Susana Juniu, "Computer mediated parent teacher communication",Actualidades Investigativas en Educación,ISSN 1409-4703, **Volume 9, Issue 3, pp. 1-19, 2009**
- [17] <http://teach.com/education-technology/parent-teacher-apps>
- [18] Deepa V. Jose , Lakshmi Priya C, G. Priyadarshini, Monisha Singh, "Challenges and Issues in Android Application Development- An Overview", International Journal of Advanced Research in Computer Science and Software Engineering, **Volume 5, Issue 1, pp. 811-814, 2015**
- [19] Rong-Jyue Fang , Wen-Jiuh Chiung , Sheng-Jen Yang , Hua-Lin Tsai , Kuo-Cheng Wu , Shue-Tien Juang , "The effects and

limits of teacher- parents communication by Mobile Device-The View of Teachers”, Proceedings of the 6th WSEAS International Conference on Applied Computer Science, **2007**

- [22] Elkafi Hassini , “*Student–instructor communication: The role of email*”, Computers & Education 47 , pp. **29-40, 2006**
- [23] Shin Kamada , Takumi Ichimura , Tetsuya Shigeyasu and Yasuhiko Takemoto, “*Registration system of cloud campus by using android smart tablet*”, SpringerPlus, 2014 [24] Li Ma , Lei Gu and Jin Wang, “*Research and Development of Mobile Application for Android Platform*”, International Journal of Multimedia and Ubiquitous Engineering, **Vol.9, No.4, pp.187-198, 2014**
- [25] Li-Hsing Ho, Chang-Liang Hung, Hui-Chun Chen ,“*Examining the Acceptance Behavior of Using Mobile Phone Messaging as a Parent- Teacher Medium Based on TAM and UTAUT Models*”, Advances in information Sciences and Service Sciences(AISS) 254, **Volume4, No.1, 2012**
- [26] Victor Matos, Rebecca Grasser ,“*An experience on multithreading using Android’s Handler Class*”, Consortium for Computing Sciences in Colleges,
- [27] Kristin Fergis, “*The Impact of an Agile Methodology on Software Development Costs*”, Project Report, EAS 499 Senior Capstone Project, **April, 2012.**
- [28] Nayan Jyoti Kar, “*Adopting Agile Methodologies of Software Development*”, SETLabs Briefing, Infosys Technologies, **vol. 4 no. 1, pp. 1-9, July-Sep. 2006.**
- [29] Feature Driven Development and Agile Modelling, <http://www.agilemodeling.com/essays/fdd.htm>
- [30] Robert Imreh, Mahesh S. Raisinghani, “*Impact of Agile Software Development on Quality within Information Technology Organizations*”, Journal of Emerging Trends in Computing and Information Sciences, **Vol. 2, No. 10, pp. 460-475, October 2011**
- [31] Sharifah Syed-Abdullah & Mike Holcombe & Marian Gheorge, “*The Impact of an Agile Methodology on the Well Being of Development Teams*”, Empir Software Eng, **pp. 143-167, Springer 2006.**

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