SYNOPSIS

PHRONTISTERY OVERSEE

Submitted by

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in partial fulfillment for the award of the degree of

BACHELOR OF TECHONOLOGY

IN

COMPUTER SCIENCE AND ENGINEERING

At

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CHAPTER 1

1. INTRODUCTION ABOUT TECHNOLOGY

1.1 What I learned from Industrial Training

1.1.1 HTML

HTML stands for Hyper Text Markup Language, which is the most widely used language on Web to develop web pages. HTML was created by Berners-Lee in late 1991 but "HTML 2.0" was the first standard HTML specification which was published in 1995. HTML 4.01 was a major version of HTML and it was published in late 1999...

1.1.2 CSS

Cascading **S**tyle **S**heets, fondly referred to as CSS, is a simple design language intended to simplify the process of making web pages presentable.

CSS handles the look and feel part of a web page. Using CSS, you can control the colour of the text, the style of fonts, the spacing between paragraphs, how columns are sized and laid out, what background images or colours are used, layout designs, variations in display for different devices and screen sizes as well as a variety of other effects.

CSS is easy to learn and understand but it provides powerful control over the presentation of an HTML document. Most commonly, CSS is combined with the markup languages HTML or XHTML.

1.1.3 JAVASCRIPT

JavaScript is a cross-platform, object-oriented scripting language used to make webpages interactive (e.g., having complex animations, clickable buttons, popup menus, etc.). There are also more advanced server-side versions of JavaScript such as Node.js, which allow you to add more functionality to a website than downloading files (such as Realtime collaboration between multiple computers). Inside a host environment (for example, a web browser), JavaScript can be connected to the objects of its environment to provide programmatic control over them.

JavaScript contains a standard library of objects, such as Array, data and math and a core set of language elements such as operators, control structures, and statements. Core JavaScript can be extended for a variety of purposes by supplementing it with additional objects.

1.1.4 TYPE SCRIPT

TypeScript is an open-source, object-oriented programming language, which is developed and maintained by Microsoft under the *Apache 2* license. It was introduced by Anders Hejlsberg, a core member of the development team of C# language. TypeScript is a strongly typed superset of JavaScript which compiles to plain JavaScript. It is a language for application-scale JavaScript development, which can be executed on any browser, any Host, and any Operating System. TypeScript is not directly run on the browser. It needs a compiler to compile and generate in JavaScript file. TypeScript is the *ES6 version* of JavaScript with some additional features.

1.1.5. ANGULAR

Angular is a platform and framework for building single-page client applications using HTML and TypeScript. Angular is written in TypeScript. It implements core and optional functionality as a set of TypeScript libraries that you import into your apps.

The architecture of an Angular application relies on certain fundamental concepts. The basic building blocks of the Angular framework are Angular components that are organized into *NgModules*. NgModules collect related code into functional sets; an Angular app is defined by a set of NgModules. An app always has at least a *root module* that enables bootstrapping, and typically has many more *feature modules*.

Angular *NgModules* differ from and complement JavaScript (ES2015) modules. An NgModule declares a compilation context for a set of components that is dedicated to an application domain, a workflow, or a closely related set of capabilities. An NgModule can associate its components with related code, such as services, to form functional units.

Every Angular app has a *root module*, conventionally named AppModule, which provides the bootstrap mechanism that launches the application. An app typically contains many functional modules.

Like JavaScript modules, NgModules can import functionality from other NgModules, and allow their own functionality to be exported and used by other NgModules. For example, to use the router service in your app, you import the Router NgModule.

1.1.6. MATERIAL DESIGNN & SCSS

Material Design-:

Material Design (codenamed **Quantum Paper**) is a design language that Google developed in 2014. Expanding on the "card" motifs that debuted in Google Now, Material Design uses

more grid-based layouts, responsive animations and transitions, padding, and depth effects such as lighting and shadows.

Designer Matias Duarte explained that, "unlike real paper, our digital material can expand and reform intelligently. Material has physical surfaces and edges. Seams and shadows provide meaning about what you can touch." Google states that their new design language is based on paper and ink but implementation takes place in an advanced manner.

Material Design will gradually be extended throughout Google's array of web and mobile products, providing a consistent experience across all platforms and applications. Google has also released application programming interfaces (APIs) for third-party developers to incorporate the design language into their applications. The main purpose of material design is creation of new visual language that combines principles of good design with technical and scientific innovation.

In 2018, Google detailed a revamp of the language, with a focus on providing more flexibility for designers to create custom "themes" with varying geometry, colours, and typography. Google released Material Theme Editor exclusively for the macOS design application Sketch. In 2018, with the introduction of the ability to create custom themes, Google also began redesigning most of their apps into a customized and adapted version of Material Design called the Google Material Theme, also dubbed "Material Design 2", which heavily emphasized white space, rounded corners, colourful icons, bottom navigation bars, and utilized a special size-condensed version of Google's proprietary Product Sans font called Google Sans. As of 2020, most Google applications have also applied the new Google Material Theme design, with the notable exception of YouTube.

SCSS-:

CSS on its own can be fun, but stylesheets are getting larger, more complex, and harder to maintain. This is where a pre-processor can help. Sass lets you use features that don't exist in CSS yet like variables, nesting, mixings, inheritance and other nifty goodies that make writing CSS fun again.

Once you start tinkering with Sass, it will take your pre-processed Sass file and save it as a normal CSS file that you can use in your website.

The most direct way to make this happen is in your terminal. Once Sass is installed, you can compile your Sass to CSS using the sass command. You'll need to tell Sass which file to build

from, and where to output CSS to. For example, running sass input. CSS output.css from your terminal would take a single Sass file, input. CSS, and compile that file to output.css.

You can also watch individual files or directories with the --watch flag. The watch flag tells Sass to watch your source files for changes, and re-compile CSS each time you save your Sass.

1.1.7. EXPRESS SERVER

Express.js, or simply **Express**, is a back-end web application framework for Node.js, released as free and open-source software under the MIT License. It is designed for building web applications and APIs. It has been called the de facto standard server framework for Node.js.

The original author, described it as a Sinatra-inspired server, meaning that it is relatively minimal with many features available as plugins. Express is the back-end component of popular development stacks like the MEAN, MERN or MEVN stack, together with the MongoDB database software and a JavaScript front-end framework or library.

History

Express.js was founded by TJ Holowaychuk. The first release, according to Express's GitHub repository, was on the 22nd of May, 2010. Version 0.12

In June 2014, rights to manage the project were acquired by Strong Loop. Strong Loop was acquired by IBM in September 2015, in January 2016, IBM announced that it would place Express.js under the stewardship of the Node.js Foundation incubator.

Express Server is a **web** application framework for Node. js that allows you to spin up robust APIs and **web servers** in a much easier and cleaner way. It is a lightweight package that does not obscure the core Node.

The primary **use** of **Express** is to provide server-side logic for web and mobile applications, and as such it's **used** all over the place.

1.1.8. MONGO DB

MongoDB is an open-source document database and leading NoSQL database. MongoDB is written in C++. This tutorial will give you great understanding on MongoDB concepts needed to create and deploy a highly scalable and performance-oriented database. It will throw light on MongoDB concepts and after completing this tutorial you will be at an intermediate level of expertise, from where you can take yourself at higher level of expertise. basic understanding of database, text editor and execution of programs, etc. Because we are going to develop high performance database, so it will be good if you have an understanding on the basic concepts of Database (RDBMS).

MongoDB is a cross-platform, document-oriented database that provides, high performance, high availability, and easy scalability. MongoDB works on concept of collection and document.

Database

Database is a physical container for collections. Each database gets its own set of files on the file system. A single MongoDB server typically has multiple databases.

Collection

Collection is a group of MongoDB documents. It is the equivalent of an RDBMS table. A collection exists within a single database. Collections do not enforce a schema. Documents within a collection can have different fields. Typically, all documents in a collection are of similar or related purpose.

1.1.9. NODE

Node.js is a server-side platform built on Google Chrome's JavaScript Engine (V8 Engine). Node.js was developed by Ryan Dahl in 2009 and its latest version is v0.10.36. Node.js is an open source, cross-platform runtime environment for developing server-side and networking applications. Node.js applications are written in JavaScript, and can be run within the Node.js runtime on OS X, Microsoft Windows, and Linux.

Node.js also provides a rich library of various JavaScript modules which simplifies the development of web applications using Node.js to a great extent.

Features of Node.js

Asynchronous and Event Driven − All APIs of Node.js library are asynchronous, that is, non-blocking. It essentially means a Node.js based server never waits for an API to return data. The server moves to the next API after calling it and a notification mechanism of Events of Node.js helps the server to get a response from the previous API call.

Very Fast − Being built on Google Chrome's V8 JavaScript Engine, Node.js library is very fast in code execution.

Single Threaded but Highly Scalable − Node.js uses a single threaded model with event looping. Event mechanism helps the server to respond in a non-blocking way and makes the server highly scalable as opposed to traditional servers which create limited threads to handle.

CHAPTER 2

2. INTRODUCTION (PROJECT PROFILE)

2.1 PROBLEM DEFINITION:

The "College Web Application" that has been developed to override the problems prevailing in the practicing manual system. It is a user friendly "College Web Application" that can lead to error free, secure, reliable and fast management system. It can assist the user to concentrate on their other activities rather than to concentrate on the record keeping.

The main motive of this website is the interaction between teachers and students. This system also come with the remote access features so, that one can manage their workforce anytime, at all the times. These systems will ultimately allow you to better manage resources. In the offline system, it is an overhead to keep the records related to the faculty, students and parents on the papers. Sometimes it is not easy to provide the information to each and everyone. With the help of this website teachers can upload any of the information and vice-versa. Work can be given to the students by their teachers and the students can also revert their work online. And it is easy to maintain the record of their work. At the end of week or a month one can also generate the report of the students and share that with their parents as well.

2.2MODULES OVERVIEW:

1. ADMIN- Admin is the one who controls whole system, every person that is involved in this project. Admin has the power to create, update or delete any record of the system. Admin will be able to view the profile of any other user in the system. Whenever a student is registered into the college, a class and the related section will be assigned by the admin to the student. Assigning timetables to the teachers and students will be the admin's responsibility. The admin will approve the leave application of the teachers and students.

Admin can perform add/update/delete and search following module:

1. course module
2. semester module
3. subject module
4. Student module
5. exam module
6. result module

7. the attendance module
8. faculty module
9. college info module
10. download module
11. event module
12. news module
13. login module & user type module

Admin can create an online blacklist using student attendance. Admin can upload student data as excel file as well as syllabus, blacklist, exam time table, student result & attendance, and fresh photo gallery.

2. TEACHER- The teacher can take the attendance of the students. He/she just has to enter the class and their roll no into the portal and the whole list pf the registered students of the class will be displayed.

Teacher also give a login to manage his/her profile.

Teacher can view own subject result so faculty can easily analyse own result so they will try to better result. Teacher can view own subject attendance. Teacher can upload own subject assignment.

1. Mark the attendance:
2. Assign and check the work
3. Upload the notes and video lectures
4. View student profile
5. Generate the reports of the students

3. STUDENT-

1. View and upload the work
2. View the marks of their works
3. View their report cards, timetable
4. The student can view own result & attendance. The student can know about college info., management, goal & objective. The student will display fresh news & event. The student downloads fresh exam time table, syllabus, assignment as well as view blacklist which created by admin based on its attendance.

CHAPTER 3

3. LITERATURE SURVEY

3.1 Existing System

In the existing system all the works are done manually. Students have to fill up admission form on paper and all the records are maintained on paper file. In this system it is very difficult to find any information. And it is very difficult to maintain the fees and accounting reports of college in proper way.

3.1.1 Requirements: -

For this project minimum hardware and software requirement are listed below: The hardware Requirements stated above are recommended for the optimum possible performance of the new system (computerized system).

Minimum Hardware and Software Requirements-:

Minimum Hardware Requirements-:

Name of the component	Specification
Processor	Intel ® Celeron ®
RAM	2.00 GB
Mouse	Any Mouse
Monitor	15-inch colour monitor
Keyboard	Any keyboard
Printer	In case of printing reports

Minimum Software Requirements-:

Name of the component	Specification
Operating System	Windows Operating system
Language	Angular (front end) & Node js (back end)
Database	Mongo DB
Browser	Use any like google chrome, Mozilla Firefox
Scripting language Enable	Type script

CHAPTER 4

4. Proposed system

1) The Proposed System provides the facilitates the administrators to know the present status of a student of the college.
2) The software gives the information such as student personal data, student fees details, results etc.
3) Generating the print reports of student personal, fee as well as result details….
4) Hence, we conclude that the present system (CMS for Colleges) would definitely help the user by saving time and effort by reducing the processing time and volume of errors.
5) The efficiency of the work done would be improved and work satisfaction on the part of the employees after computerization would definitely on high.
6) The customer satisfaction would be definitely higher when compared to the old manual system.

4.1 Benefits of proposed system

The benefits of proposed system for the students are they can create any kind of certificate easily using this system. They can easily retrieve all information related to student and employee. Admin has all the Collective records of students of all the branches. Admin can check all the records of employees of all departments anytime. This system gives easy approach to find the detail information for any student/employee. Using this system, it is very easy to handle all functionality of college. This system is beneficial for both students and employees as they can get all previous or current information when they need. This system is also helpful to maintain the students record like admission record, fees record, exam result records. This system can help to get all or a particular student attendance information. Also, it can help to maintain the fees and accounting reports of college in proper way. This system also helps to generate mark sheets of current year.

CHAPTER 5

5. BENEFITS

5.1 Benefits of project

1) Using this project, the details can be accessed from anywhere at any time.
2) The implementation of this project promotes education effectively.
3) It can be searched more easily from anywhere.
4) You can view the complete map of city using this project.
5) Computerization
6) Automation
7) Easy interaction
8) Multi-user account system
9) Responsive user interface
10) Homework documentation
11) Class routine schedule
12) Profile system
13) Daily attendance
14) Notes and video lectures
15) Generate reports

CHAPTER 6

6 CONCLUSIONS

This paper presents a method for increasing information requested by students with the use of automated System. In this, instead of direct Contacting with direct Contacting with the faculty the student can directly checks the Results from the System if the student is registered in.

It helps educational institute to do regular activities accurately, fastly and reliably.

By using this, student and faculty can find out overall attendance percentages, fee details and result analysis.

It increases quality in work for educational institutes.

1) The software facilitates the administrators to know the present status of a student of the college.
2) The software gives the information such as student personal data, student fees details, results etc.
3) Generating the print reports of student personal, fee as well as result details.
4) Hence, we conclude that the present system would definitely help the user by saving time and effort by reducing the processing time and volume of errors.
5) The efficiency of the work done would be improved and work satisfaction on the part of the employees after computerization would definitely on high.
6) The customer satisfaction would be definitely higher when compared to the old manual system

CHAPTER 7

7 REFERENCES

This System deals with all kind of student details, academic related reports, college details, course details, curriculum, batch details and other resource related details too. It tracks all the details of a student from the day one to the end of his course which can be used for all reporting purpose, tracking of attendance, progress in the course, completed semesters years, coming semester year curriculum details, exam details, project or any other assignment details, final exam result; and all these will be available for future references too. Our program will have the databases of Courses offered by the college under all levels of graduation or main streams, teacher or faculty's details, batch execution details, students' details in all aspects. This program can facilitate us explore all the activities happening in the college, even we can get to know which teacher / faculty is assigned to which batch, the current status of a batch, attendance percentage of a batch and upcoming requirements of a batch. Different reports and Queries can be generated based of vast options related to students, batch, course, teacher / faculty, exams, semesters, certification and even for the entire college.

7.1 BIBLIOGRAPHY-:

Website URLs References

www.ggogle.com

www.wikipedia.com

Text Book referred

The following books and manuals provided a lot of help to us in making this project a reality.

1) Web Application Development with MEAN.
2) MEAN Web Development.
3) Pro MERN Stack.

Search Engine Used

1) Google
2) Yahoo