VISVESVARAYATECHNOLOGICAL UNIVERSITY

JNANA SANGAMA, BELAGAVI – 590 018



An Internship Project Report on

Student Attendance Management System

Submitted in partial fulfillment of the requirements for the VII Semester of degree of **Bachelor of Engineering in Information Science and Engineering** of Visvesvaraya Technological University, Belagavi.

Submitted By

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Under the Guidance of

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Department of Information Science and Engineering

RNS Institute of Technology

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2021-2022

RNS INSTITUTE OF TECHNOLOGY

Dr. Vishnuvaradhan Road, Rajarajeshwari Nagar post, Channasandra, Bengaluru-560098

DEPARTMENT OF INFORMATION SCIENCE AND ENGINEERING



CERTIFICATE

Certified that the Internship work entitled *Student Attendance Management System* has been successfully completed by **Shwetha B** (1RN18IS105) a Bonafide student of RNS Institute of Technology, Bengaluru in partial fulfillment of the requirements of 8th semester for the award of degree in Bachelor of Engineering in Information Science and Engineering of Visvesvaraya Technological University, Belagavi during academic year 2021-2022. The internship report has been approved as it satisfies the academic requirements in respect of internship work for the said degree.

Dr. R Rajkumar	Dr. Suresh L	Dr. M K Venkatesha
Internship Guide	Professor and HoD	Principal
Associate Professor	Department of ISE	RNSIT
Department of ISE	RNSIT	
Name of the Examiners	External Viva	Signature with Date
1		1
2		2

DECLARATION

I, **Shwetha B** [USN: 1RN18IS105] student of VII Semester BE, in Information Science and Engineering, RNS Institute of Technology hereby declare that the Internship work entitled *Student Attendance Management System* has been carried out by us and submitted in partial fulfillment of the requirements for the *VII Semester degree of Bachelor of Engineering in Information Science and Engineering of Visvesvaraya Technological University, Belagavi* during academic year 2021-2022.

Place: Bengaluru

Date:

Shwetha B (1RN18IS105)

ABSTRACT

The ability to compute the attendance percentage becomes a major task as manual computation produces errors, and wastes a lot of time. For the stated reason, an efficient Web-based application for attendance management system is designed to track student's activity in the class. This application takes attendance electronically and the records of the attendance are storing in a database. MySQL used for the Application Database. The system designed in a way that can differentiate the hours of theoretical and practical lessons since the rate of them is different for calculating the percentages of the student's absence.

The test case of the system exposed that the system is working enormously and is ready to use to manage to attend students for any department of the University. Student attendance management system deals with the maintenance of the student's attendance details. It is generates the attendance of the student on basis of presence in class. It is maintained on the daily basis of their attendance. The staffs will be provided with the separate username & password to make the student's status. The staffs handling the particular subjects responsible to make the attendance for all students. Only if the student present on that particular period, the attendance will be calculated.

ACKNOWLEDGEMENT

At the very onset we would like to place our gratefulness to all those people who helped

me in making the Internship a successful one.

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the enlightenment of the very experienced teachers also plays a paramount role because it

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First of all, we would like to thank the Management of RNS Institute of

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We thank Mr. Ramesh Kumar, Partner, TechieAid, for providing the

opportunity to be a part of the Internship program and having guided me to complete the

same successfully.

We also thank our internship coordinator **Dr. R Rajkumar**, Associate Professor,

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this assignment.

SHWETHA B

USN: 1RN18IS105

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ABBREVIATIONS

Acronym	Description
ADO	Active X Data Object
SQL	Structured Query Language
MSSQL	Microsoft SQL Server
HTML	Hypertext Markup Language
CSS	Cascading Style Sheets
CLR	Common Language Runtime
ΙE	Internet Explorer
VB	Visual Basics
ISO	International Organization of Standardization
ANSI	American National Standard Institutes

1. INTRODUCTION

C# is a general-purpose, object-oriented programming language that is structured and easy to learn. It runs on Microsoft's .Net Framework and can be compiled on a variety of computer platforms.

C# is a boon for developers who want to build a wide range of applications on the .NET Framework Windows applications, Web applications, and Web services—in addition to building mobile apps, Windows Store apps, and enterprise software. It is thus considered a powerful programming language and features in every developer's cache of tools.

ADO.NET is a set of classes (a framework) to interact with data sources such as databases and XML files. ADO is the acronym for ActiveX Data Objects. It allows us to connect to underlying data or databases. It has classes and methods to retrieve and manipulate data.

The following are a few of the .NET applications that use ADO.NET to connect to a database, execute commands and retrieve data from the database.

- ASP.NET Web Applications
- Console Applications
- Windows Applications

Merits of C#:

- Being an object-oriented language, C# allows you to create modular, maintainable applications and are usable codes.
- Easy to develop as it has a rich class of libraries for smooth implementation of functions.
- Enhanced integration as an application written in .NET will integrate and interpret better when compared to other NET technologies
- As C# runs on CLR, it makes it easy to integrate with components written in other languages.

- It's safe, with no data loss as there is no type-conversion so that you can write secure codes.
- The automatic garbage collection keeps the system clean and doesn't hang it during execution and cross-platform support as it requires to run on NET Framework.

1.1 BACKGROUND

The main aim of Student attendance system project is to maintain attendance records of student for any organization school or college. In this asp.net project post we will discuss attendance system project for school students. We developed this attendance system as website application using C# language in Visual Studio ASP.Net and use sql server for database server.

The student attendance management system project used to maintain school students attendance records. The attendance project has three user module for run the system Admin, Staff and Student. Initially the system will be blank, The Administrator has a rights to create standard and classroom for school and same time he has to add staff detail. Administrator generates unique username and password for all staff while adding staff detail. All staff maintain attendance of student, generate reports month wise, date wise.

Attendance Management System is software developed for daily student attendance in schools, colleges and institutes. It facilitates to access the attendance information of a particular student in a particular class. This system will also help in evaluating attendance eligibility criteria of a student. By just a click on the mouse, the system will be able to produce the students' attendance report thus reducing the need for manual labor which is prone to human errors and time consuming.

1.2 REQUIREMENTS

Software Requirements

Name of Components	Specification
Operating System	Windows 10
Language	HTML, CSS, C#, JavaScript, Bootstrap
Database	MSSQL
Browser	Chrome, IE
Integrated Development Environment	Microsoft Visual Studio 2019, Microsoft SQL Server 2019

Hardware Requirements

Name of Components	Specificati on
Processor	10 TH Gen CORE i7 Processor
RAM	8GB
Hard Disk	512 GB SSD

2. SYSTEM DESIGN

2.1 CURRENT DESIGN

The below figure shows the database that could be entered in an attendance sheet weekly which includes date, month and names of the student. Every week the student's attendance is entered here and analyzed on the basis of their records.

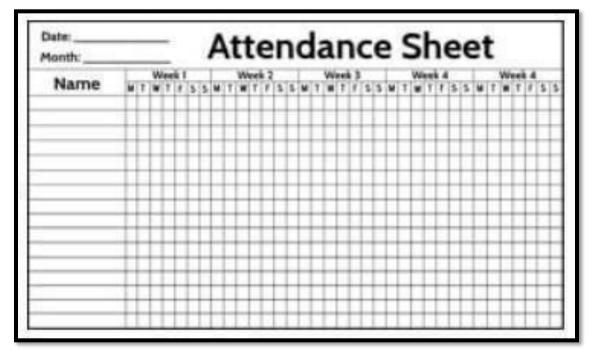


Figure 2.1 Attendance Sheet

2.2 PROPOSED DESIGN

The Admin is a person who run and manage the system, in this project the owner or director of the school has rights of admin. The Admin creates the structure of a system to creating standard and classroom. The main aim of the attendance system fulfill by staff. Staff can add student detail and fill the attendance daily for his division. The staff can only fill attendance for his division students and he can manage leaves and complains made by only his division student. All student have unique username to access the system. After login into system student can view his attendance reports and manage his account.

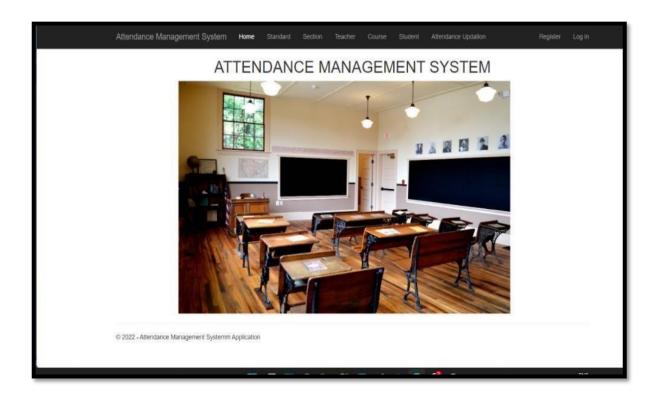


Figure 2.2 Home Page

3. SYSTEM DESIGN

3.1 DATABASE CHANGES

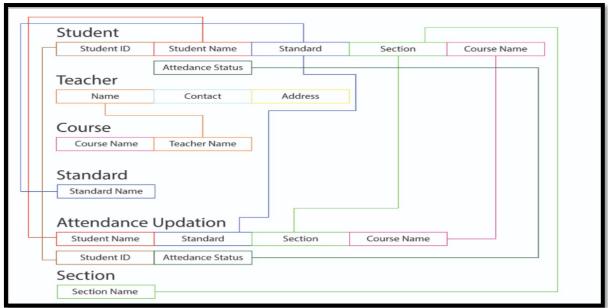


Figure 3.1 Relational Attendance Management System Schema Diagram

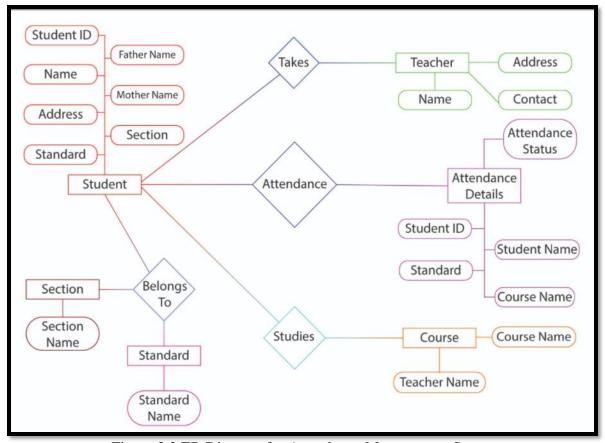


Figure 3.2 ER Diagram for Attendance Management System

3.2 TABLE DESCRIPTION

1. Migration History:

Table Schema: The Schema generated in Microsoft SQL Server Management Studio Table 3.2.1 Migration History

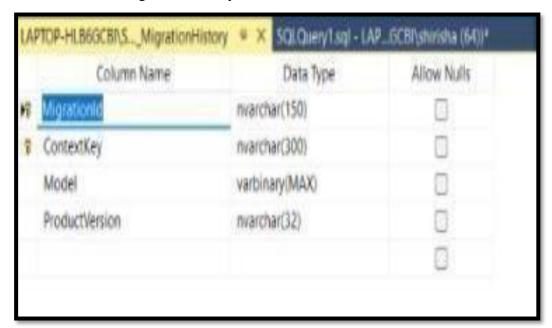
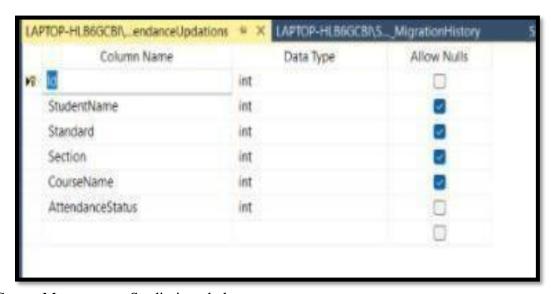


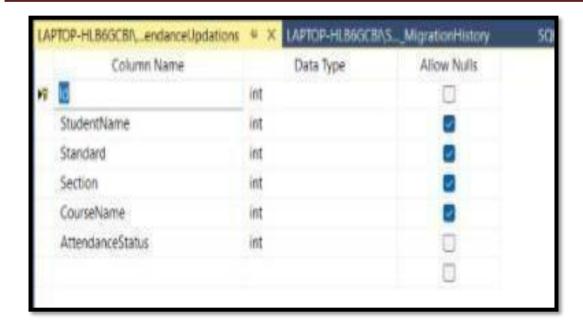
Table Structure: The data population with sample data in Microsoft SQL



Server Management Studio is as below

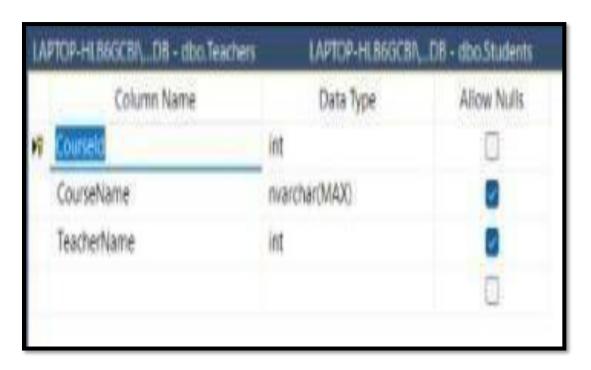
2. ASP Net Roles:

Table Schema: The Schema generated in Microsoft SQL Server Management Studio Table 3.2.2 ASP Net Roles



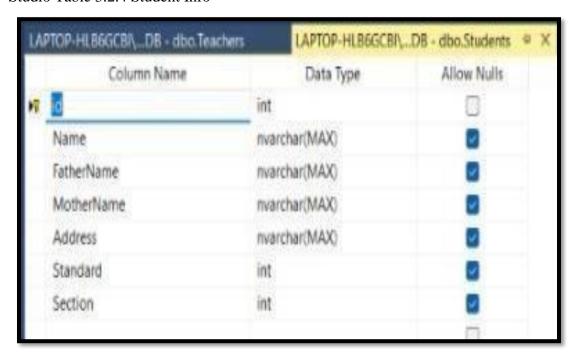
3. ASP Net User Roles:

Table Schema: The Schema generated in Microsoft SQL Server Management Studio Table 3.2.3 ASP Net User Roles



4. Student Info:

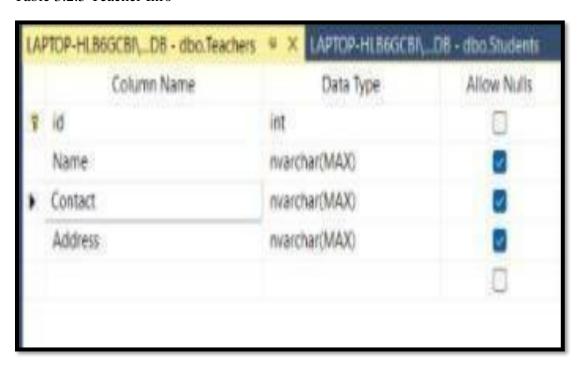
Table Schema: The Schema generated in Microsoft SQL Server Management Studio Table 3.2.4 Student Info



5. Teacher Info:

Table Schema: The Schema generated in Microsoft SQL Server Management Studio

Table 3.2.5 Teacher Info



4. IMPLEMENTATION

4.1 USER INTERFACE IMPLEMENTATION

The front-end is built using a combination of technologies such as Hypertext Markup Language (HTML), JavaScript, Boot strap and Cascading Style Sheets (CSS). Front-end developers design and construct the user experience elements on the web page or app including buttons, menus, pages, links, graphics and more.

4.1.1 Hypertext Markup Language

Hypertext Markup Language (HTML) is the standard markup language for creating web pages and web applications. With Cascading Style Sheets (CSS) and JavaScript it forms a triad of cornerstone technologies for the World Wide Web. Web browsers receive HTML documents from a web server or from local storage and render them into multimedia web pages, HTML, describes the structure of a web page semantically and originally included cues for the appearance of the document.

HTML elements are the building blocks of HTML pages. With HTML constructs, images, and other objects, such as interactive forms, may be embedded into the rendered page. It provides a directly means to create structured documents by denoting structural semantics for text such as headings, paragraphs, lists, links, quotes and other items. HTML elements are delineated by tags, written using angle brackets. Tags such as <imp> and <input/> introduce content into the page others such as ... surround and provide information about document text and may include other tags as sub -elements. Browsers do not display the HTML tags but use them to interpret the content of the page. HTML can embed programs written in a scripting language such as JavaScript which affect the behavior and content of web pages. Inclusion of CSS defines the look and layout of content.

4.1.2 CASCADING STYLE SHEETS

Cascading Style Sheets (CSS) is a style sheet language used for describing the presentation of a document written in a markup language. Although most often used to set the visual style of web pages and user interfaces written in HTML and XHTML, the

Language can be applied to any XML.document, including plain XML, SVG and XUL, and is applicable to rendering in speech, or on other media. Along with HTML and JavaScript, CSS is a cornerstone technology used by most websites to create visually engaging web pages, user interfaces for web applications, and user interfaces f or many mobile applications.

CSS is designed primarily to enable the separation of presentation and content, including aspects such as the layout, colors, and fonts. This separation can improve content accessibility, provide more flexibility and control in the specification of presentation characteristics, enable multiple HTML pages to share formatting by specifying the relevant CSS in a separate css file, and reduce complexity and repetition in the structural content.

4.1.3 JAVASCRIPT

JavaScript is the Programming Language for the Web. It can update and change both HTML and CSS. JavaScript can calculate, manipulate, and validate data.

JavaScript is a dynamic computer programming language. It is lightweight and most used as a part of web pages, whose implementations allow client-side script to interact with the user and make dynamic pages. It is an interpreted programming language with object-oriented capabilities.

JavaScript was first known as Live Script, but Netscape changed its name to JavaScript, possibly because of the excitement being generated by Java. JavaScript made its first appearance in Netscape 2.0 in 1995 with the name Live Script. The general-purpose core of the language has been embedded in Netscape, Internet Explorer, and other web browsers.

4.1.4 BOOTSTRAP

Bootstrap is a free and open-source CSS framework directed at responsive, mobile -first front-end web development. It contains CSS- and (optionally) JavaScript-based design templates for typography, forms, buttons, navigation, and other interface components.

 Bootstrap is the most popular HTML, CSS, and JavaScript framework for developing a responsive and mobile friendly website.

- It is free to download and use.
- It is a front-end framework used for easier and faster web development.
- It includes HTML and CSS based design templates for typography, forms, buttons, tables, navigation, modals, image carousels and many others.
- It can also use Java Script plug-ins.
- It facilitates you to create responsive designs.

4.2 BUSINESS LOGIC IMPLEMENTATION

In the module to implement the middle layer and the scenario logic and the method calls between the user interface and database. The major functionality of the project has been taken care.

4.2.1 C#

C# is a programming language developed by Microsoft that runs on the .NET Framework.

.NET is a free, cross-platform, open-source developer platform for building many different types of applications. With .NET, you can use multiple languages, editors, and libraries to build for web, mobile, desktop, games, and IoT. NET is a software framework that is designed and developed by Microsoft. The first version of the .Net framework was 1.0 Which came in the year 2002. In easy words, it is a virtual machine for compiling and executing programs written in different languages like C#, VB.Net, etc.

- The language is intended to be a simple, modern, general-purpose, objectoriented programming language.
- The language, and implementations thereof, should provide support for software engineering principles such as strong type checking, array bounds checking, detection of attempts to use uninitialized variables, and automatic garbage collection. Software robustness, durability, and programmer productivity are important.
- The language is intended for use in developing software components suitable f or deployment in distributed environments.

- Portability is very important for source code andprogrammers, especially those already familiar with C and C++.
- Support for internationalization is very important.
- C# is intended to be suitable for writing applications for both hosted and embedded systems, ranging from the very large that use sophisticated operating systems, down to the very small having dedicated functions.
- Although C# applications are intended to be economical with regard to memory
 and processing power requirements, the language was not intended to compete
 directly on performance and size with C or assembly language.

4.3 DATABASE IMPLEMENTATION

The data store has been designed and developed by creating the entity relation diagram and schema design. The table structure and its underlying backend layer has been implemented using Structured Query Language using MSSQL Server.

4.3.1 MSSQL Server

Microsoft SQL Server is a relational database management system developed by Microsoft. As a database server, it is a software product with the primary function of storing and retrieving data as requested by other software applications—which may run either on the same computer or on another computer across a network (including the Internet). Microsoft markets at least a dozen different editions of Microsoft SQL Server, aimed at different audiences and for workloads ranging from small single-machine applications to large Internet-facing applications with many concurrent users.

4.3.2 SQL

SQL is a short-form of the structured query language, and it is pronounced as S-Q-L or sometimes as See-Quell. This database language is mainly designed for maintaining the data in relational database management systems. It is a special tool used by data professionals for handling structured data (data which is stored in the form of tab les). It is also designed for stream processing in RDSMS.

You can easily create and manipulate the database, access, and modify the table rows and columns, etc. This query language became the standard of ANSI in the year of 1986 and ISO in the year of 1987. If you want to get a job in the field of data science, then it is

The most important query language to learn. Big enterprises like Facebook, Instagram, and LinkedIn, use SQL for storing the data in the back end.

- The basic use of SQL for data professionals and SQL users is to insert, update, and delete the data from the relational database.
- SQL allows the data professionals and users to retrieve the data from the relational database management systems.
- It also helps them to describe the structured data.
- It allows SQL users to create, drop, and manipulate the database and its tables.
- It also helps in creating the view, stored procedure, and functions in the relational database.
- It allows you to define the data and modify that stored data in the relational database.
- It also allows SQL users to set the permissions or constraints on table columns, views, and stored procedures.

SQL architecture that is used to depict the query execution by the SQL engine.

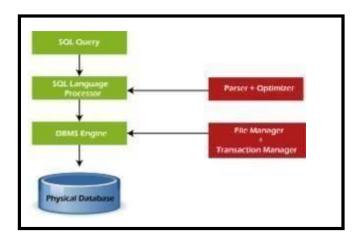


Figure 4.3.2 SQL Process Architecture Diagram

4.4 CODE SEGMENT

4.4.1 Web Configuration: The below code defines the

database connectionstring configuration.

4.4.2 Student: This snippet shows the student sublist.

```
using System;
using System.Collections.Generic;
using System.ComponentModel.DataAnnotations.Schema;
using System.Ling;
using System.Web;
namespace Attendance. Models
  public class Student
     public int id { get; set; }
     public string Name { get; set; }
     public string FatherName { get; set;}
     public string MotherName { get; set; }
     public string Address { get; set; }
     [ForeignKey("std")]
     public int? Standard { get; set; }
     public Standard std { get; set;
     public Standard std { get; set; }
     [ForeignKey("sec")]
     public int? Section { get; set; }
     public Section sec { get; set; }}
```

1. About_cshtml: The defined methods fetch the data from the database for about us data

```
@{
    ViewBag.Title = "About";
}
<h2>@ViewBag.Title.</h2>
<h3>@ViewBag.Message</h3>
Use this area to provide additional information.
```

2 Contact_cshtml: The calls Editor for Template to display the contact from the database.

```
@{
  ViewBag.Title = "Contact";
<h2>@ViewBag.Title.</h2>
<h3>@ViewBag.Message</h3>
<address>
  One Microsoft Way<br/>>
  Redmond, WA 98052-6399<br/>>br/>
  <abbr title="Phone">P:</abbr>
  425.555.0100
</address>
<address>
  <strong>Support:</strong> <a
href="mailto:Support@example.com">Support@example.com</a><br />
  <strong>Marketing:</strong> <a
href="mailto:Marketing@example.com">Marketing@example.com</a>
</address>
```

3. Index_cshtml: The calls Editor or Template to display the index from the database.

```
@{
    ViewBag.Title = "Home Page";
}
<style>
    img {
    margin-left:150px;
}
</style>
<h1><center>ATTENDANCE MANAGEMENT SYSTEM</center></h1>
<img src="~/img/att.jpg" width="800" height="500">
```

4. Create_cshtml: The calls Editor for Template to display the create from the database.

```
@model Attendance.Models.Section
 @{
    ViewBag.Title = "Create";
 <h2>Create</h2>
 @using (Html.BeginForm())
    @Html.AntiForgeryToken()
    <div class="form-horizontal">
      <h4>Section</h4>
      <hr/>
      @Html.ValidationSummary(true, "", new {
@class = "text-danger" })
      <div class="form-group">
         @Html.LabelFor(model =>
model.SectionName, htmlAttributes: new {
@class = "control-label col-md-2" })
         <div class="col-md-10">
           @Html.EditorFor(model =>
model.SectionName, new { htmlAttributes = new {
@class = "form-control" } })
           @Html.ValidationMessageFor(model
=> model.SectionName, "", new { @class = "text-
danger" })
         </div>
    </div>
 }
```

5. Details: The calls Editor for Template to display the details from the database.

```
@model Attendance.Models.Section
    ViewBag.Title = "Details";
  <h2>Details</h2>
  <div>
    <h4>Section</h4>
    <hr />
    <dl class="dl-horizontal">
      <dt>
         @Html.DisplayNameFor(model =>
model.SectionName)
      </dt>
      <dd>
         @Html.DisplayFor(model =>
model.SectionName)
      </dd>
    </dl>
  </div>
  >
    @Html.ActionLink("Edit", "Edit", new { id =
Model.Id }) |
    @Html.ActionLink("Back to List", "Index")
```

6. Edit_cshtml: The calls Editor for Template to display the details from the database.

.

```
@model Attendance.Models.Section
  @{
    ViewBag.Title = "Edit";
 <h2>Edit</h2>
  @using (Html.BeginForm())
    @Html.AntiForgeryToken()
    <div class="form-horizontal">
       <h4>Section</h4>
       <hr />
       @Html.ValidationSummary(true, "", new
{ @class = "text-danger" })
       @Html.HiddenFor(model => model.Id)
       <div class="form-group">
         @Html.LabelFor(model =>
model.SectionName, htmlAttributes: new {
@class = "control-label col-md-2" })
         <div class="col-md-10">
            @Html.EditorFor(model =>
model.SectionName, new { htmlAttributes =
new { @class = "form-control" } })
@Html.ValidationMessageFor(model =>
model.SectionName, "", new { @class = "text-
danger" })
         </div>
       </div>
       <div class="form-group">
         <div class="col-md-offset-2 col-md-
10">
           <input type="submit" value="Save"
class="btn btn-default" />
         </div>
       </div>
    </div>
 }
  <div>
    @Html.ActionLink("Back to List", "Index")
  </div>
  @section Scripts {
```

7. Index_cshtml: The calls Editor for Template to display the index from the database.

```
@model
IEnumerable<Attendance.Models.Student>
   ViewBag.Title = "Index";
 <h2>Index</h2>
 >
   @Html.ActionLink("Create New", "Create")
 @Html.DisplayNameFor(model =>
model.Name)
     @Html.DisplayNameFor(model =>
model.FatherName)
     >
       @Html.DisplayNameFor(model =>
model.MotherName)
     @Html.DisplayNameFor(model =>
model.Address)
     >
       @Html.DisplayNameFor(model =>
model.sec.SectionName)
     >
       @Html.DisplayNameFor(model =>
model.std.StandardName)
     @foreach (var item in Model) {
   @Html.DisplayFor(modelItem =>
item.Name)
   @Html.DisplayFor(modelItem =>
item.FatherName)
   @Html.DisplayFor(modelItem =>
item.MotherName)
   @Html.DisplayFor(modelItem =>
item.Address)
```

5. TESTING

5.1.1 REGISTER PAGE: The error message when the email is not in correct format at client end.

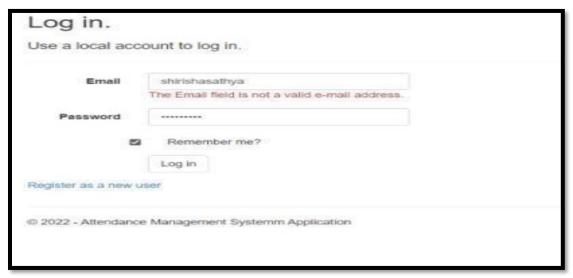
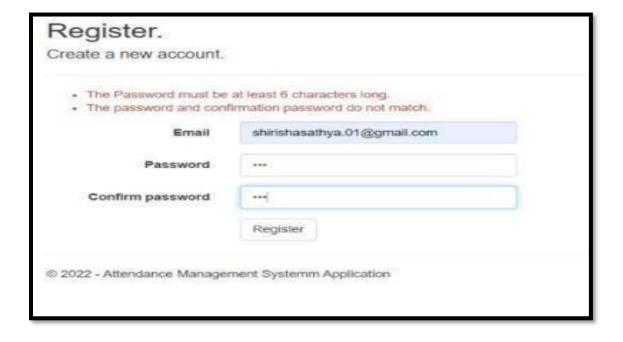


Figure 5.1.1 Log in



${\bf 5.2.1\ LOGIN\ PAGE:}$ The error message when the password is incorrect at client end.

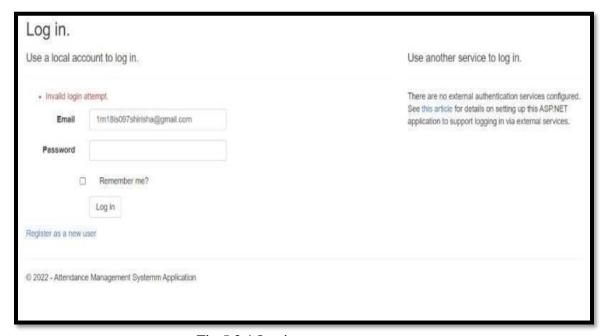


Fig 5.2.1 Login page

6. RESULTS

6.1 HOME PAGE: The home page where both client and the admin can use them login credential or if it is a new user, they can register them Selves first.



Figure 6.1 Home Page

6.2 STANDARD: The students are allotted according to their standard from 1-10

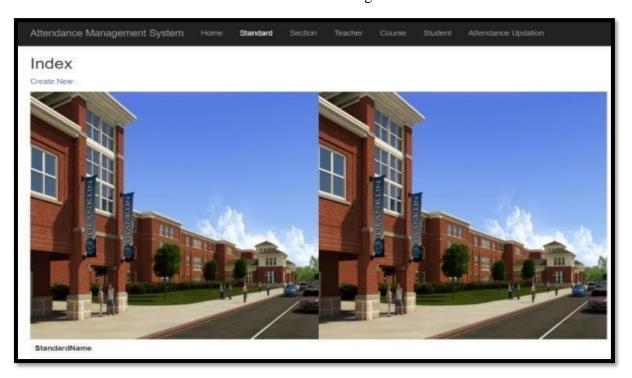


Figure 6.2 Standard page

6.3 SECTION: In this page the students find out which section they are In or belong to for example class 1A.



Figure 6.3 Section Page

6.4 TEACHER DETAILS: In this page the teacher's database are to be found.



Fig: 6.4 Teacher Details

6.5 COURSE: In this page the course taken up by the student is found.

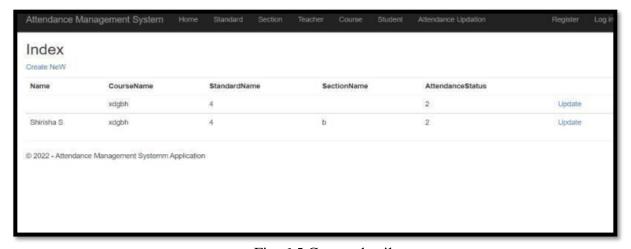


Fig: 6.5 Course details

6.6 STUDENT DETAILS: The student database name, address etc.are recorded here and maintained throughout.



Fig: 6.6 Student Details

6.7 ATTENDANCE STATUS: The attendance status of every student can be visible hear along with the update option.



Fig: 6.7 Attendance Details

5. CONCLUSIONAND FUTURE ENHANCEMENT

A Computer can work more efficiently then compared to a human being. The work becomes easy for the employees and thus, some amount of human resources is saved. Data accuracy is maintained. Accurate information can be achieved within a short span of time Data can be accessed easily and randomly.

This also saves a lot of time. Data is protected with the help of login system. Because of this login system, unauthorized persons cannot access the data. Complexity of the work can be reduced by using the system which was not possible in manual or semi-automated system. So it saves the time utmost.

Scope for future development:-

The project has a very vast scope in future. The project can be implemented on intranet in future. Project can be updated in near future as and when requirement for the same arises, as it is very flexible in terms of expansion.

With the propose software of database Space Manager ready and fully functional the client is now able to manage and hence run the entire work in a much better, accurate and error free manner. The following are the future scope for the project.

- Discontinue of particular student eliminate potential attendance.
- Bar code Reader based attendance system
- Individual Attendance system with photo using Student login

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