**Back End Design**

**MySQL**

MySQL is the world's most popular open source database software, with over 100 million copies of its software downloaded or distributed throughout its history. With its superior speed, reliability, and ease of use, MySQL has become the preferred choice for Web, Web 2.0, SaaS, ISV, Telecom companies and forward-thinking corporate IT Managers because it eliminates the major problems associated with downtime, maintenance and administration for modern, online applications.

Many of the world's largest and fastest-growing organizations use MySQL to save time and money powering their high-volume Web sites, critical business systems, and packaged software including industry leaders such as Yahoo!, Alcatel-Lucent, Google, Nokia, YouTube, Wikipedia, and Booking.com.

The flagship MySQL offering is MySQL Enterprise, a comprehensive set of production- tested software, proactive monitoring tools, and premium support services available in an affordable annual subscription.

PHP

PHP is considered today as one of the most famous scripting languages. It is widely used today as a general-purpose scripting language, particularly useful for web developments and like other scripting language, it can also be embedded directly into the HTML code. Within a short span of time, PHP has gained remarkable popularity and its community is increasing rapidly.

PHP, as mentioned earlier, stands for Hypertext Pre-processor. It is an open source software so you can easily download it from its site: www.php.net. PHP is a mixture of various languages like Java, C and Perl. It was designed with intention of producing dynamic and interactive webpages. It is capable of producing standalone graphical web applications. Another important fact about PHP is that it can be used as a procedural language in order to create complex objects.

**We use php function for connecting to Database:**

<?php

$servername = "localhost";

$username = "username";

$password = "password";

// Create connection

$conn = mysqli\_connect ($servername, $username, $password);

// Check connection

if (!$conn) {

die("Connection failed: " . mysqli\_connect\_error());

}

echo "Connected successfully";

?>

**Create a MySQL Database Using MySQLi:**

<?php

$servername = "localhost";

$username = "username";

$password = "password";

// Create connection

$conn = mysqli\_connect($servername, $username, $password);

// Check connection

if (!$conn) {

die("Connection failed: " . mysqli\_connect\_error());

}

// Create database

$sql = "CREATE DATABASE myDB";

if (mysqli\_query($conn, $sql)) {

echo "Database created successfully";

} else {

echo "Error creating database: " . mysqli\_error($conn);

}

mysqli\_close($conn);

?>

**Insert Data into MySQL Using MySQLi:**

<?php

$servername = "localhost";

$username = "username";

$password = "password";

$dbname = "myDB";

// Create connection

$conn = mysqli\_connect($servername, $username, $password, $dbname);

// Check connection

if (!$conn) {

die("Connection failed: " . mysqli\_connect\_error());

}

$sql = "INSERT INTO MyGuests (firstname, lastname, email)

VALUES ('John', 'Doe', 'john@example.com')";

if (mysqli\_query($conn, $sql)) {

echo "New record created successfully";

} else {

echo "Error: " . $sql . "<br>" . mysqli\_error($conn);

}

mysqli\_close($conn);

?>

**Select Data from a MySQL Database:**

<?php

$servername = "localhost";

$username = "username";

$password = "password";

$dbname = "myDB";

// Create connection

$conn = mysqli\_connect($servername, $username, $password, $dbname);

// Check connection

if (!$conn) {

die("Connection failed: " . mysqli\_connect\_error());

}

$sql = "SELECT id, firstname, lastname FROM MyGuests";

$result = mysqli\_query($conn, $sql);

if (mysqli\_num\_rows($result) > 0) {

// output data of each row

while($row = mysqli\_fetch\_assoc($result)) {

echo "id: " . $row["id"]. " - Name: " . $row["firstname"]. " " . $row["lastname"]. "<br>";

}

} else {

echo "0 results";

}

mysqli\_close($conn);

?>

**HTML**

Hypertext Markup Language (HTML) is the standard mark-up 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 (www). Web browsers receive HTML documents from a web server or from local storage and render the documents into multimedia web pages. HTML describes the structure of a web page semantically and originally included cues for the appearance of the document.

**CSS**

Cascading Style Sheets (CSS) is a style sheet language used for describing the presentation of a document written in a mark-up language like HTML. CSS is a cornerstone technology of the World Wide Web, alongside HTML and JavaScript. CSS is designed to enable the separation of presentation and content, including layout, colours, and fonts. This separation can improve content accessibility, provide more flexibility and control in the specification of presentation characteristics, enable multiple web pages to share formatting by specifying the relevant CSS in a separate .CSS file, and reduce complexity and repetition in the structural content.

**JavaScript**

JavaScript often abbreviated as JS, is a high-level, interpreted programming language. It is a language which is also characterized as dynamic, weakly typed, prototype-based and multi- paradigm. Alongside HTML and CSS, JavaScript is one of the three core technologies of the World Wide Web. JavaScript enables interactive web pages and thus is an essential part of web applications. In the implementation of our project, we have made use of jQuery, a JavaScript library designed to simplify HTML DOM tree traversal and manipulation, as well as event handling, and animation.

**XAMPP**

XAMPP is a free and open-source cross-platform web server solution stack package developed by Apache Friends, consisting mainly of the Apache HTTP Server, MariaDB database, and interpreters for scripts written in the PHP and Perl programming languages.

Since most actual web server deployments use the same components as XAMPP, it makes transitioning from a local test server to a live server possible. XAMPP's ease of deployment means a WAMP or LAMP stack can be installed quickly and simply on an operating system by a developer.

**AJAX**

AJAX (Asynchronous JavaScript and XML) is not a programming language.

It uses a combination of:

* A browser built-in XMLHttpRequest object (to request data from a web server)
* JavaScript and HTML DOM to display or use the data AJAX applications might use XML to transport data, but it is equally common to transport data as plain text or JSON text.

AJAX allows web pages to be updated asynchronously by exchanging data with a web server behind the scenes. This means that it is possible to update parts of a web page, without reloading the whole page.

**Navigation of Web pages:**

1. The web application loads the home page. With options of: Student, Teacher, and Admin
2. On selecting Student, the user must first login using login page. On successful login, the user is greeted with student portal.
3. Student portal allows user to check for the status of the previous complaints, and suggestions.
4. Student can click to submit complaint and suggestion, after verification page using email verification.
5. Student can click on logout option and is then taken to login page, which has option to return to home page
6. On clicking teacher option in home page, teacher has to login. They are then taken to teacher home page. Teacher can choose to view complaints and suggestions.
7. On clicking on a complaint/suggestion is taken to action page. Where, teacher can change the status of the complaint with option to reply.
8. After replying, the teacher is taken back to teacher home portal. On logging out you are taken to login page, with option to be redirected to home page
9. On clicking Admin option in home page, admin has to login. They are then taken to Admin home page. Admin can choose to view complaints and suggestions which are blocked due to use of foul language

Step 10: After allowing or disallowing the admin is returned back to Admin home portal. On logging out you are taken to login page, with option to be redirected to home page

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