CMPT 353 Project Name: Shrawan Parmar & Karthaveerya Jammuladinne
NSID: skp196, kaj886
STD#: 11252425, 11242508

Report

Part A)

Part A is made with a simple design consisting of 4 main pages: Home page, dog register page, report, and employee register page. The technologies that were used were the one only taught in class. These technologies are Node js, html, MySQL, and CSS. The home page leads you to two options: dog register page, and employee register page. The dog register page and employee register page have similar functionalities.

Talking about the functionalities present in the application are, Registration, searching a particular record, Updating Registered user, deleting user, and Adding Report.

Registration and searching are all done by user input where the user has to type in the information, and this information will the shown in a table in an orderly fashion. After the user inputs all the information needed, the info is stored in MySQL database by front-end and back-end communication. This communication is done by XMLhttpRequest. The XMLhttpRequest is a medium through which the info is grabbed from database and is also sent to the front-end. Query string is also used to pass the data from one html to another and send the data from front-end to back-end.

We went with a simple design choice for the whole website to make it simple for the user to access all the information needed to finish a task fast. Also having multiple pages helps us declutter the pages so the website is more user-friendly. The user can also sort the information as needed by name and the time.

Now let's move on to the testing phase, we tested the website by adding information and letting the server process the information and add it to the database and display it on the website. We prevented errors from happening by adding try-catch statements which stops the server from crashing of there is a problem. Instead tells the user what the problem is.

Part B)

We decided to go with PHP and Apache as our new technologies to explore. One of the reasons why we chose to go with PHP is that the front-end and back-end integration is all done in one file which makes it so much easier to stay organized while developing. Another reason is that we wanted to get experience using PHP early on because it is widely used throughout the web development industry. So much so that more than 70% of the websites are made with PHP, which also makes it easily accessible to pick up and learn as there are tons of information related to PHP online. PHP is more user friendly, which gives the developer more flexibility in combining HTML (front-end) and backend communication. Ex: HTML code snippet can be looped with php code. And php variables can be passed to html script as values. Some of the security operations are built-in to PHP which makes it a highly secure platform to use. Also, PHP is known for working very well with databases which makes it an even more of a compelling choice for us. The sites made with PHP are fast and reliable.

Part C)

PHP is a scripting language that can be easily embedded into HTML. It is a highly used language in the industry. Mostly all the processing is done on the server side, so the client computer just has to access the information.

PHP is also very secure which allows the developer to restrict the user from accessing certain pages if they don't have permission. For example, in our case we used a login system to restrict the user from accessing the database without having an account. Also, PHP has an inbuilt method for login secession which prevents from fake logins and makes it highly secure when browsing. PHP also works great with encryption and decryption, so sensitive information won't fall into the wrong hands. We used a simple version of the encryption in our Part D for the password, so when we create an account, the password gets hashed and then gets stored in the database. During the login phase, the password securely gets un-hashed on the server side and allows the user to login without any password leak. PHP also prevents SQL Injection. SQL Injection is major problem in the industry. Therefore, PHP makes it easy to prevent this from happening by binding all the variables so that information can't be accessed easily; prevents hacking.

Cookies are also important in the PHP world; they are usually used to categorize users. Cookies are files that are stored on your computer from the server, so if you visit a page and come back to it after a while your computer doesn't have to contact the server each time it can just use the cookies that are stored on your machine. Which makes the whole experience faster for the user.

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Part D)

Part D is made with PHP which is a scripting language which works with front-end and back-end both. The web app consists of 6 pages: Home page, login page, dog register page, view all the records page, update info page and report. The technologies that were used to make this web app are widely used in the industry. These technologies are PHP, HTML and CSS, MySQL and Apache server. The home page leads you to a log-in page where u can wither create an account or log-in using an existing account. If u don't have an account, you cannot access any information.

The functionalities present in the application are, Log-in, Registration, view all the records, searching a particular record, Updating Registered Dog, Deleting Dog, and Adding/Deleting Report.

Firstly, when you create an account the password that you type in hashed and stored on the database so that outsiders can't hack and access the information.

When registering a dog, the user has to enter information about its name, age, breed and weight. Which is then processed by PHP and sent to the database. Later it is grabbed from the database and is shown in the view all records page organized nicely in a table. Now in the view all records page we also have a search implementation which is searched by name of the dog.

Now let's move on to updating/editing the existing data. The user can update the existing data in the view all records page, which displays all the information in a table. Each table has a, Update link which takes you to the update page where you can update any of the information needed.

The delete functionally is very simple all you have to do is go to the view all records page which has a delete link in the table for each record. All the user has to do is click on delete link which corresponds to the records which he/she wants to remove.

We used MySQL as our database which can be prone to SQL Injection. So, our implementation was made to prevent SQL Injection from happening.

PHP is more user friendly, which gives the makes combining HTML (front-end) and backend communication easier. For example, HTML code snippet can be looped with PHP code. And PHP variables can be passed to HTML script as values. The XMLhttpRequest is not used since PHP automatically handles back-end and front-end communication; PHP is integrated with back-end and front-end. Query string is also used to pass the data from one page to another.

We went with a simple design choice for the whole website to make it simple for the user to access all the information needed to finish a task fast. Also having multiple pages helps us declutter the pages so the website is more user-friendly.

Now let's move on to the testing phase. We tested the website by adding information and letting the PHP process the information and add it to the database and display it on the website. Since we are using PHP which is a highly secured platform, we prevented errors from happening by adding try-catch statements which stops the server from crashing if there is a problem. Instead tells the user what the problem is. We used XAMPP to run/test the web app and we created our database and checked if our database is updating/deleting the user info by using phpMyAdmin, which is an administration tool for MySQL.