

Back-End Web-Application Development and the Role of an Admin

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Abstract: Development of web applications or other applications such as windows applications, android/iOS applications are generally carried out in two stages –Back-end development [1] and Front-end development. In this paper, we illustrate the back-end design of a web-based application using MySQL [2] as the back-end tool. In a web application, different categories of login exist like user login, client login, and the administrator login or the admin login. The administrator of a website enjoys added privileges as compared to the user or the client. In this paper, we illustrate the added privileges that the admin savours and his role in managing and amending the website when needed or on a periodic basis. An admin is responsible for adding, deleting and editing employees and employee information; protecting the website against intrusions by proper security settings and encryption; manually adding, deleting or editing items for sale and manually checking the sales report in case of report corrigenda.

Keywords: Back-end development and Front-end development, user login, client login and the administrator login, ER diagram, Referential Integrity, Relational Database Management System, MySQL, database, PHP, HTML and JavaScript.

I. INTRODUCTION

Back-end web development is the information source or carries the database that is required to run the web applications. The back-end of any website consists of three essential divisions-server, an application, and a database. The database consists of numerous tables and their fields. SQL stands for Structured Query Language and is used to communicate with a database. SQL performs a specific task to query data contained in a relational database. In this paper, we use MySQL as the RDBMS. An RDBMS (Relational Database Management System)

- Enables to implement a database with tables, columns, and indexes
- Interprets an SQL query and combines information from various tables
- Updates the indexes automatically
- Guarantees the Referential Integrity between rows of various tables

II. BACK-END DESIGN

The back-end comprises of three parts and is as shown in figure 1

1. Server- a server is a device or a computer program used to process requests and manage network resources.
2. Database- it's a collection of tables and these tables consist of various fields. It is also called a matrix with data.
3. Application- the back-end developer has the freedom to choose any programming language depending on the type of application to be built. The application must be robust and must cater to the needs of the designer and the user/admin.

In this paper, we are developing a web-based portal for online food and breweries. Following steps are followed in the back-end design of the project

- i. Running the Apache and the MySQL server using XAMPP control panel.[3]
- ii. Creating a database by name 'food'. Figure 2 shows the XAMPP control panel running Apache and MySQL.
- iii. Creating tables within the database 'food'. Figure 3 shows the list of tables belonging to the database 'food'.
- iv. Filling the tables with entries and these are called fields. Figure 4 shows the table 'tblpurchases' with its respective fields.
- v. Use of front-end design to present the information or data contained in the tables of the database to the user using front-end tools like PHP, HTML, CSS and JavaScript. [4]

III. ADMIN LOGIN AND HIS ROLES

In this web application, two types of login are allowed – the admin login and the client/customer login. An admin is a person who enjoys added privileges as compared to the client [5]. He is responsible for the development and supervision of the website updating and acts as an overall site coordinator. The roles and rights/powers of an admin in this website are:

- Add new employee
- Edit/delete employee
- Change employee's password
- Search employee
- Add new product
- Edit/delete product
- Search product
- Search bill

Figure 5 shows the admin login screen/ "Employee information". Figure 6 shows admin's effort to search for an employee. Figure 7 shows the "manage product screen" and the admin's effort to search for a product.

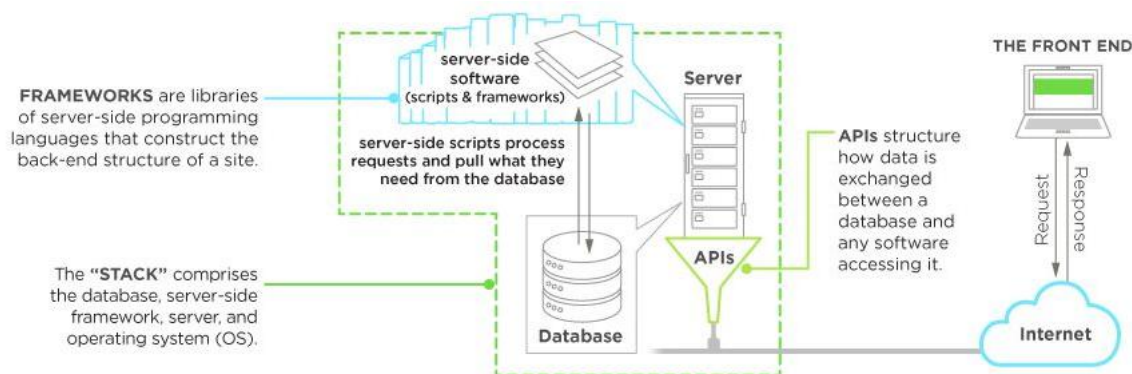


Figure 1 showing the back-end development of a web-application.

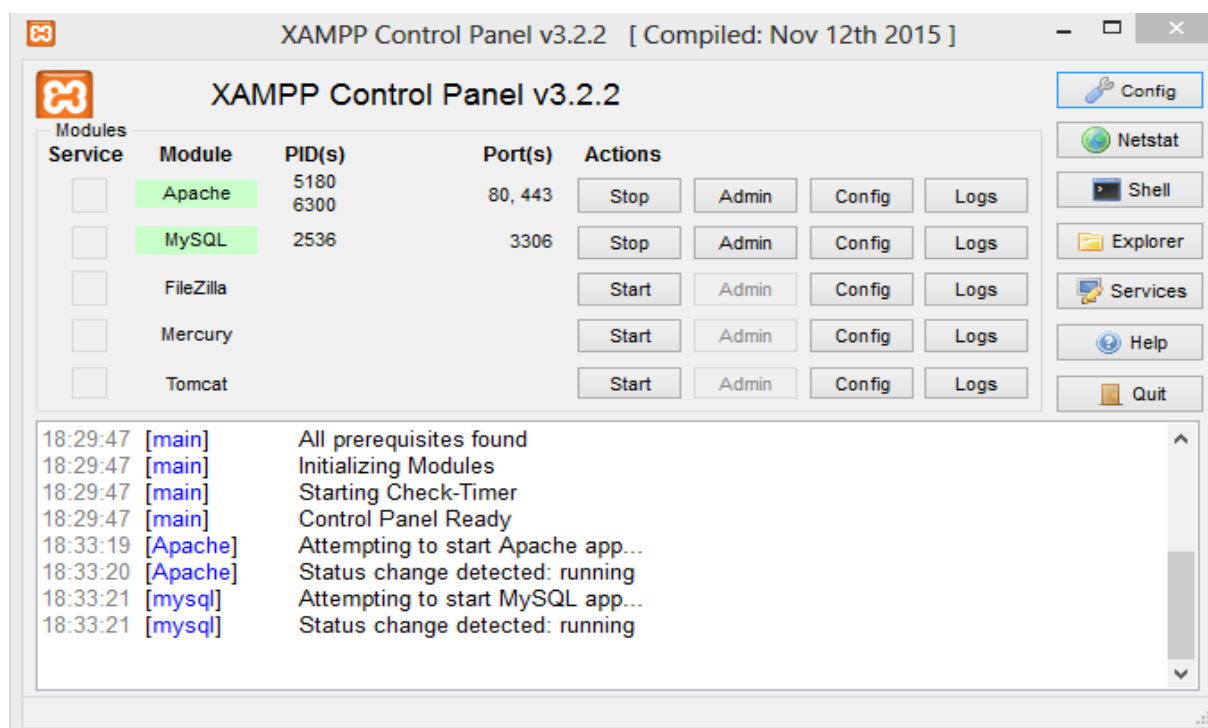


Figure 2 shows the XAMPP control panel running Apache and MySQL.

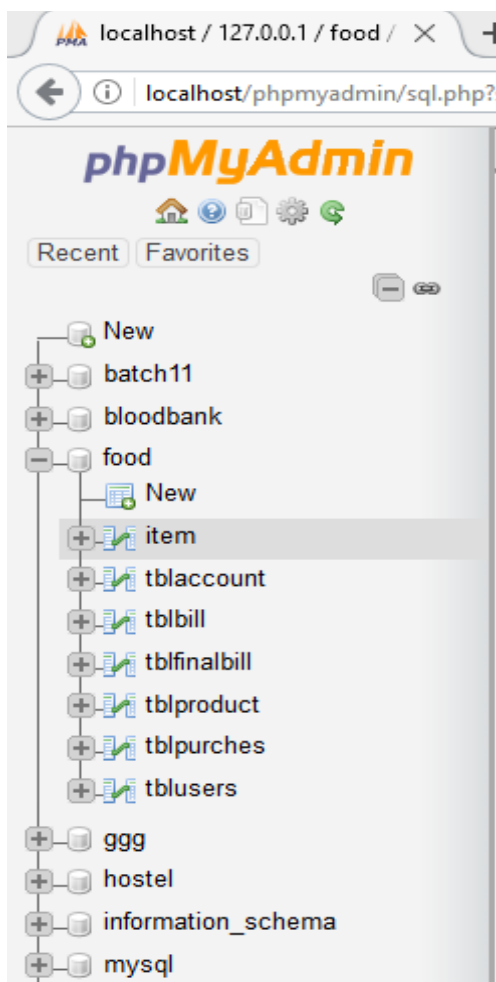


Figure 3 shows the list of tables belonging to the database ‘food’.

`SELECT * FROM `tblpurchases``

Show all | Number of rows: 25 | Filter rows: Search this table

prod_id	prod_name	prod_quan	prod_price	prod_total
15	tea	1	30	200
15	tea	1	30	200
15	tea	1	30	200
373	elaneer payasam	1	110	110
373	elaneer payasam	5	110	550
18	tea	1	35	35
372	elaneer payasam	1	70	70
293	navaratna kurma	1	100	100
136	plain dosa	1	60	60
370	gulab jamoon	1	40	160
58	cofee	1	8	8
387	chicken biriyani	1	330	362
328	chettinad chicken fry	1	165	3167
64	idly	1	40	40

Figure 4 shows the table ‘tblpurchases’ with its respective fields.



IV. BILLING DETAILS

Figure 8 shows the billing details of the user. This screen mainly consists of tabs to fill in the user information like “Name”, “Address”, “City”, “Country”, “Email” and “Phone number”. The purchase details are presented in the figure. Mr. Vishesh with an email id vishesh123@gmail.com, residing in Chamrajpet, Bangalore, India has purchased Tandoori Chicken (half) [1 No. and prod_id = 263]. He has to make a gross payment of Rs.245 to the vendor.

Manage Users

- [Add New Employee](#)
- [Edit / Delete Employee](#)
- [Change Employee's Password](#)
- [Search Employee](#)

Admin LogOut

- [LogOut](#)

Employee Information

Employee ID:	<input type="text"/>		
Name:	First <input type="text"/>	Middle <input type="text"/>	Last <input type="text"/>
Address:	No. and Street <input type="text"/>	City <input type="text"/>	Contact No. <input type="text"/>
Date of Birth	<input type="text"/>	Age <input type="text"/>	Gender <input type="text" value=""/>
User Type:	<input type="text" value=""/>		

Account Information

Username:	<input type="text" value="Username"/>	
Password:	<input type="text" value="Password"/>	Confirm Password: <input type="text" value="Password"/>

Figure 5 shows the admin login screen/ “Employee information”.

Manage Users

- [Add New Employee](#)
- [Edit / Delete Employee](#)
- [Change Employee's Password](#)
- [Search Employee](#)

Admin LogOut

- [LogOut](#)

Employee Information

Search by:

Id Number	Name	Address	Contact No
100	raja, praveen667/a 2nd main,2nd cross prakashnagar, banglore		8888888889

Figure 6 shows admin’s effort to search for an employee.



Manage Product

- Add New Product
- Edit / Delete Product
- Search Product
- Search Bill

Admin LogOut

- LogOut

Product Information

Product Name:

Product ID	Product Name	Product Price	Product Quantity	Date Added
63	idly	40	All time	2015-03-03 16:04:20
64	idly	40	All time	2015-03-03 16:05:35
65	idly	34	All time	2015-03-03 16:06:32
66	idly	50	All time	2015-03-03 16:07:05
67	idly	35	All time	2015-03-03 16:07:39
68	idly	13	All time	2015-03-03 16:08:22
69	idly	20	All time	2015-03-03 16:09:50
70	idly	20	All time	2015-03-03 16:10:26
71	idly	25	All time	2015-03-03 16:10:59
72	idly	27	All time	2015-03-03 16:11:34
73	idly	20	All time	2015-03-03 16:12:10
74	idly	80	All time	2015-03-03 16:12:39
75	idly	35	All time	2015-03-03 16:13:13
76	idly	24	All time	2015-03-03 16:14:08
77	idly	35	All time	2015-03-03 16:14:39
78	idly	28	All time	2015-03-03 16:16:24
79	idly	20	All time	2015-03-03 16:17:02
80	idly	20	All time	2015-03-03 16:17:39

Figure 7 shows the “manage product” screen and the admin’s effort to search for a product.

Food World

BILLING DETAILS

User Information

Successfully added new user!

Required for customer full details in correct name,address,city etc.

Name:

address:

city:

country:

email:

phone:

Purchase Detail

Name:

Product Id:

Quantity:

Price:

TOTAL:

Figure 8 shows the billing details of the user. This screen mainly consists of tabs to fill in the user information like “Name”, “Address”, “City”, “Country”, “Email” and “Phone number”.



V. CONCLUSIONS

In this paper, the back-end design of a web-based portal was illustrated. The role of a back-end web application developer- such as creating a database, adding tables and fields with a certain number of rows are illustrated. He is responsible for server-side scripting. His primary focus is the development of all server-side logic, definition and maintenance of the central database, and ensuring high performance and responsiveness to requests from the front-end. He may also bear the responsibility of integrating the front-end elements built by others into the application. In this paper, the role and job of an admin were also illustrated with a real-time example.

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BIOGRAPHIES



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