

Interactive Website using a range of web technologies

by Meher Arasada

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Interactive Website using a range of web technologies

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A. Introduction

Every company requires a website to expand their business. Navab's Restaurant is also one of those businesses who are planning to expand via their online presence. Easily be able to reach the customers via their website which will increase their takeaway orders and phone orders. In this restaurant Asian cuisine is prepared and served to the customers. This covers a wide variety of food, drinks and deserts.

We have designed phase 1 of this website which contains basic functionality. This website contains menu and their ingredients. Menu is split into three categories – Food, Drink and Dessert. User can view the menu list by each of these categories. If the user is happy to proceed then order will be placed by calling the restaurant who can then take the order over the phone. Once the order is ready, it will be delivered to the customer.

Each menu category has a separate page. When a user clicks on, for example, Food link, all the food items provided by this restaurant will be displayed. Each menu item has ingredients displayed under and has shown price next to it. This website also has "Contact" form. Customers can use this form to send any specific queries to the restaurant. There is also "Not found?" link using which customers can let the restaurant know of any items which they would like to order but are not available on the site. This will also help the restaurant to include those items if financially viable thus increase their business.

The contents of this website is dynamic. Data is retrieved from a normalised database.

B. Admin user functionality

Website administrator (admin) is responsible for keeping the website fully functional. Admin can perform CRUD operation via admin control panel designed for this website. This means creating, updating, reading, deleting the records in menu, ingredients etc., where ever and whenever required by the admin. Created or updated or deleted content will be reflected immediately on the website. "Read or Retrieve" is also performed as the data can be viewed in the website as well as in admin panel.

Admin user will be able to login by providing correct username and password, it is provided for the security purpose. Only admin will be having the rights to perform CRUD operation if not there is a risk of misusing the data. If incorrect login details are entered, then the user will receive a message on the screen to input correct login credentials. Session will be maintained for the login functionality. For example, after clicking on logout, session will be closed and there is no chance of going back when back button was clicked which is secured.

Once the admin is logged in, a welcome page will be displayed in which four options will be available which are for inserting new items in the menu, ingredients, menu item's ingredients and logout. By clicking on "Insert Menu", it navigates to menu page where insert can be performed, and records can be viewed by clicking on view records. On clicking "View Records", it displays all the records with two buttons which are "Edit" and "Delete".

By clicking on "Delete" button, record will be deleted, and you can find the difference immediately in the menu. Whereas by clicking "Edit" button it navigates to "changedata.php" page and "Menu" fields will be displayed in which two fields, 'Id' and "catid" (category Id) are read-only as they are primary and foreign keys of the table. Once submit button is clicked, it navigates to display page where edited changes gets reflected and can be viewed on the website.

Similarly, by clicking on “Insert Ingredients”, it navigates to “ingredients.php” page where Ingredients can be inserted. “View records” link will display all the records. For this currently only Delete functionality was implemented and there is no edit option available. There is a “Back” button which navigates to “welcome.php” page.

Summary of admin tasks that can be performed with some examples:

- add new menu item (e.g Tandoori Chicken)
- edit/delete existing menu item
- add new category (e.g Starters)
- edit/delete existing category
- add new ingredient (e.g tomatoes).
- delete existing ingredient

One of the important aspects of this website is when customers look at the items that are displayed in the menu can also see the ingredients that are used to prepare or cook the item. This way customers will be informed on the ingredients of the items that they are ordering which will help them to avoid anything that doesn't suit them. This will boost in customer satisfaction.

In this website, “Menu Ingredients” can be added by the admin in “menuIngredient.php” page. In this page two fields will be available, one is “Item Name” which is dropdown and other is “Ingredients” which is displayed in “check box” format. Menu item can be selected first from the drop down and ingredients can be selected (checkboxes) and submitted. Once submitted, it will then insert combined values of Menu ID and Ingredients ID within the linked table ‘menuIngredients’.

C. Accessibility issues

Accessibility issues have been considered during this website design. For example, images with any text embed within will also have a separate text on the website. This will enable visually impaired visitors to be able to use this website who use speech synthesizer software.

D. Technical details

This website is designed using HTML and CSS. For server-side scripting PHP language is used. Using PHP scripting, menu data is retrieved by connecting to MySQL database. Search functionality is also enabled within the website. Customers can easily search for menu items using this.

Data is stored in an appropriate normalised database. An internal domain has been created with a software called “WAPSERVER”. [1]It acts like a server where data of a website can be accessed and stored. It consists of Apache2, PHP and MySQL database which are very much useful to develop the web application. Apache2 acts like server, PHP is server-side scripting and MySQL acts as database which helped in developing and deploying this website. WampServer is installed as per the instructions provided on the hosting website. This website is hosted by uploading the files in to the folder name “www” which is in WampServer. World Wide Web Schools(W3Schools) concepts were used for designing the website. Server-side programming was completely done in PHP, which is light weight and does not take much time to extract the data. It connects to the database easily with several connections and it is open source where any one can learn and start implementing in this program.

Security being the key aspect of any website, “prepared statements” were used within the PHP code. This will stop any SQL injections by hackers.

For client-side scripting Javascript is used. Javascript is used for form validations such as email address validation, making fields mandatory on the form etc and avoiding the null values to be inserted in the database, which can be a problem for admin in reading and modifying the data.

As a part of style sheet, an external style sheet has been imported into the HTML pages and with an extension of “.css”.

Entity relationship model is designed as below.

Figure 1:

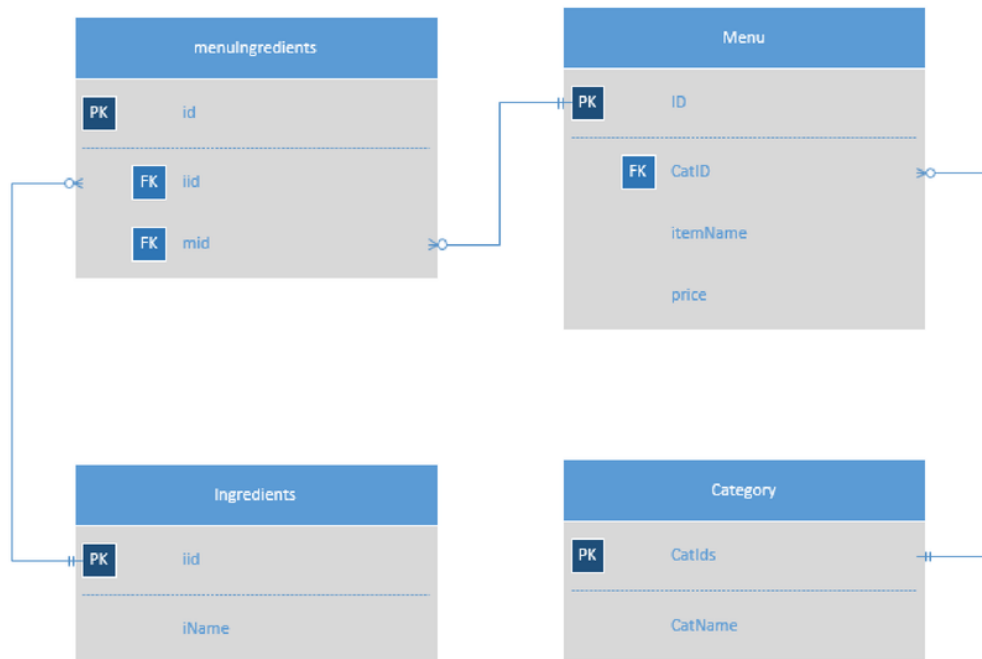


Figure 2: Table that stores data of missing items from the menu reported by the customers

ItemNotFound	
PK	ID

	itemName
	Description
	ContactEmail
	ContactNumber

Figure 3: Table that stores admin login credentials.

users	
PK	id

	uname
	upassword

Figure 4: Table that stores enquiries reported via Contact form on the website.

contactInfo	
PK	id

	fullname
	email
	info

E. Post-implementation challenges

Once the website is ready for hosting in Live environment, business need to think about investing in the right hosting provider. There is a danger in hosting companies going bust without any prior notification. Also need to check if the hosting companies are using up to date software which meets this website's hosting requirements.

- **Scalability** – Business need to think about scalability of the website. As the business expands, for example, when online orders placement functionality is introduced, it should cope-up with the increase in the database size and the performance of the website.

Going forward (phase 2) this website can easily be extended to Customers placing orders online. Entity relationship model can then be enhanced easily without having an impact to the existing model. This will include entities like Users, Admin, Customer, CustomerAddress, CustomerOrder, OrderMenu, Menu, Category, etc. All the users info, both admin and customers, can then be stored in Users table with additional fields like 'IsCustomer' and 'IsAdmin'. This entity will then be linked to both Admin and Customer tables. All the login info can then be stored within Users table only.

Customer address details too can be stored as current and past. Storing past/historic addresses where the orders were placed from will help in generating reports for analysis, book keeping and promoting the business.

Enhanced website will enable the customers to create online account, place orders online, track their orders and update their current deliver address and contact details. This enhanced normalised database structure will help in website performance while as the website gets busy during orders placement. This will also enable the restaurant owner or technical staff to analyse the data easily.

- **Usability** – In regards to the usability, not all the devices get tested as part of testing/UAT, so business should be prepared to receive calls about issues placing orders OR not being able to view the menu items on some devices that were not tested.
- **Accessibility** – In regards to accessibility, we get new softwares released now and then that help users with visibility problems. These softwares will translate text into audible speech. As its practically not possible to test our website each time when a new software releases, businesses need to at least meet the government regulations around this, for example Equality Act 2010.
- **Security**

Once the website is hosted, business need to think about security.

- o If the website is hosted on shared server then the hosting company should ensure that no other users can access this database, files, etc.
- o Need to check with the provider if the site can be hosted as HTTPS.
- o Hosting accounts need to be completely isolated.
- o Server logs need to be available to investigate any issues.
- o Website needs to be backed-up by the provider on a regular basis.

There is one more advantage in hosting. If any application is developed in PHP, hosting cost will be less, and client will not feel burden in maintaining the website. At present, we can find small scale businesses that do not have a website because they need to maintain the site on a server. To avoid the hosting issues, PHP is one of the best ways of programming.

As a part of testing, a base level of testing has been performed with the coding like unit testing and integration testing has been done to integrate code with the design.

F. Conclusion:

The purpose and objective of this website is achieved by providing the web design for user interface with required data integration functionality. All concepts and requirements were covered as part of this program. An interface has been created for admin as part of this program where more technical concepts were implemented and executed. Knowledge has been gained so far to build exceptional web applications.

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GRADEMARK REPORT

FINAL GRADE

66/100

GENERAL COMMENTS

Instructor

WEBSITE

- Range of PHP coding demonstrated - A good range demonstrated. Basic search facilities were present, as well as a login system, dynamic pulldown menus populated, administrator facilities (add/edit/delete) and use of prepared statements. Be careful with your ingredients - they need to be validated so that they are unique (for example, you wouldn't have onion listed twice in the database, nor in a list of ingredients for a dish. You need to approve the admin registration before allowing them on to the website - remember, an administrator can change anything! Also, be careful on the validation side - Javascript is OK, but can be turned off in the browser, so if the site went live you would need server-side validation.

22/30

- Database structure and design – Generally well normalised and appropriate. You may not need the contact table and it could be removed to improve efficiency.

8/10

- Overall Integration of Website - A nice layout overall and quite easy to navigate

8/10

Knowledge and Understanding of Subject – A good understanding was demonstrated overall, please refer to comments above regarding ingredients which need more thought.

REPORT

Research-informed Literature – Some good points made, but the accessibility content in particular is very short. How does the Equality Act impact on websites? Also you need a bit more depth on scalability - for example, you state that business should cope with the increase in database size and performance - but how? What are would a business have to do (eg impact on bandwidth, choice of database software etc) Some reasonable security issues mentioned, mainly on the hardware side, don't forget the software side - for example SQL Injection, spambots.

I can see references in the body of the report, but they are not included at the end. Don't forget to include a list of references.

7/15

Analysis – You need to make it clearer where the points raised in your literature review apply to your website. For example, do you think there are any current usability issues. You state that you have considered accessibility issues, but only mention the alt tags for images - did you do anything else?

7/15

Overall = 66%

PAGE 4

PAGE 5

PAGE 6

PAGE 7
