HTU.

School of Computing and Informatics

Website Design and Development

Assignment 1 Designing and developing a website front-end – Report

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Contents

1. DNS

1.1 All about DNS

 (Domain Name System), and is considered one of the most important parts on which the internet depends. The purpose of DNS is to convert the name to numbers called (IP address) and to make it easier for visitors to save a website's name rather than an IP address in order to access the website, and 97% of people save website's name not the IP address of the website because it's easy to save and remember names rather than numbers. When people type www.Website.com in URL(contains Protocol,Path and Domain name), your browser will ask the operating system for the IP address and if you have already visited this page, your device will get the needed IP address from CACHE. If you haven't visited previously, the DNS will use the DNS types to determine the IP address of the particular website [1]. (DNS, 2022)

Types of DNS :

- Resolving name server:

It is the first step for operating system to find IP address of specific website if the IP address isn't in the Cache. Every resolving name server should know the location of the root server to ask about the IP address of the website, then go to TLD name server and ask about IP address if the root server didn't know the IP address but know the location of the TLD of the website, and go to authoritative name server to ask if TLD name server didn't know the IP address but know the location of authoritative name server until the resolving name server know the IP address of the website and deliver it to the browser to make connection to the website.[1] (DNS, 2022)
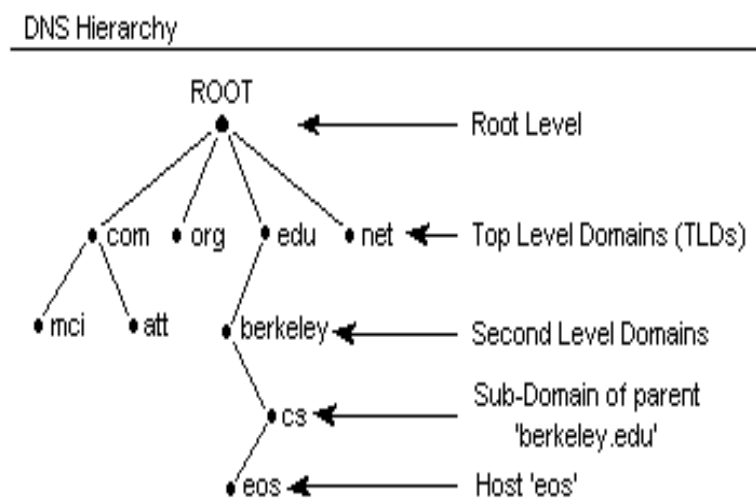
- Root name servers. (.)

It is at the top of the domain name system hierarchy, managing DNS and responding to any queries that are in the records or cached. However, root is aware of the locations of the TLD and authoritative in the hierarchy [1] (DNS, 2022) .

- (TLD) name servers.

Abbreviation of Top Level Domain, and it's position at the top after root name servers of the domain name system hierarchy and in the end of the domain name .TLD gives the IP address for authoritative name , and there are many common top level domain names such as: com, edu, gov, etc… [1] (DNS, 2022) .

- Authoritative name servers.

It appears after root name servers and top level domain name servers in the hierarchy . It responds to domain name system queries, and many businesses payment to have their data on authoritative name servers. For example, if CompanyZ paid to have an authoritative name server in (com)--> (companyZ.com)[1] (DNS, 2022).

1.2 Organization of domain names :

If you have a website, you also must have a domain name of your website to make your website unique. If you confused on how to identify the domain name in website or when is the position of domain name in websites, it comes after {www} in URL -----> WebSite.com.<mark>[2](What are domain names?, 2022).</mark>

As shown in the figure,this is the hierarchy of domain names that divided into many parts (root (dot) ,second level (such as : edu ,com, info),third level, fourth level,…..). Let's take an example to know these parts well:

Name.Account.Website.com.

Account.Website.com.

Website.com.

Root	TLD	Second Level	Third level	Fourth level
Dot after the com	com	Website	Account	Name
Dot	com	Website	Account	
Dot	com	Website		

<mark>[2] (What are domain names?, 2022)</mark>

2. What is communication Protocols and Hardware and operating system and web server software:

2.1 All about protocols

System that contains many rules to exchange the data between two devices in a network.Example of communication protocols:HTTP,HTTPS,FTP,TCP/IP,SMTP and other protocols.

Protocols:

-HTTP: through it, the client can send request and response from the server.

-HTTPS: this protocol is more secure than HTTP because the data send encrypted.

-TCP:in this protocol, the data divide into small pieces known as packets and the packets send from source device to destination device.

-IP:responsible for making sure that the data will send to the destination device.

-FTP: responsible for sending and receiving the data from device to another device.

-SMTP:responsible for sending emails from device to another.

-POP , IMAP: responsible for receiving the email. [3[(The Web Communication Protocols, 2022)

2.2 What is the relation between protocols, hardware, operating system, web server software:

Server Hardware:

Hardware in servers are similar to hardware in computers so the server has CPU,RAM and others.Hardware components is important because it used to run the software and the files and data bases in the server are saved in hardware.[4](What are hardware, software and Operating Systems?, 2022)

Operating System:

Operating system is software that provide you the interface to communicate with hardware,used to manage and allocate the hardware resources,applications and software.

OS will alert the the cache in your device trying to find the ip address of the specific website and alert the resolving name server to find the ip address. [4](What are hardware, software and Operating Systems?, 2022).

Web server software:

Used to arrange the communication between the clients and the server.[4](What are hardware, software and Operating Systems?, 2022)

Web server contains hardware and software and uses many protocols to respond the client request.If the client sends request (through HTTP,HTTPS protocol) to access a specific website, the software will responds the client server and show the content of the website to client browser.

[4](What are hardware, software and Operating Systems?, 2022)

3. Technologies,tools,techniques,frameworks used in web:

3.1 Technologies

used to develop your website and make it perfectly website from any mistakes or errors. It also used these technologies to make and develop applications.

- HTML

It's played an important role of web development because HTML **show the initial form** of web page through browser because the browser shows the HTML code, and without the HTML, the browser can't show the content of the web page.

When we want to write the HTML code, we need to add main tags(< >) to the code such as:

<!DOC Type html> (to show the type of the document),<HTML>,<head> (here we put the meta data of web page for example title of the page and description, etc..) and <body> (here the content that show to the user or show in the browser).There are tags to use in HTML if necessary such as : img (show pictures) , a (link) , p (paragraph) and others…. .

Evaluate:

From my experiences of using html, it's not a complex language to use, and it useful and important in web development because it makes webpages , images , videos (content) in the website, without use it, it can be difficult to build a website and upload content into it. I enjoyed when I used it and hope to know more about it.

[5] (9 Web Technologies Every Web Developer Must Know in 2021 - TMS, 2022)

- CSS

It's a code used along with HTML code to **style the web page content** and make it clearly readable to the user when access the website. For example, if we want to change the color font of specific header, we use (color: green,red,blue,etc..) to change, or change the font size of the page by using (font-size: 10px,15px,11px,…..). CSS can also be used to style the layout of a website page (grid, flex, position).

Evaluate:

CCS really helped me a lot and without CSS, the style of the web pages maybe become not completely enough to show it to the users because CSS gives the opportunity to make the webpages more stylish by using techniques such as Responsive Design and it's not complex to learn it's just want more practice to implement it very well . Maybe I faced many issues wile using it , but overall it was really helpful.

[5] (9 Web Technologies Every Web Developer Must Know in 2021 - TMS, 2022)

- Java Script

It's a programming language that used to communicate with computers and guiding them on what to operate. Java Script is the most popular language in web because it simple to learn and easy to implement with HTML. You may **manage your HTML code and CSS by adding, removing, or editing HTML tags** to make it more precise. And is often **used to add and remove elements.**[6] (development, 2022)

Evaluate:

This was the first time I used JavaScript language, it 's not a difficult to use or learn and it's used in many things like switching your content b by using selector, also you can change in CSS proprieties. Must developers used JavaScript and it become a part of the web development and the internet, without it manage content are become not easy to manage and the website will be not interactivity and usability. For me, it is considered one of the most easiest language to use.

- Protocols

rules to exchange the data between two devices in a network.Example of communication protocols:HTTP,HTTPS,FTP,TCP/IP,SMTP and other protocols. And every protocol has a work to do for example one of the most protocols used in web development are HTTPS (the client can send request and response from the server more securely because it's encrypts the moved data).

Evaluate:

After discussed about the protocols, noticed that the protocols played a main role in web development and we can't ignore it because it's help us to communicate with the servers and computers, also by using protocols we share and receive files or emails and without it the users can't send a request to communicate or connect to your website and share files.

- Browser

It's a technology that use to access and view a lot of websites that shared in the internet, there are many common browsers that people use for example: google chrome, Microsoft edge,Safari ,etc… . [7](Definitions and Hope, 2022)

Evaluate:

It's impossible that person doesn't know the browser and how to use it to show the content and all the people know the big value of the browsers in their lives especially the web developers because they know the value of the browser in web development. Developers used it to show the webpages content they created after write the codes and without the browser, the website will not show and maybe the HTML language will be irrelevant and less usable than before. In this course I used (google chrome) because I always use it and it's easy to use, fast, comfortable than others.

3.2 Tools

3.2.1 Tools

help us in web development to create or develop web pages, there are more than thousand of tools used in webpages, but we will talk about the common tools such as:

● "All text editors":

It used when we want to write a HTML code, CSS code, JavaScript code and others programming languages.There are many of them but the most common use are:

1. Sublime

It's an application that help the developers to write any code of any programming language, it established in 2008 ,and can be downloaded in Windows, MAC, Linux. It has many specifications in sublime such as : it's a free app, highlighting in syntax, clearly font size, has more than one theme, familiar with programme languages keywords and others. [8](Sublime Text - Wikipedia, 2022)

2. Visual studio code

It's an application established in 2015 that help the developers to create and develop the programming languages code (HTML, Java,JavaScript,etc..) by using it's features. This application has more than one features for example: developers can test their code from any mistakes or errors (debugging), highlighting in syntax ,free app ,and others.[9](Visual Studio Code - Wikipedia, 2022)

3. Notepad++

It's a free application that help the developers to write any code of any programming languages (HTML,CSS,JAVA,JAVASCRIPT,...) and it's familiar with any language and it has the best code editor with the specifications and features such as : it's not complex to use and very fast, put themes ,highlighting in syntax.[10](2022)

Evaluate:

From my experiences in writing a HTML codes and CSS, I think text editor like the above editors are the main element in web development because without any text editor and use notepad in the device can be difficult to the developer to create webpages because notepad doesn't have the ability to do like editors have such as : highlight, debugging, clearly font family and size and the main reason is notepad doesn't familiar with the programming languages that use with web development so text editors they should be given their value in web development.

| Visual studio	Notepad++	Sublime
It's fast while moving between texts	It's fast while moving between texts	It's faster than the other editors.
It's the best code editor	It's great in code editor	It's great in code editor
When you opening the app it's take more time to start up	When you opening the app it's take less time to start up	When you opening the app it's take less time to start up
Overall has the most cons	Overall has the less cons	Overall has an average number of cos

● Tools for design Sitemap:

It's the structure of your webpages that are in the website and the relation ship between the webpages, and it required to be done before write the code, for example in my project, I made a sitemap of my website by using many tools such as:

1. Online diagram software (Draw io):

Software used for many things such as: make basic diagrams, flowcharts, wireframes, Mockups, networking diagrams and others. Anyone can use this software because it's easy to use and make a basic diagrams and it's free.

[11] (draw.io – Diagrams for Confluence and Jira, 2022)
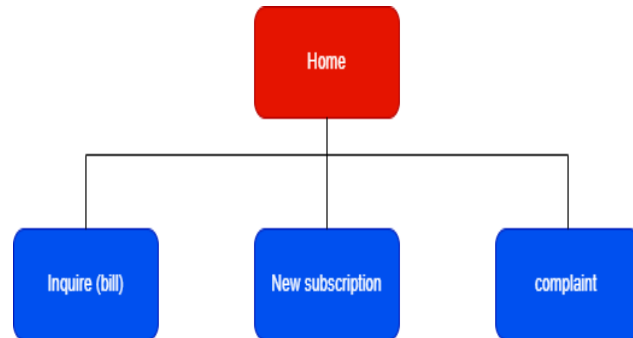
2. GlooMaps:

It's a free, easy, fast software that used to make a basic sitemaps for the website and can downloaded in Windows, MAC, Linux .[12] (gloomaps.com - GlooMaps - Visual Sitemap Tool - Gloo Maps, 2022)

Evaluate:

These tools make the sitemap more easier to make for web developers and by using these tools, users don't take very much time and effort to make a sitemap. Also we are not ignore the importance of sitemap in web development, it's helped the developer and the website, for the developer it help him to understand the structure and overview of the website before writing the code and to know how many pages in the website, and for the website it help to increase the level of the website (SEO) and through it and HTML, the website goal and content will be completely defined.

| Draw io	GlooMaps
Used to make more than one diagram (sitemap, wireframes, flowcharts,…)	Used to make only for sitemaps.
Has the import option.	Doesn't have the import option.
Can make the best sitemaps because there are many tools that help .	Can make the simple sitemap because it have the basic tools to make sitemap.
Easy to use.	Easy to use.

- Tools for design Wireframe:

It's an overview of the content (paragraphs, images, videos, links, etc..)of the web pages in the website by using tools to create it, wireframes must fit all the sizes of the screen for example if we want to do a wireframe to a web page, we need to make two wireframes: one for the laptop screen and one for phone screen and the two screens must includes the content of each page and the position of each element(p,img,videos,etc...). Note:Wireframes must comes before writing the code and Wireframe screen must comes with black and white only not a colorful screen.

To make wireframes,you need tools:

1. Just In mind

It's an application to download use to make a wireframes to your website by using custom website components . Just in mind is free application but all the features will be unlock, if you want to unlock all the features you will need to purchase to get all features. It fit with all versions: windows , MAC , Linux.[13] (Justinmind Free Version VS Justinmind Pro Edition, 2022)
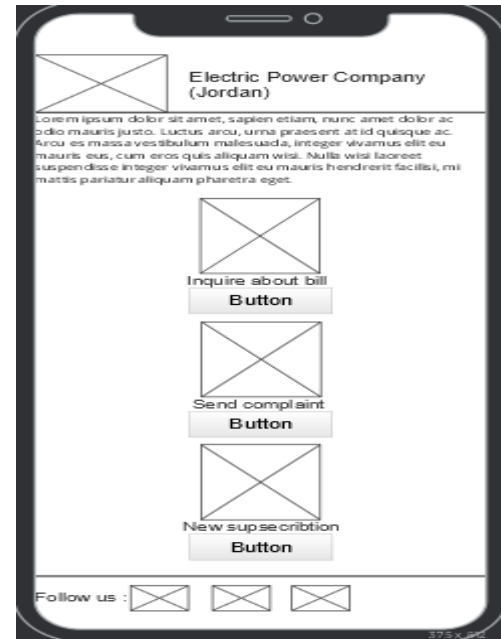
2. Online diagram software (Draw io):

Software used for many things such as: make basic diagrams, flowcharts, wireframes, Mockups, networking diagrams and others. Anyone can use this software because it's easy to use and make a basic diagrams and it's free.

Evaluate:

These tools make the wireframe more easier to make for web developers and by using these tools, developers don't take very much time and effort to make a wireframe. Also we are not ignore the importance of wireframe in web development, it's helped the developer to a clear view of the webpages content before writing the code for the two screens (Laptop and phone).

Just in mind	Draw io
50% free.	100% free.
More options and creativity to make wireframe .	Less options and creativity wireframe.
Has the simulation option. (Test your wireframe or mockups in the browser)	Doesn't have the simulation option.
Easy to use	More easier to use than Just in mind.

- Xampp:

It's a free application that users can download it and it contains of several modules such as : apache, SQL and others,and HTTPS . Through it you can access the database related to your website using PHP my admin. Also it provides the user the opportunity to make more than one data base. All operating systems can downloaded it (windows, Mac , Linux).

[14] (XAMPP - Wikipedia, 2022)

Evaluate:

Xampp provides the users multiple features such as : PHP my admin that help to manage your MySQL databases,you also can test your website before releasing to main server , also recording to what I read, it's easy to use ,fast , learn and download and overall it's free software.

- Git hup

It's an application that used to share files and make repository, collaboration by using git and save the files in cloud not in the user device through it, you can work with other person on the same project, get hup has many features like : (VCS) version control system,which is if you are work with other person on same project in get hup and one of the members change something in the project , by using git hup will save the changes that happened in the project and show to all members and you can get the old versions of your project ,also there is something called"Fork" which is if you shared file in public , users can get the file and edited it without changes of your version of your file and project test.[15](GitHub - Wikipedia, 2022)

Evaluate:

 I used Githup a lot and it's not easy and not difficult to use and you need to practice to be more familiar with it but it's important for developers because from it, you can work with other person to develop your website without makes changes of the original project, it also will save the files in cloud, and githup has many features to facilitate the user's lives in web development and you can easily upload your files .

- Free hosting panel

It's a panel admin that you can access to it if you have the email and password, it's useful to publish your website by upload your files in public HTML in the internet and make your website visible to users to see your content. Also through it you can manage your DNS, FTP , and domain.[16](cPanel access – Freehosting.host Help, 2022)

Evaluate:

Through my knowledge in panels, panels are the only way to publish your website in the browsers and make your content visible to the users , it's not complex to use and learn, easy to edit your files in public HTML, easy to upload and delete your file in the public.

3.2.2   My website tools

- Notepad++

I used Notepad++ because I have a good experience on it and I used it for three years, free, it's easy to use, fast , has the ability to auto save, and it familiar with all programming languages such as : HTML, CSS .

- Online diagram software (Draw io)

I also used Draw io because I have experience on it for many courses, free, easy to use because all the tools are on the left side of the screen you just hold the element and put it in the workspace, has all the features that need to make sitemaps and after you finished you can export your sitemap as PNG, PDF, HTML and others, and easy to import files.

- Just in mind

provides all the components and tools that help the developer needs to create the best wireframe design, the easiest to use, fast, you can simulate the wireframe which is show the your wireframe in broswer to test your wireframe.

- Xampp

I will chhose xampp because it provides all the developers need about manage data bases, can make more than one data base, deals with more than one module, free using, not a complex software.

- Git hup

I have a good experience in git hup, free using, easy to share files, increase the probability of improvement the project, project test and always I can get the main version of my project.

- C panel (free hosting)

I have chosen the free hosting panel because I can publish my website easily and easy to use it and upload the files to public, also I can edit the files in html files, manage DNS setting, and domain name.

- Google console

I used it to verify my website in google search to show my website content to users and manage my website and see the performance of my website, also to add sitemap files in the google search.

3.3 Techniques

3.3.1 Techniques

● Responsive design

It's a technique that used to change the layout or change the position of element of the webpages by using position types(relevant, fixed, absolute,sticky and others), grid , and flex.

For example if you have these element and you don't like this arrangement so you will need to use a responsive design to change the layout of this web page. By using display(grid or flex) the result is:
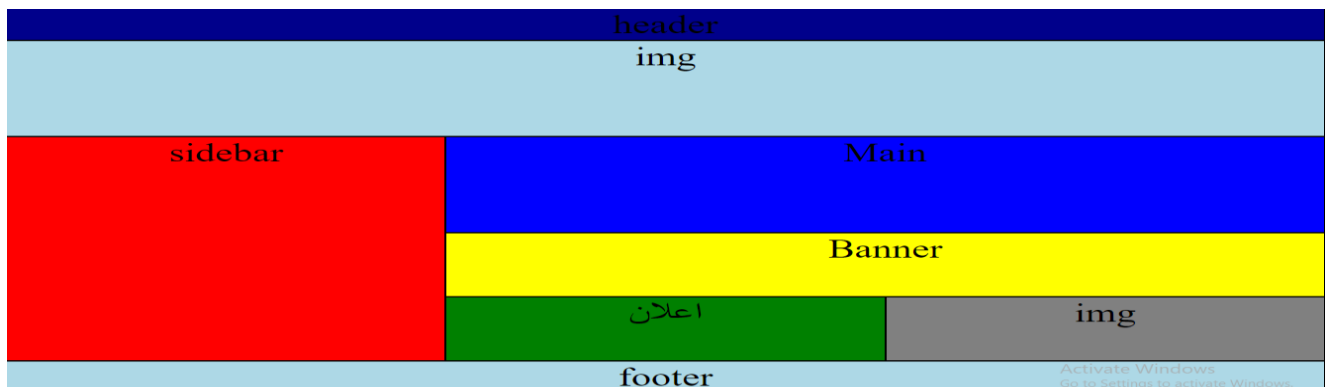
Evaluate:

It's important that every website uses responsive design because it gives the smooth in the website, more stylish than before, more easier to users to use your website, also it effects on the rank (SEO), get more money by increasing the sales. I used all the types of responsive design and it not easy but you want to practice more to become more professional at it, and I liked grid the most.

[17] (What is responsive design? - Definition from WhatIs.com, 2022)

● Media design

It's consider as a responsive design and it's played an important in website and for developers. Developers use it for make the website content (images, videos, p , links , buttons) fits with all the sizes of all screens by using this tag in CSS code `@media screen (min or max width: size px) { code }` . [18](Beginner's guide to media queries - Learn web development | MDN, 2022)

Evaluate:

For me, media quire is a most benefit technique because it's save much time and effort instead of doing code for laptop size and code for phone size and without media, the design of the website may be not completely for example if you made a code for laptop size and one of the users accesses the website via phone, he will zoom in or out to show the content of the website.Media is easier if you know more about css and it's properties, useful .

● Mobile First

It's a popular techniques which developers used to make first the code of phone size screens and then use the media to make the laptop size screens and it used because developers focus on the content and the size of the phone screens.[19](What is Mobile First Design? Why It's Important & How To Make It?, 2022)

Evaluate:

It helps the phone users the best rich content in the website, with this technique the error will decrease in the webpages because the content of the "mobile first" is less than the laptop size so less errors , and finally it effects positively the rank (SEO) of the website.For me, I faced many difficulties in using mobile first and turn the content to laptop screens but after I learned more about it and practice ,l become more familiar with it.

● SEO techniques

Professional people always use this techniques because it's effect positively the rank of your website and make your website more popular and accessible to users to access your website in google or any browser by using tags in HTML code such as using a clearly :title, headers, meta data (description), domain names, and others.[20](What is SEO? Basics of Search Engine Optimization | Mailchimp, 2022)

Evaluate:

From my experience and did more research in it , SEO plays an important role to success the website and factor to make it popular to the users.To show your content to users and make more money (because more visits= more money), you should use it and it's not a complex process to implement in your website..

3.3.2   My website techniques

● Responsive design

 I used it because it gives the smooth in the website, more stylish than before, more easier to users to use your website, also it effects on the rank (SEO), get more money by increasing the sales. Also I used grid over flex because I have more experience to use grid than flex, so I decide to use grid over flex in my website.

● Media

If I didn't use media, I should make two or more codes of each webapages in my website to make my website fit's with all screen sizes and that's mean a lot of waste time and effort, so I chose to implement the media in my website.

● Mobile first

If I chose to make the laptop screens first and write the html code and css code with all proprieties to make a good websiteerrors may appear in writing the phone code due to the large number ,

will have to erase many of the content to fit the phone of page content on the phone. I .screens

- SEO techniques

To increase my website rank and become more popular to the users and get more money.

3.4 Frameworks

There are many specific people who created websites, applications which have codes to most common web elements (nav bar,buttons,etc…) that already exists in HTML,CSS or javascript language to facilitate the people lives. For example if you want to create a website and you don't want to write a code or you are not professional in writing a code, so you will use one of the frameworks to make your webpages without writing a code just select the element that you want and move it to the page. Notice that frame can work in front end and back end :

- Bootstrap:

It's used to help the people when they don't want to write a code, it fits with all the programming language such as in our course (Html, css, js) and it provides you to make your website meet with all size screens (mobile,laptop,….) .[21](What is Bootstrap - JavaTpoint, 2022)

Evaluate:

It's easy to use, not complex to learn, if you make your website by using bootstrap , it will fit with all screens that the user will use it to access your website, decrease the waste of time and effort than the write a code.

- Angular:

Google has made this framework, and it's only for javascript language and it's make single page which means that the main page of the website will not move or change , the only thing that will chance is the content in every page in the website by using html and type script.[22](2022)

Evaluate:

I think this frame work will be more easier to users if they know the javascript and how to write a code using java but overall it's very easy and very fast when you are using it and it also decrease the time and effort than you write a code.

- Spring.js:

It's used in backend frameworks and it has a strong reputation in java language and more than 57% of companies in the world in java use this framework and it help the users and people to solve the issues which people faced in java.**Evaluate**: I didn't try this framework but I read about it and found that spring provides the test cases , and prefer that you should know more concepts in java to become more easier to you to use. [23](12. Spring JavaScript Quick Reference, 2022)

- Laravel.php:

Also it's deal with backend so it's used to control the data by helping with model,view,controller (MVC). It also deal only with php language and it support all the tools that the users need.**Evaluate**:I'm not professional in php language and I didn't use this framework before, but from

the research, I read about this frame work and it's considered one of the best frameworks that works with MVC. [24](Laravel - The PHP Framework For Web Artisans, 2022)

4. Search Engine Optimization

4.1 (SEO)

It's an important concept in web because through it you can measured the success of your website by using steps or procedures in your code (not always code) to effect creativity your website and make it popular to the users to show your content and make more money. Word of "search engine" doesn't only mean google , it means all the browsers in the internet.

For example if you want to make a advertisement website, you need to use these techniques to become your website more popular and to increase the User experience and interface to get offers from another organizations and get more money so it's important for small businesses (to improve)and big(to continue)--- >(More accessing to your website= ↑ranking= ↑performance= ↑money) Simple as that.

.[20](What is SEO? Basics of Search Engine Optimization | Mailchimp, 2022)

4.2 Index

It's the procedures to make your website popular and improve it by increasing the ranking of you website. I will mention some of these procedures:

a. Select the perfect domain that can the user from your domain define the content of your website and your domain name must be easy to remember.

b. Try to make your content fits with the search engine by making your content clearly understandably (images, videos, texts) to your clients, also you must check about your text it's enough to provide all the information that the user need, heading in the website in everywebpages.

c. Use every thing that can help your website in your code such as : meta description, title, perfect keywords to get the best improvement in your website and become popular to your clients. Title tag, headers, select the perfect key words, alt images must be related to your content.

d. Trying to test your website before lunch it, test your website speeds and doesn't have any heavy image that effects the speed, test that your website fits with all the size of screens and son on.

e. Trying to post your website link in social media , another websites, and others because it's help to access the user in your website.

[25](Index – find the definition in the Searchmetrics SEO Glossary, 2022)

4.3 Techniques and evidence

● Select the perfect domain name

I tried to find the best domain name and I found a domain with my name:

hamzamuhsen.com

● Title tag:

It's an important to the users and for search engine to let them know what your website do and from the title, users can expect your content so try to make the title unique by considering the keywords for which you want your page to be found. Evidence in my code:

```html
<title> Electric Power Company </title>
```

● Meta description :

It's used to write your description of your web pages and it will show under the title in search results. If the developer add a professional description to the website, the website will attract the users to access the website over other websites in the results.

Evidence:

```html
<meta name="description" content="It is a government website specialized in inquiring about citizens' bills, send new subscription,and complaint.">
```

- Alternative images:

It is a good option to increase the rank of the website because through it you can add a description of the images in the website to show in the images search and make the website more professional and clearly because if the picture doesn't load to the user screen, the text will show.
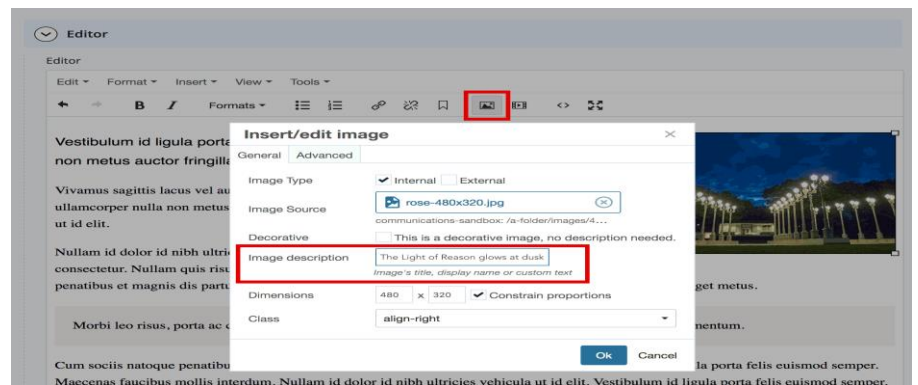
Evidence:

```
<img src="pictures/Logo_home_2.png" alt="Company logo" class='imgg'>
```

- Headers:

Used to set a header in the page by using this tag <h> and you can put more than one header to divide your page into section to make it easier to user to read the content when they access your website. By using a useful and clearly headers to your page , allows the search engine to understand your pages and your content become more viewer than before.

Evidence:

```
<h2>Conditions for accepting subscription:</h2>
```

- Structure data/ Schema:

It is used to improve ranking of the website by using words to display in search result to make the website's content more clearly to users when they read the schema of your website and make the website richer and professional than before.

- Sitemap

Evidence:
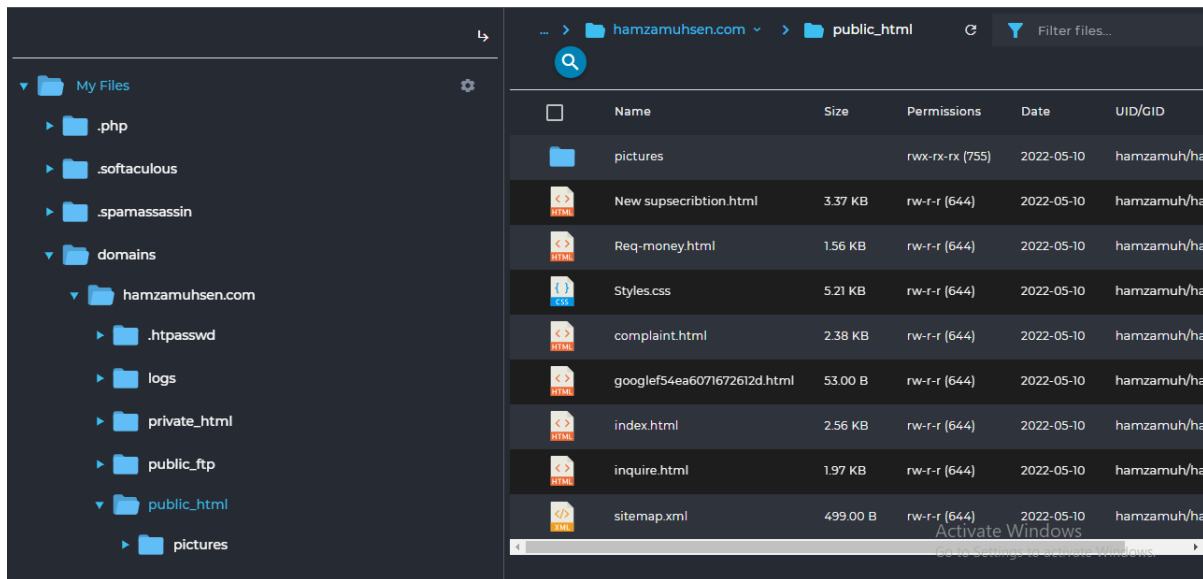
- Google search console:

1) I went to google console.

2)
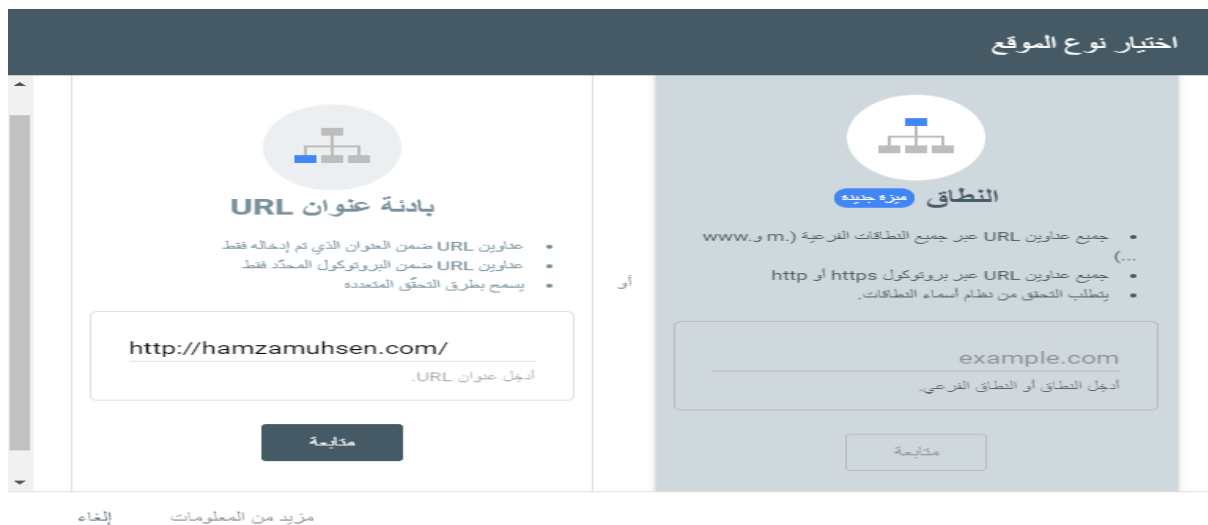
Put my URL of my website in this screen and clicked on continue.

3)

This page showed to me and I downloaded the file in my device and uploaded it to the free hosting panel in html public :
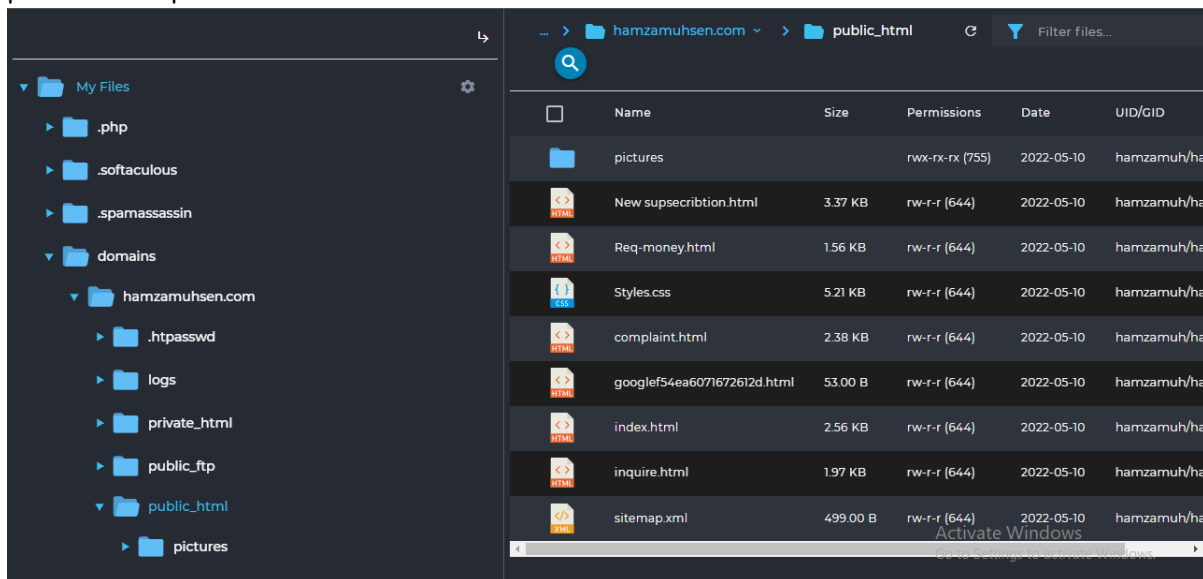
4)

And then back to this screen and press on Confirm.

Note: There are other methods that you can verify your website in google instead of the above steps but I used this method.

5. Front-end and Back-end

5.1.1 Front-end & Back-end

If you talk about websites and interfaces in the website, you must know these two terms that contribute to the website development standard which are front-end and back-end.First, let's talk about front-end, front end is considered as presentation layer and it is the related part about user interfaces and how the user will see the design of website, buttons , images , videos, and others in web pages by using many languages:

- HTML

```
                    Untitled - Notepad            _  □  ×
File  Edit  Format  View  Help
<!DOCTYPE html>
<html>
<body>

<h1>My First Heading</h1>

<p>My first paragraph.</p>

</body>
</html>
```
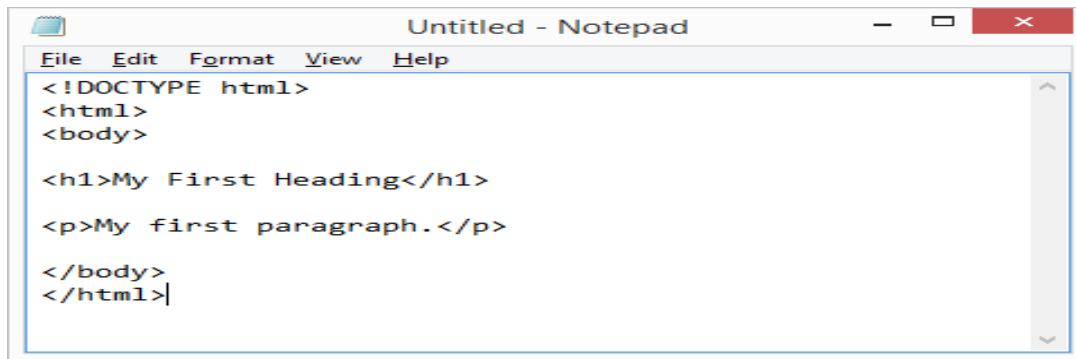
● CSS

 style and design the web pages and style layout of the pages by using grid, flex and position to change the position of the element in the web page as wanted.

 Here is the link tag to link HTML code with CSS:

```
<> myProject.html ●
<> myProject.html >  html
  1   <!DOCTYPE html>
  2   <html lang="en">
  3   <head>
  4       <title>linuxhint</title>
  5       <link rel="stylesheet" href="css/style.css">
  6   </head>
  7   <body>
  8       <h1>This is linuxhint.com</h1>
  9       <p>We are learing how to add a CSS file in HTML</p>
 10   </body>
 11   </html>
```

● JavaScript

 used to make actions in the for examples: show messages if the user click a specific button in the website or make the pictures move inside a limited area. Also we can use frameworks in javascript instead of write a javascript code such as : frameworks, react.js , Angular and others .

 Back-end is considered as application layer and it is the related part about sever and how to implement the elements in front-end part to show to the users. Back end divided into two main categories (programming language and data base).

[26](Frontend and backend - Wikipedia, 2022)

5.1.2   Presentation and Application layers

Presentation layer

It's the section that the user see (front end) , it's show the graphical user interfaces in the website, form and position of elements in the webpages and the users enter the services of the website and benefited from the services. As discussed before about the languages that used in front end such as : HTML , CSS , JS .

Application layer

To discuss this part clearly, this section has many names to called such as : Business logic , application layer. Also this section that the user can't see how the functionalities of the elements works in the website (back end), and it specialized in many things such as: when the users wants to access your website, they send a request (HTTP,s) to the server of your website to login to your website, this layer will review and accept the user requests.

[27](Education, 2022)

5.1.3   Relation

When the user entered your website and saw all the content in your webspages and pressed on button in your website, (the presentation layer) will ask and communicate with the (application layer) to do the work of the button he pressed. Note : application functionalities will always saved in the database of your website, so if presentation layer communicate with application to the functionality of a specific element, the application will communicate with data base to retrieve the functionality of the specific element.

[27](Education, 2022)

6. Online Creation Tools & Custom-Built Sites
6.1 Online Creation Tool

If you want to build your own website, you need to use many techniques that help you to create your website, but also there are many tools that helped the user to create his website without needing of write a code just select what elements you wants in your website and that's called (Online creation tools). From the research I did, I saw many tools such as: wordpress, wix , blogger.

[28](Website builder - Wikipedia, 2022)

6.2 Custom-Build Site

Let's back to the previous example in section online creation, if you don't want to use these tools, you have to build your website by using custom build which is mean that you need to write a code to make your website. The code means : html code for all webpages, Scc code for all pages, js for all webpages and others.

6.3 Compare

	flexible
Custom build	More flexible, because if you made a website and your website become a popular and successful website and you want to change things in your website, Custom build provides you to the easiest way to change and add things in your website.

Online creation	Less flexible, because if want to edit a big things in your website, you can't change and you need to make again new website

	Performance
Custom build	From the research I did, I think the custom is more performance because it's more rank in search engine than online creation. So if any user searched about something in the browser, usually the website's in the top are custom build and as we know SEO has a relationship in website performance, you also can make the layout of your webpages as you want to fit with all screen sizes.
Online creation	So it's less performance that custom because less rank in search engine than custom. (less SEO=less performance)

	Functionality
Custom build	If you are using custom build , you have unlimited functionality to set in your website.
Online creation	per contra, online have a limited functionalities to set in your website, for example you can't adding ecommerce application in your website.

	User experience
Custom build	I think that is custom build have more user experience because in it has unlimited feature and functionalities to add in your website to make your users happy when they accessed your website. also the security in custom is much better
Online creation	Is less than custom because it has limited features to add and the security is not better than custom that makes the user unhappy.

	User interface
Custom build	I think that is custom build have more user experience because if you have ever looked to a custom website, it has the unique design of webpages than than others in the internet.
Online creation	Less user experience because many of it has the same design (graphical) of webpages just differences in color or background. So these websites can be same as the other websites in the internet.

7. Design and Development Process

7.1 Website & Design Document
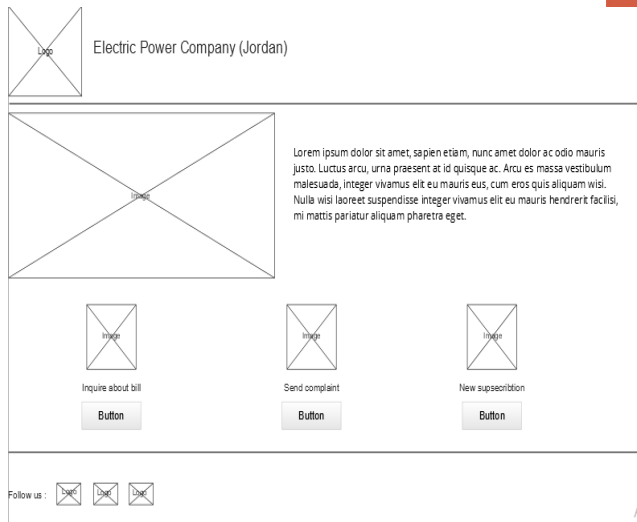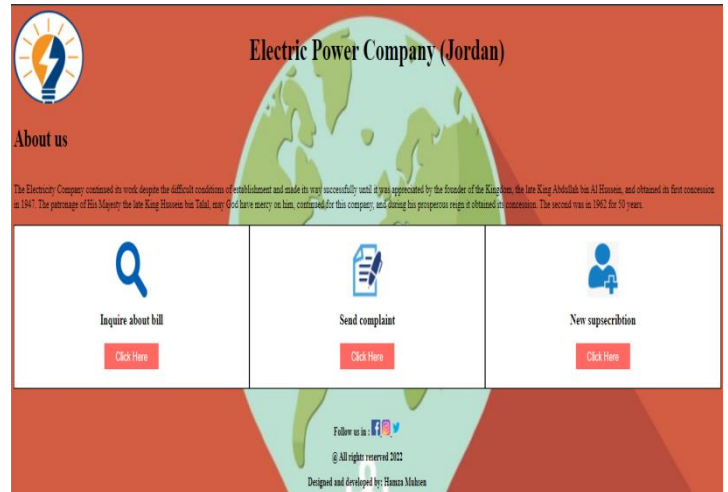
Similarities:

I have covered many things in document design such as : the icon company, the title and the proprieties of images (alternative images,name,..) , the paragraph the told about the company , the images that's describe every service and it's buttons and the social media platforms footer.

Differences:

I also missed many things such as: Add the header before the paragraph (SEO reasons), I didn't add big image because I the suggested picture was not suitable for the site and I tried to find another picture, but I could not find a picture that fit the background picture of the site, add more information in footer (copy right).

*Same similarities and differences in the phone.

Similarities:

The company icon of the page, header (Inquire form), paragraph, input fields, buttons in the bottom of the page.

Differences:

Add the company name in the top of the the page, add new title (information), change the position of the elements, add footer in the bottom of the page.

*In phone, differences : Are the same as laptop and didn't add the company icon in phone design document .

Complaint Form

Lorem ipsum dolor sit amet, sapien etiam, nunc amet dolor ac odio mauris justo. Luctus arcu, urna praesent at id quisque ac. Arcu es massa vestibulum malesuada, integer vivamus elit eu mauris eus, cum eros quis aliquam wisi. Nulla wisi laoreet suspendisse integer vivamus elit eu mauris hendrerit facilisi, mi mattis pariatur aliquam pharetra eget.

First Name
Email
Address
Description

Last Name
Phone number

Back   Submit

<u>Similarities:</u>

The company icon of the page, header (Complaint form), paragraph, input fields, text area, buttons in the bottom of the page.

<u>Differences:</u>

Add the company name in the top of the the the page, add new title (information), change the position of the elements, add footer in the bottom of the page.

*In phone, differences : Are the same as laptop and I didn't add the company icon in phone design document .

Similarities:

The company icon of the page, header (New subscription)and(Conditions) , paragraphs, input fields, buttons in the bottom of the page.

Differences:

Add the company name in the top of the the page, add new title (information), change the position of the elements, add footer in the bottom of the page.

*In phone, differences : Are the same as laptop and I didn't add the company icon in phone design document .

Similarities:

 header (Your bill) , texts , buttons in the bottom of the page.

Differences:

Add the company name and logo in the top of the the page, remove the fields that show the output values and add border to every text, add footer in the bottom of the page.

*In phone, differences : Are the same as laptop and I didn't add the company icon in phone design document .

7.2 Evaluate

In this course I learned a lot of things about website, what is the front and back end , process to create your website and others. I tried to put every thing I learned in my website and the things that I do very good at it, for example I did a design document (wire frame and sitemap) , covered most common tags in html (image, anchor, footer, head, body, meta data,..) and know what is the function from it, what is css and how to link between html and css, java script. My experience from these is very good and I easily learned many things.

I had much fun when I used html because it's very simple and easy to use and until now I didn't faced any problem while using it, but on the other hand, css isn't like html because I faced many problems while using it and I think it's because I didn't use it previously also I had problem when publish my website, the content was not organized so I searched and the solution was to refresh the cache (Ctrl+f5). java script I didn't use it previously but I enjoyed while using it, for me html is the most easiest language in this course. The last of the process (,google console,search engines, first mobile,grid) in website was easy and enjoyable and I didn't faced any problems.

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Declaration Form

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Issue date: **14-5-2022**	**Submission date:** **14-5-2022**	**Submitted on:** **14-5-2022**	
Program: Computing			
Course Name: Website Design and Development **HTU Course Code:** 30201102 **BTEC UNIT: 10**			
Assignment number and title: No. 1 Designing and developing a website front-end			

Student declaration

I certify that the assignment submission is entirely my own work and I fully understand the consequences of plagiarism.I understand that making a false declaration is a form of malpractice.

Name: Hamza Muhsen   Date:14-5-2022