

## ASSIGNMENT 1 FRONT SHEET

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|---|--|-------------------------------------|-------------------|
| <b>Qualification</b>  | <b>BTEC Level 5 HND Diploma in Computing</b> |                                     |                   |
| <b>Unit number and title</b>  | 10: Website Design & Development             |                                     |                   |
| <b>Submission date</b>  | 22/3/2020                                    | <b>Date Received 1st submission</b> |                   |
| <b>Re-submission Date</b>   | 22/3/2020                                    | <b>Date Received 2nd submission</b> |                   |
| <b>Student Name</b>   | LUU VAN MANH                                 | <b>Student ID</b>                   | Gcs18050          |
| <b>Class</b>  | GCS0801B.1                                   | <b>Assessor name</b>                | NGUYEN HO PHU BAO |
| <b>Student declaration</b> 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. |  |                                     |                   |
| <b>Grading grid</b>   |  | <b>Student's signature</b>          | MANH              |
|   |  |                                     |                   |

| P1 | P2 | P3 | P4 | M1 | M2 | M3 | D1 |
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⚙️ **Summative Feedback:**

⚙️ **Resubmission Feedback:**

**Grade:**

**Assessor Signature:**

**Date:**

**Signature & Date:**

## ASSIGNMENT 1 BRIEF

|                         |   |                        |           |
|-------------------------|---|------------------------|-----------|
| <b>Qualification</b>    | BTEC Level 5 HND Diploma in Computing   |                        |           |
| <b>Unit number</b>      | 10: Website Design & Development        |                        |           |
| <b>Assignment title</b> | Web Services Presentation and Guidebook |                        |           |
| <b>Academic Year</b>    | 2018 – 2019                             |                        |           |
| <b>Unit Tutor</b>       | LUU VAN MANH                            |                        |           |
| <b>Issue date</b>       | 22/3/2020                               | <b>Submission date</b> | 22/3/2020 |
| <b>IV name and date</b> | MANH - 22/3/2020                        |                        |           |

| Submission Format: |  |
|--------------------|--|
| <i>Format:</i>     | Two ten-minute Microsoft® PowerPoint® style presentations to be presented to your colleagues   |
| <i>Submission</i>  | Students are compulsory to submit the assignment in due date and in a way requested by the Tutors. The form of submission will be a <b>soft copy</b> posted on <a href="http://cms.greenwich.edu.vn/">http://cms.greenwich.edu.vn/</a> |
| <i>Note:</i>       | The Assignment <i>must</i> be your own work, and not copied by or from another student or from books etc. If you use ideas, quotes or data (such as diagrams) from books, journals or other sources, you                               |

must reference your sources, using the Harvard style. Make sure that you know how to reference properly, and that understand the guidelines on plagiarism. *If you do not, you definitely get failed*

### Unit Learning Outcomes:

**LO1** Explain server technologies and management services associated with hosting and managing websites.

**LO2** Categorise website technologies, tools and software used to develop websites.

### Assignment Brief and Guidance:

You work as a full-stack web team leader for a leading creative web solutions and marketing company. Your team is about to have a big contract to develop an online shopping mall.

One of the preparation tasks is to choose appropriate tools and techniques to realise a custom built website.

As part of your role, you have been asked to create an engaging presentation to help train junior staff members on basic web technologies including hosting and website management as well as server technologies. Your presentation should not only explain basic knowledge in the domain but also points out the impact of these technologies to website design, functionality, management or performance.

You also need to present more technical presentation to senior staff members to discuss about front-end, back-end technologies as well as other tools, techniques and softwares used to develop website from simple (online website creation tools) to complicated (custom built). Your presentation will be used as guidance of choosing suitable tools and techniques for the next project.

| Learning Outcomes and Assessment Criteria  |   |  |
|--|---|--|
| Pass   | Merit   | Distinction  |
| <b>LO1</b> Explain server technologies and management services associated with hosting and managing websites   |   | <b>LO1 &amp; 2</b><br><b>D1</b> Justify the tools and techniques chosen to realise a custom built website. |
| <b>P1</b> Identify the purpose and types of DNS, including explanations on how domain names are organised and managed.<br><br><b>P2</b> Explain the purpose and relationships between communication protocols, server hardware, operating systems and web server software with regards to designing, publishing and accessing a website. | <b>M1</b> Evaluate the impact of common web development technologies and frameworks with regards to website design, functionality and management.<br><br><b>M2</b> Review the influence of search engines on website performance and provide evidence-based support for improving a site's index value and rank through search engine optimisation. |  |
| <b>LO2</b> Categorise website technologies, tools and software used to develop websites  |   |  |

|  |   |  |
|--|---|--|
| <p><b>P3</b> Discuss the capabilities and relationships between front-end and back-end website technologies and explain how these relate to presentation and application layers.</p> <p><b>P4</b> Discuss the differences between online website creation tools and custom built sites with regards to design flexibility, performance, functionality, User Experience (UX) and User Interface (UI).</p> | <p><b>M3</b> Evaluate a range of tools and techniques available to design and develop a custom built website.</p> |  |
|--|---|--|

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## P1 Identify the purpose and types of DNS, including explanations on how domain names are organised and managed.

### 1 . DNS

\* DNS is like a translator, DNS translates the domain name into an IP address of 4 different numbers. for example, the domain name www.fpt.com to 123.457.12 or vice versa translates an IP address into a domain name. DNS makes the Internet more user-friendly today with the advent of all devices connected to the Internet, Users can only remember the name of the website but it is difficult to remember the IP address range of that website. Therefore, DNS appears as a service that allows users to enter the domain name on the web browser and website name.

\* DNS works step by step according to the structure of DNS, the first step is to resolve information queries. For example, www.home.com will be converted to 192.168.1.1 which is an ip address provided to each device on the internet, just as each home will have a separate home number to facilitate search. When people want to find someone's website, they can enter the domain name and it will take them there. If you do not receive the information, you will see an error code appear.

\* A website on the internet needs at least two components, a web server and a domain name, to work properly. The web server is a computer that holds the files and databases that make up your website. Then send it to the internet every time someone accesses your site from their server. The domain name is the name people type in the browser, and then because the domain name points to the web server address, the browser can request to access that web server. Without a domain name, everyone must remember the exact IP address of the server when accessing - this is unlikely.

#### \*Types of DNS Server and its role

➤ In total, about 4 types of servers participate in the domain name resolution system :

#### **DNS Recursor**

➤ The DNS recursor is the server that plays the role of communicating with other servers to replace it as a response to the client (the user's browser). It is like a diligent employee who receives and returns information to the client (browser) to find the right information they need. To obtain information, the DNS recursor may need to call the Root DNS Server to help

#### ➤ **Root Name server**

➤ Root DNS Server, also known as name servers, is the most important server in the hierarchy of DNS. It has no specific name. You can understand that it is a library to guide your search. In fact, the DNS recursive resolver will forward the request to the Root Name server. The server will then respond that it should look in specific top-level domain name servers (TLD name servers).

#### **TLD Name server**

➤ When you want to access Google or Facebook, usually your extension will use .com. It is one of the top-level domains. The server for this type of top-level domain is called the TLD name server. It is responsible for managing all information of a common domain name extension.

➤ For example, when you type www.google.com in a browser, TLD .com will respond from a DNS resolver to recommend an Authoritative DNS server. Authoritative Name Server is the official place that contains the data source of that domain.



➤ **Authoritative Name server**

➤ When a DNS resolver finds an authoritative name server, this is the domain name resolution that takes place. Authoritative nameserver contains domain information associated with the address. It will give recursive resolvers the necessary IP address found in its catalog of records.

**P2 Explain the purpose and relationships between communication protocols, server hardware, operating systems and web server software with regards to designing, publishing and accessing a website.**

## **2 the function**

**Communication protocols** : communication protocol, also known as inter-network protocol, information exchange protocol and also called interaction protocol. In information technology, this is called a protocol. The purpose of the communication protocol is to link subnets into interlocations for data transmission, signal transmission, authentication, data representation and data error detection. Data transmission between the transport layer and the network layer Defines the structure of data packets as a single and basis for data transmission on the Internet, so that computers and devices can connect and exchange information. believe together.

**Server hardware** : Basically, the hardware in the computer is the part that we can see, hold, touch. The hardware in the computer includes: monitor, mouse, keyboard, cords, CPU, Ram ... The hardware is created by computer manufacturing companies, the hardware components will be used. to run the software.

**Operating systems** : Basically software is instructions that can be stored and run by hardware and software in the computer are applications running inside the computer, we cannot hold and touch it. A computer has a lot of software. Each software addresses a different function.

**Web server software** : Organize communication between users and the system.

- Provide resources for programs and how to organize their implementation.
- Organize information storage on external memory, provide tools for searching and accessing information.
- Check and support by software for peripheral devices to exploit them conveniently and effectively.
- A system utilities support.

### **Relationship between them**

- *Communication protocol*

The protocol defines rules, syntax, semantics, and synchronization of communication and can methods of error recovery. Protocols can be implemented by hardware, software or a combination of both.

- *Server Hardware*

Hardware represents all the physical things that you can touch and see which merged and built together as a single entity called a Personal Computer (PC). It can be a laptop or even your smart devices in this case.

- *Operating System*

Operating System (OS) is working on top of the hardware. OS is the software that brings you the interface to be able to communicate with the hardware. Well, of course, there is more than

that. OS communicates with the kernel using the device drivers to send “commands” to the hardware to do the things that you want to do.

- *Web server software*

Web Server Software is also just a software application. It is installed, and runs on a computer - the server serves as a Web Server, thanks to this program that users can access the Web site information from another computer on the network (Internet, intranet). ). Web Server has the ability to send Web clients via the Internet environment (or Intranet) via HTTP protocol.

**P3 Discuss the capabilities and relationships between front-end and back-end website technologies and explain how these relate to presentation and application layers.**

### **3 The meaning of front-end and back-end in website development.**

Ront Front-end and back-end are very important in programming a website. Each one will have its own function and a close relationship with each other. When accessing a website, user experience is very important. It includes many factors from page load speed, layout, design to image quality, website stability. The front-end of a website is the interface to interact with users. Everything that you can see on the website belongs to the front-end from the font, the color to the menu bar, the slider up and down. Back-end job. The main function of a Back-end developer is to ensure that the information and services required by Front-end are implemented. They are the ones responsible for maintaining the entire system, based on the integration process.

What are the front-end and back-end technologies currently being used

**front-end:** 3 main languages: HTML, CSS, and JavaScript programming languages and frameworks like Bootstrap,

Foundation, Backbone, AngularJS, and EmberJS to help ensure content is always displayed well on all different devices

**back-end:** To make server, application, and database interoperable, server-side languages such as PHP, Ruby, Python, Java, and .Net are often used. build an application, and tools like MySQL, Oracle, and SQL Server to search, store, or change data and serve it back to the user in the front-end.

how these relate to presentation and application layers.

These two examples will help to show the strong cohesion of an unbeaten duo, front-end and back-end.

#### **Ex1 : front-end**

When you log in to facebook, everything you are seeing on this site right now can be done by a front-end developer. A designer creates logos and graphics, a photographer provides images, a copywriter writes the content. But a front-end developer combines all the pieces together and converts it into a web language, and creates the experience you have while browsing through each page.

#### **Ex2 : back-end**

Just like when you log into Facebook, when you navigate to this site, Udacity's servers send information to your computer or mobile device, and then they are converted to the site you are seeing.

#### P4 Discuss the differences between online website creation tools and custom built sites with regards to design flexibility, performance, functionality, User Experience (UX) and User Interface (UI).

4

**Wix and wordpress :** There are many platforms to create a website. But in summary, we divided into 2 specific ways: one is to use website builder and the other is to use content management system (CMS).

**Wix and wordpress :** Flexibility of design and performance

**Wix :** Wix is a great free web building platform. One of the biggest advantages of WIX is that it allows you to build websites with simple drag and drop. Tools, features integrated smartly. This makes designing and editing the website interface convenient and fast. Just go to Manage Pages and click the button. Your new pages will be automatically added to the navigation menu. Wix has many ready-made designs so to design a website, you just need to choose the interface you want, update the content and images and you're done. But the templates that Wix provides have an important disadvantage that you cannot change the model when you start your editing process. And you can even change the look and feel of your website on mobile with Wix mobile editing.

**Wordpress:** Although Wordpress started out as a simple blogging platform, it rose quickly and outstripped other competitors and became a versatile builder that allowed you to create many different websites. It has over 40,000 plugins available and especially all are free. Wordpress themes can be found at two places at wordpress.org and various independent theme websites and theme stores. But in contrast to Wix, you will not be able to use WYSIWYG editing to change and edit your Wordpress theme, if you want to change then you must know how to read the code.

**Wix and wordpress: functionality.**

Wix has many useful functions for users. It integrates many functions into websites such as, comment, forums, live chat, this Site builder supports you to adjust a lot of styles, such as themes and tools. Other designs are easily found here.

Wordpress also has lots of cool and unique functions. This platform has thousands of plugins and themes. These tools can help you change the design and functionality of your website thoroughly. You can create almost any kind of website you can think of, with every function available. Moreover, most of the best WordPress plugins are free.

#### What is UI / UX?

UI is the representative of website design, user interface. For UX is the user experience. These are two concepts that always go hand in hand, and are used as the main criteria to evaluate any website.

UI / UX design is always mentioned in parallel, together with the fact that it is two technologies with certain differences. Understanding individually, specifically about each technology will help understand the functions, tasks and requirements correctly. It is a way to help us make the most accurate decision according to our actual needs.

The official launch so that users can easily access, then use the functions in the most convenient and effective way. UX technology when implemented ensures effective access to a website for each person to be effective, convenient as desired.

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