



**RQF LEVEL 3**



**SWDWD301**

**SOFTWARE  
DEVELOPMENT**

# Website Development

***TRAINER'S MANUAL***

*October, 2024*



## WEBSITE DEVELOPMENT



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## ACRONYMS

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**CPM:** Characters Per Minute

**CSS:** Cascading style sheet

**HTML:** Hypertext Markup Language

**HTTP:** Hypertext Transfer Protocol

**RSS:** Really Simple Syndication

**RTB:** Rwanda TVET Board

**TQUM Project:** TVET Quality Management Project

**UAC:** User Account Control

**URL:** Uniform Resource Locator

**WPM:** Words Per Minute

**XML:** Extensible Markup Language



## INTRODUCTION

This trainer's manual includes all the methodologies required to effectively deliver the module titled "**Website development.**" Trainees enrolled in this module will engage in practical activities designed to develop and enhance their competencies.

The development of this training manual followed the Competency-Based Training and Assessment (CBT/A) approach, offering ample practical opportunities that mirror real-life situations.

The trainer's manual is organized into Learning Outcomes, which is broken down into indicative content that includes both theoretical and practical activities. It provides detailed information on the key competencies required for each learning outcome, along with the objectives to be achieved.

As a trainer, you will begin by asking questions related to the activities to encourage critical thinking and guide trainees toward real-world applications in the labor market. The manual also outlines essential information such as learning hours, didactic materials, and suggested methodologies.

This manual outlines the procedures and methodologies for guiding trainees through various activities as detailed in their respective trainee manuals. The activities included in this training manual are designed to offer students opportunities for both individual and group work. Upon completing all activities, you will assist trainees in conducting a formative assessment known as the end learning outcome assessment. Ensure that students review the key reading and the points to remember section.

## **MODULE CODE AND TITLE: SWDWD301 WEBSITE DEVELOPMENT**

**Learning Outcome 1: Apply keyboard skills**

**Learning Outcome 2: Create web structures**

**Learning Outcome 3: Style web elements**

## Learning Outcome 1: Apply Keyboard Skills



### Indicative contents

#### 1.1 Use of keyboard characters

#### 1.2 Combination keys and their use

#### 1.3 Application of typing technique

### Key Competencies for Learning Outcome 1: Apply keyboard skills

Knowledge	Skills	Attitudes
<ul style="list-style-type: none"><li>• Definition of the keyboard</li><li>• Description of the different types of keyboard</li><li>• Identification of keyboard parts</li><li>• Description of the keyboard combination keys</li><li>• Description of typing techniques</li><li>•</li></ul>	<ul style="list-style-type: none"><li>• Using keyboard characters</li><li>• using the keyboard combination keys</li><li>• using typing master software</li><li>• Applying typing tips</li></ul>	<ul style="list-style-type: none"><li>• Be self-motivated</li><li>• Be Detail oriented</li><li>• Be a good observer</li><li>•</li></ul>



**Duration: 20 hrs**



#### **Learning outcome 1 objectives:**

**By the end of the learning outcome, the trainees will be able to:**

1. Define clearly the term keyboard as used in typing skills
2. Describe clearly the common keyboard layout based on language used.
3. Identify correctly the different parts of keyboard based on their functions
4. Use properly the keyboard characters in accordance with the given task
5. Use properly keyboard combination keys as used in typing
6. Apply properly the typing techniques as used in typing skills

7. Use correctly the typing master software as used in typing skills



### Resources

Equipment	Tools	Materials
<ul style="list-style-type: none"><li>• Computers</li><li>• Keyboard</li><li>• Ergonomic Accessories</li><li>• Projector/Smartboard</li></ul>	<ul style="list-style-type: none"><li>• Text editors</li><li>• Word processing</li><li>• Typing software (typing master, rapid typing)</li></ul>	<ul style="list-style-type: none"><li>• Internet</li></ul>



### Advance Preparation:

Before delivering this learning outcome, you are recommended to:

- Avail computers with typing software tools installed.
- Avail an Images of computer keyboard or real computer keyboards.
- Avail sample of text for typing by using the keys on the keyboard



## Indicative content 1.1: Use of keyboard characters



Duration: 7 hrs



### Theoretical Activity 1.1.1: Description of keyboard



#### Notes to the trainer:

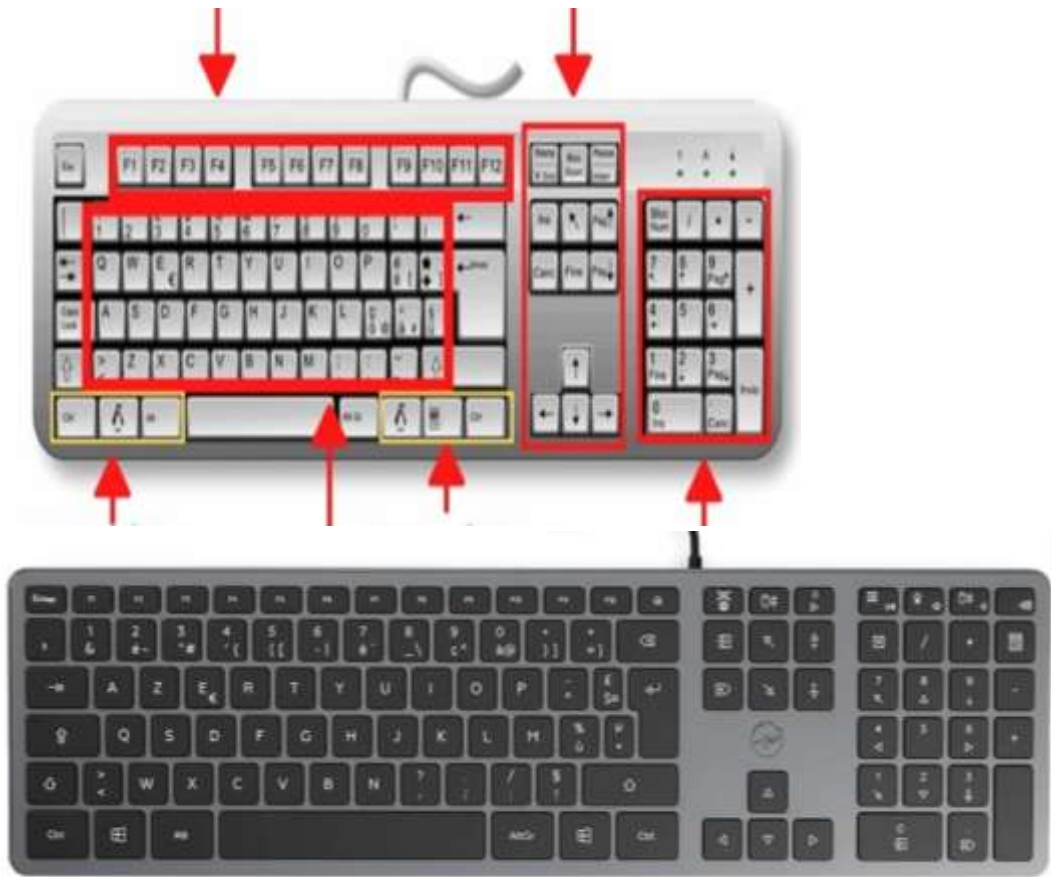
While delivering this content, a small group can be used for describing a keyboard. The use of images, videos, as didactic materials is required



#### Key steps:

While delivering this activity, pass through the following steps:

**Step 1:** Introduce the activity and ask trainees to answer to the following questions reflecting on below images:



**Question 1:** Name and define the above device.

**Question 2:** Based on how keys are arranged, name the different Parts found on first image.

**Question 3:** According to the arrangement of the first six characters(letters) on the first row for both images, name the basic layout we can have.

- Step 2:** Ask any trainees to write answers provided on flipchart/paper.
- Step 3:** Ask trainees to discuss the provided answer and choose correct answers.
- Step 4:** Provide expert view and clarifies ideas by using didactic materials
- Step 5:** Address any questions or concerns
- Step 6:** Ask trainees to read the Key readings 1.1.1 in their manuals



#### **Points to Remember**

- Keys on Keyboard are grouped into different groups based on its function such as: alphanumeric key, numeric keypad, function key and Navigation key.
- Keyboards have different layouts such as QWERTY and AZERTY.



#### **Practical Activity 1.1.2: Use of keyboard characters**



#### **Notes to the trainer**

This activity should take place in a computer Lab where the trainees should use keyboard characters (alphanumeric keys, Numeric keys, Special keys, and Arrow keys) to type the text. While delivering this content, you are required to:

- Avail real keyboard.
- Avail computer with text editing application installed



#### **Key steps:**

**While delivering this activity, pass through the following steps:**

- Step 1:** Introduce the topic and ask trainees to perform the task below (write the following text)

### **Information and Communications Technology (ICT) in education.**

Schools use a diverse set of ICT tools to communicate, create, disseminate, store, and manage information. In some contexts, ICT has also become integral to the teaching learning interaction, through such approaches as replacing chalkboards with interactive digital whiteboards, using students own smart phones or other devices for learning during class time, and the flipped classroom model where trainees watch trainers at home on the computer and use classroom time for more interactive exercises.

- Step 2:** Explain the task and provide clear work instruction
- Step 3:** Demonstrate how to use the keyboard characters.
- Step 4:** Ask trainees to use keyboard characters and monitor the activities.
- Step 5:** Verify whether keyboard characters are clearly used.
- Step 6:** Ask trainees to read key reading 1.1.2



#### **Points to Remember**

- There are several procedures to take under consideration in order to effectively use keyboard characters like: Being familiar with keyboard layout, Correct finger placement on keyboard and Press key with appropriate finger



#### **Application of learning 1.1.**

Project manager, needs to send an email to her team to provide updates on a project and schedule a meeting. You are asked to write the following Email for the team.

Subject: Project Update and Team Meeting

Hi Team,

I hope this email finds you well. I wanted to provide a quick update on the current status of our project and schedule a team meeting to discuss upcoming milestones.

Project Update:

- We have successfully completed Phase 1 of the project.
- The development team is working on implementing new features based on client feedback.
- QA testing is scheduled for next week.

Upcoming Team Meeting:

I propose that we have a team meeting on [Day], [Date] at [Time] to discuss the following,

1. Review the completed Phase 1 and address any questions.



2. Plan for the upcoming QA testing phase.

3. Discuss the timeline for the implementation of new features.

Please confirm your availability for the proposed meeting time. If you have any specific agenda items you'd like to add, please let me know by [Deadline].

Looking forward to a productive discussion.

Best regards,

Elements	Indicators	Observation	
		Yes	No
<b>Keyboard Characters are correctly used</b>	1.1 Capital letters are written		
	1.2.Lower case letters are used		
	1.3.Spacing is applied		
	1.4.Numbers are written		
	1.5 Punctuation signs are used		



## Indicative content 1.2: Combination keys and their use



Duration: 5 hrs



### Theoretical Activity 1.2.1: Description of keyboard Combination keys



#### Notes to the trainer:

- While delivering this content, small groups can be used for describing combination keys on keyboard.
- The use of real or images of keyboard as didactic materials is required



#### Key steps:

**While delivering this activity, pass through the following steps:**

- Step 1:** Introduce the activity and ask trainees to answer the following questions:
- a. What do you understand about the combinations of keys?
  - b. What are primarily keys used to perform combinations or shortcut?
- Step 2:** Ask any trainees to write answers provided on flipchart/paper
- Step 3:** Ask trainees to discuss the provided answer and choose correct answers.
- Step 4:** Provide expert view and clarifies ideas by using didactic materials.
- Step 5:** Address any questions or concerns.
- Step 6:** Ask trainees to read the key reading 1.2.1 in the trainee manual



#### Points to Remember

- Key combinations involve pressing multiple keys together or in sequence to perform specific functions, such as shortcuts (Ctrl + C to copy), modifier keys (Shift + A for a capital letter), and navigation (Alt + Tab to switch applications).
- The primarily keys used to perform combinations or shortcut are: Ctrl, Alt, Shift, and function (Fn)



### Practical Activity 1.2.2 Apply combination keys



#### Notes to the trainer

- This activity should take place in a computer Lab where the trainees should apply combination keys (Shift, Alt, and Ctrl keys, Windows, and Fn key), to type the text. Work should be done individually.
- While delivering this content, you are required to:
  - Avail real/image of keyboard.
  - Avail sample text
  - Avail computers with Installed operating system



#### Key steps:

**While delivering this activity, pass through the following steps:**

- Step 1:** Introduce the topic and ask trainees to perform the following task  
As a data clerk who uses keyboard characters in daily activity, you are asked to perform combinations keys as used in typing skills.
- Step 2:** Explain the task and provide clear work instructions.
- Step 3:** Demonstrate how you can apply Combination keys. While demonstrating, explain the steps to follow.
- Step 4:** Ask trainees to apply combination keys to modify sample text and monitor the procedures
- Step 5:** Verify whether Ctrl, shift, alt, fn keys are properly used
- Step 6:** Ask trainees to read key readings 1.2.2.



#### Points to Remember

The Steps to use combination keys

**Step1:** Identify the desired combination key

**Step2:** Locate the keys on your keyboard

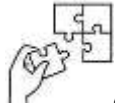
**Step3:** Press and hold the modifier key(s)

**Step4:** While holding the modifier key(s), press the main key

**Step5:** Continue holding the modifier key(s) and press the additional keys,

**Step6:** Release all key

- Key combinations vary according to the system (operating system) or application you are using



**Application of learning 1.2.**

As IT Support you are requested to help project Manager to Modify and print the document from his computer while it is experiencing touchpad problems (Cursor is not moving), You are request to duplicate and Modify whole the text to become Capitalized and print it by using keyboard only.

Elements	Indicators	Observation	
		Yes	No
Combination keys are correctly used	1.1.Text is selected		
	1.2.Text is duplicated		
	1.3.Text is Capitalized		
	1.4.Document is printed		



### Indicative content 1.3: Application of typing technique



Duration: 8 hrs



#### Theoretical Activity 1.3.1: Description of typing techniques



#### Notes to the trainer:

- While delivering this content, a small group can be used for describing typing techniques.
- The use of images as didactic materials is required



#### Key steps:

While delivering this activity, pass through the following steps:

**Step 1:** Involve trainees in formulation of groups.

**Step 2:** Introduce the activity and request trainees to respond to the following questions



a) Based on the image provided above, what do you think the images are expressing?

b) What do you understand by the following terms?

- Typing
- Typing technics
- Touch typing
- Ergonomics

c) What are the typing tools or software that can help you to be familiar with touch typing?

**Step 3:** Ask any trainees to write answers provided on flipchart/papers

**Step 4:** Ask trainees to discuss the provided answer and choose correct answers

**Step 5:** Provide an expert view and Address any questions or concerns

**Step 6:** Ask trainees to read the key reading 1.3.1 in the trainee manual.



### Points to Remember

- In typing skills, the tips to follow are Hand positioning, Body posture, ergonomics and typing speed
- There are some ergonomics tips to follow such as: Adjust your chair, monitor position, Keyboard and Mouse position, taking regular breaks
- There are some typing tools or software which can help to improve touch typing, some of them are: Typing master, Keybr, TypingClub, Rapid Typing, Typing Bolt.



### Practical Activity 1.3.2: Use typing master



### Notes to the trainer

- This activity should take place in a computer Laboratory where the trainees use typing Master application
- While delivering this content, you are required to:
  - Avail computers with typing master installed



### Key steps:

**While delivering this activity, pass through the following steps:**

**Step 1:** Introduce the topic and ask trainees to perform the following task.

As software developer, you are asked to the computer lab to use typing master software.

**Step 2:** Demonstrate how to use typing master. While demonstrating, explain the steps to use typing master.

**Step 3:** Asks trainees to use typing master and monitor the procedures.

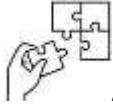
**Step 4:** Verify whether typing master is correctly used.

**Step 5:** Ask trainees to read key reading 1.3.2.



### **Points to Remember**

- To use typing master, you are requested first of all to perform initial configuration such as: Lunch typing master, create a user Profile, Set Skill Level, Select Keyboard Layout, Start with a Typing Test...



### **Application of learning 1.3.**

Jane is an administrative assistant at a busy marketing firm. Her daily tasks include typing emails, creating reports, and managing schedules. Despite her experience, Jane often finds herself spending too much time on typing-related tasks due to her relatively slow typing speed and frequent errors. The firm recently decided to implement a productivity improvement program to help employees work more efficiently. Jane's manager introduces Typing Master as part of the productivity program. Jane takes an initial typing test on Typing Master to assess her current typing speed and accuracy. The results show that her typing speed is 40 WPM with an accuracy of 85%.

Jane dedicates 30 minutes each day to practice typing using Typing Master. She follows the structured lessons, which gradually increase in difficulty, and plays typing games to make the practice sessions enjoyable. Jane uses the progress tracking feature to monitor her improvements. After a few weeks, she notices her typing speed has increased to 55 WPM, and her accuracy has improved to 95%.

With the help of Typing Master, Jane has significantly improved her typing speed and accuracy. This has not only enhanced her productivity but also reduced her stress levels and increased her job satisfaction. Her manager is pleased with the positive impact on her performance, and the firm considers expanding the Typing Master program to other employees. So as trainee try to increase your typing speed and accuracy up to 45 WPM and accuracy of at least 80%

Elements	Indicators	Observation	
		Yes	No
<b>Typing techniques are correctly applied</b>	1.1 Hands are well positioned on the keyboard		
	1.2. The head is balanced directly over the shoulders.		
	1.3. The shoulders are relaxed and level, not hunched or rounded.		
	1.4. The spine is aligned in its natural curves		
	1.5. The knees are slightly bent and in line with the feet.		
	1.6. The feet are flat on the ground, with the weight distributed evenly on both feet		





## Learning outcome 1 end assessment

**Question 1:** What is a keyboard?

- A) A device used to display images
- B) A device used to input text and commands into a computer
- C) A device used to output sound
- D) A device used to store data

**Question 2:** What is the most common keyboard layout in English-speaking countries?

- A) AZERTY
- B) QWERTY
- C) DVORAK
- D) QWERTZ

**Question 3:** Which key is typically found directly below the 'Q' key in a QWERTY layout?

- A) A
- B) W
- C) Z
- D) S

**Question 4:** Which keyboard layout is primarily used in France?

- A) QWERTY
- B) QWERTZ
- C) AZERTY
- D) DVORAK

**Question 5:** The primary home row keys for the left hand on a QWERTY keyboard are: A, S, D, and \_\_\_\_\_.

**Question 6:** The key used to delete the character to the left of the cursor is called the \_\_\_\_ key

**Question 7:** Typing speed is typically measured in \_\_\_\_\_ per minute (WPM).

**Question 8:** Ergonomics in typing involves proper \_\_\_\_\_ and \_\_\_\_\_ to prevent strain and injury.

**Question 9:** To create a capital letter, you hold down the \_\_\_\_\_ key while pressing the letter key.

**Question 10:** The function keys, such as F1, F2, etc., are located at the \_\_\_\_\_ of the keyboard.

**Question 11: Match the typing game to its description**

Answer	Typing Game	Description
1.....	1. Nitro Type	A. Provides typing exercises with real-time error detection and correction.
2.....	2. Type Racer	B. A space shooting game where you destroy enemy ships by typing words
3.....	3. TypingClub	C. Offers structured lessons and interactive games to improve typing skills
4.....	4. ZType	D. An online multiplayer game where players race by typing passages from books, movies, and songs
5.....	5. Keybr	E. A competitive racing game where your typing speed controls the speed of your car

### Practical assessment

XYD-Ltd is an agricultural organisation located in Musanze district. They have a problem of writing a company profile because it has many different and complicated characters.

They want someone to write for them a company profile of 9600 words to submit to the RDB for getting an agricultural licence. As a Level 3 student in software development and acquired keyboard skills, you are requested to do this task by respecting the body posture, ergonomics and hand positioning).

Elements	Indicator	Observation	
		Yes	No
1.Characters are properly used according to the task.	1.1. Alphanumeric keys are used		
	1.2.Numeric keys are used		
	1.3.Special keys are used		
	1.4.Arrow keys are used		
	1.5. Function keys are used		
2. Shortcuts keys are properly used based on its functionality	2.1.Combination keys are used		

3. Typing technique is accurately applied based on typing speed.	3.1. Body posture is respected		
	3.2. Hand positioning is respected		
	3.3. Ergonomics is applied		

### **Answer for theoretical**

#### **Question1: What is a keyboard?**

- A) A device used to display images
- B) A device used to input text and commands into a computer
- C) A device used to output sound
- D) A device used to store data

**Answer: B) A device used to input text and commands into a computer**

#### **Question 2: What is the most common keyboard layout in English-speaking countries?**

- A) AZERTY
- B) QWERTY
- C) DVORAK
- D) QWERTZ

**Answer: B) QWERTY**

#### **Question 3: Which key is typically found directly below the 'Q' key in a QWERTY layout?**

- A) A
- B) W
- C) Z
- D) S

**Answer: A) A**

#### **Question 4: Which keyboard layout is primarily used in France?**

- A) QWERTY
- B) QWERTZ
- C) AZERTY
- D) DVORAK

**Answer: C) AZERTY**

**Question 5:** The primary home row keys for the left hand on a QWERTY keyboard are: A, S, D, and F.

**Question 6:** The key used to delete the character to the left of the cursor is called the **Backspace** key

**Question 7:** Typing speed is typically measured in **words** per minute (WPM).

**Question 8:** Ergonomics in typing involves developing **Typing speed** and **Accuracy** as well as to prevent strain and injury.

**Question 9:** To create a capital letter, you hold down the **shift** key while pressing the letter key.

**Question 10:** The function keys, such as F1, F2, etc., are located at the **top** of the keyboard.

**Question 11: Match the typing game to its description**

Answer	Typing Game	Description
1.....E	1. Nitro Type	<b>A.</b> Provides typing exercises with real-time error detection and correction.
2.....D	2. TypeRacer	<b>B.</b> A space shooting game where you destroy enemy ships by typing words
3.....C	3. TypingClub	<b>C.</b> Offers structured lessons and interactive games to improve typing skills
4.....B	4. ZType	<b>D.</b> An online multiplayer game where players race by typing passages from books, movies, and songs
5.....A	5. Keybr	<b>E.</b> A competitive racing game where your typing speed controls the speed of your car



### Further information to the trainer

Mobility Lab - Ultra-Slim Wired PC Keyboard Space Grey - French AZERTY USB connection:

[Amazon.com.be: Electronics](#)

QWERTY, QWERTZ, and AZERTY - All you need to know about them - [TypingDoneWell.com](#)

What is a Computer Keyboard? - Parts, Layout & Functions - Lesson | [Study.com](#)

What is a Key Combination? How to Use Them on Mobile Devices | [Lenovo US](#)

What is a keyboard layout? (with 90+ list of them) -[TypingDoneWell.com](#)

## Learning Outcome 2: Create web structures



### Indicative contents

**2.1. Setting up of text editor and web browser**

**2.2. Creating a web page in HTML**

**2.3. Managing page layout in HTML**

**2.4. Optimising web page in HTML**

### Key Competencies for Learning Outcome 2: Create web structures

Knowledge	Skills	Attitudes
<ul style="list-style-type: none"><li>• Description of website</li><li>• Definition of text editor</li><li>• Definition of web browser</li><li>• Introduction to HTML</li><li>• Description of HTML tags</li><li>• Description of web page layout</li></ul>	<ul style="list-style-type: none"><li>• Installing text editor</li><li>• Installing of web browser</li><li>• Developing page structure</li><li>• Developing a webpage using HTML tag categories</li><li>• Using hyperlink</li><li>• Using of HTML graphics</li><li>• Using HTML tags to organise page layout</li><li>• Using HTML tags to optimize webpage</li></ul>	<ul style="list-style-type: none"><li>• Be creative</li><li>• Be detail-oriented</li><li>• Be Problem solver</li><li>• Be Collaborative and having teamwork ability</li><li>• Have Attention to detail</li><li>• Have Passion for technology</li><li>• Have Critical thinking</li></ul>



**Duration: 70 hrs**



**Learning outcome 2 objectives:**

**By the end of the learning outcome, the trainees will be able to:**

1. Define correctly the term Webpage, Website, Web browser, Text editor, URL and Hyperlink as used in website development
2. Set up correctly the text editor and web browser according to the system requirements
3. Describe correctly html tags as used in web development
4. Create properly a web page using HTML tags in line with web structures
5. Manage properly page layouts in HTML according to the structures to be developed
6. Link correctly the different webpages by using hyperlinks as used in website development
7. Optimize accurately web page in HTML based on target devices



**Resources**

<b>Equipment</b>	<b>Tools</b>	<b>Materials</b>
<ul style="list-style-type: none"><li>• Computer</li><li>• Projector/smartboard</li></ul>	<ul style="list-style-type: none"><li>• Text editors</li><li>• web browsers</li></ul>	<ul style="list-style-type: none"><li>• Internet</li></ul>








**Advance Preparation:**

Before delivering this learning outcome, you are recommended to:

- Avail the Computer Lab/computers
- Avail the computers connected to the internet and electricity
- Avail text editors and web browsers setups.
- Prepare Videos to be used as didactic materials and website links to visit





## Indicative content 2.1: Setting up of text editor and web browser



Duration: 10 hrs



### Theoretical Activity 2.1.1: Description of website concepts



#### Notes to the trainer:

While delivering this content, small group can be used for describing Website concepts

- Avail sample domain name of existing website.



#### Key steps:

**While delivering this activity, pass through the following steps:**

**Step 1:** Introduce the activity and request trainees to respond to the following questions:

- What do you understand about the following terms used in web structure:
  - Website
  - Webpage
  - Web browser
  - Text editor
  - hyperlink
  - URL
- What are some Examples of text editor?

**Step 2:** Asks any trainees to write answers provided on flipchart/paper

**Step 3:** Asks trainees to discuss the provided answer and choose correct answers

**Step 4:** Provides expert view and clarifies ideas by using didactic materials

**Step 5:** Address any questions or concerns

**Step 6:** Ask trainees to read the key reading 2.1.1 in the trainee manual



#### Points to Remember

- There are Key terms related to the web structure like Webpage, Website, Web Browser, Text editor, URL and Hyperlink. play a crucial role in understanding and navigating the digital landscape.
- There are some examples of popular text editor like: Notepad++, VsCode, Sublime....



### **Practical Activity 2.1.2: Installation of text editor and web browser**



#### **Notes to the trainer**

- This activity should take place in a computer Lab where the trainees should install a text editor and web browser.
- While delivering this content, you are required to:
  - Avail of external storage with text editor and web browser set up file.
  - Avail computer connected to the internet



#### **Key steps:**

**While delivering this activity, pass through the following steps:**

**Step 1:** Introduce the topic and ask trainees to do the task described below:

As a web developer, you are asked to go into the computer lab to install a text editor and web browser.

**Step 2:** Explain the task and provide clear work instructions

**Step 3:** Demonstrate how you can install a text editor and web browser. While demonstrating, explain the steps to follow.

**Step 4:** Facilitate trainees in installation of a text editor and web browser.

**Step 5:** Verify whether the text editor and web browser are clearly installed.

**Step 6:** Ask trainees to read key reading 2.1.2.



#### **Points to Remember**

- Below are general steps for installing text editors on Windows from internet:

**Step1.**Download the Installer

**Step2.**Run the Installer

**Step 3.** Follow installation wizard



### Application of learning 2.1.

RWANDA TVET BOARD has offered laptops to The TVET Trainers, John trainer in Level three software development who got the laptop, as trainer in software wishes to have applications in his computer to help him to edit html and navigate different websites and search engine for making research. You are asked to help John to install a text editor and web browser in his computer.

#### Checklist

Elements	Indicator	Observation	
		Yes	No
Setting up environment is done properly	1.1. Installer is downloaded		
	1.2. Text editor is installed		
	1.3. Web Browser installed		



## Indicative content 2.2: Creating a web page in HTML



Duration: 25 hrs



### Theoretical Activity 2.2.1: Description of webpage in HTML



#### Notes to the trainer:

- While delivering this content, small group can be used for describing Web page in HTML
- The use of videos as didactic materials is required.



#### Key steps:

**While delivering this activity, pass through the following steps:**

**Step 1:** Engages trainees in group formulation.

**Step 2:** Introduce the activity and request trainees to respond to the following questions:

- Describe the different types of websites
- Explain the functions of websites based on their types

**Step 3:** Monitor the activity

**Step 4:** Ask trainees to present their findings.

**Step 5:** Provide the clarification on the trainee's response.

**Step 6:** Address any questions or concerns.

**Step 7:** Ask trainees to read the key reading 2.2.1 in the trainee manual



### Points to Remember

- Websites can be categorized into various types based on their purpose and functionality, there are different types of websites such as E-commerce website, Education Website, social media etc...
- Websites serve various functions depending on their purpose and the needs of their users. There are primary functions of a website such as: customer interaction, Information sharing, content publication customer support.



### Theoretical Activity 2.2.2: Introduction to HTML



#### Tasks:

- While delivering this content, small group can be used for introducing HTML
- The use videos as didactic materials are required.



#### Key steps:

**While delivering this activity, pass through the following steps:**

**Step 1:** Introduce the activity and request trainees to respond to the following questions:

- a. What do you understand about an Html?
- b. What is the basic structure of an HTML document?

**Step 2:** Asks any trainees to write answers provided on flipchart/paper.

**Step 3:** Asks trainees to discuss the provided answer and choose correct answers.

**Step 4:** Provides expert view and clarifies ideas by using didactic materials.

**Step 5:** Address any questions or concerns.

**Step6:** Ask trainees to read the key reading 2.2.2 in trainee manual.



### Points to Remember

- The basic structure of an HTML (HyperText Markup Language) document consists of several essential components that define the content and layout of a web page, there are its key elements like: `<!DOCTYPE html>`, `<html>`, `<head>`, `<title>Your Page Title</title>`, `<body>`.



### Theoretical Activity 2.2.3: Description of html tags



#### Tasks:

- While delivering this content, small group can be used for describing HTML tag
- The use videos and images as didactic materials are required.



#### Key steps:

**While delivering this content pass through the following steps:**

**Step 1:** Engages trainees in groups forming

**Step2:** Introduce the activity and request trainees to respond to the following questions:

- a. What do you understand about an HTML tag?
- b. What are the types of Html tags, provide the examples of html tags?
- c. Describe the Tag attributes

**Step3:** Monitor the activity

**Step4:** Ask trainee to write their findings on papers/flipchart

**Step6:** Provide the clarification to the trainees' responses.

**Step7:** Address any questions or concerns and Ask trainees to read the key reading 2.2.3 in the trainee manual.



### Points to Remember

- HTML tags can be classified into two types based on their functionality and purpose within a web document. There are two types of HTML tags such as: paired and unpaired tag.
- An HTML attribute is a piece of markup language used to adjust the behavior or display of an HTML element.



### Practical Activity 2.2.4: Developing first simple webpage



#### Task:

This activity should take place in a computer Lab where the trainees should develop simple webpage.

- While delivering this content, you are required to:
  - Avail computer with installed text editor and we browser.



#### Key steps:

**While delivering this content pass through the following steps:**

**Step 1:** Introduce the topic and ask trainees to perform the task below

```
<!DOCTYPE html>

<html><head> <title>First Simple Developed Website</title>

</head> <body> Hello software developer </body> </html>
```

**Step 2:** Demonstrate how to develop simple webpage. While demonstrating explain the steps to follow.

**Step3:** Asks trainees to develop simple webpage and monitor the procedures.

**Step 4:** Verify whether the HTML tags used to create a web page are clearly written.

**Step 5:** Ask trainees to read key reading 2.2.4.



### Points to Remember

- Developing a simple web page involves several steps. Here are steps develop your first web page:  
**Step1:** Open a Text Editor  
**Step2:** create a document  
**Step 3:** Setup a Document Structure  
**Step 4:** Choose an HTML Elements and type them  
**Step 5:** save file  
**Step 6:** To display your html contents through the web browser



### Theoretical Activity 2.2.5: Description of HTML tag categories



#### Tasks:

- While delivering this content, small group can be used for describing HTML tag categories.
- The use videos and illustrations as didactic materials is required.

#### While delivering this content pass through the following steps:

**Step 1:** Introduce the activity and request trainees to respond to the following questions:

- a) Can you explain the different categories of HTML Tags?
- b) What is the difference between <div> and <span> tags in HTML?

**Step 2:** Ask any trainees to write answers provided on flipchart/paper.

**Step 3:** Ask trainees to discuss the provided answer and choose correct answers.

**Step 4:** Provide expert view and clarifies ideas by using didactic materials.

**Step 5:** Address any questions or concerns and Ask trainees to read the key reading 2.2.5 in the trainee manual





### Points to Remember

- There are HTML tag categories effectively can help you create well-structured and visually appealing web pages like: Grouping tags (div, span), Table tags, Form tags, Heading tags, List tags, Media tags.



### Practical Activity 2.2.6: Developing webpage using HTML tag categories



#### Task:

- The activity should take place in a computer Lab where the trainees should apply HTML tag categories, save document (File) by using HTML extension and display contents using a web browser.
- While delivering this content, you are required to:
  - Avail computer with installed text editor and updated web browsers.



#### Key steps:

**While delivering this content pass through the following steps:**

**Step 1:** Introduce the topic and ask trainees do the task described below:

As a web developer, you are asked to go to the computer lab to develop web page using html tag categories

**Step 2:** Explain the task and provide clear work instruction

**Step 3:** Demonstrate how to develop a web page using html tag categories. While demonstrating, explain the steps followed.

**Step 4:** Asks trainees to develop webpage using html tag categories and monitor the procedures.

**Step 5:** Verify whether html tags categories (formatting tags, table tags, form tags, media tags, select tags, list tags...) used in developing web page are properly used.

**Step 6:** Ask trainees to read key reading 2.2.6.



### Points to Remember

- There are key steps to follow while developing a webpage using HTML Categories, those steps are:

Step1: Plan Your Webpage

Step2: Choose HTML Categories

Step3: Create the HTML Document Structure

Step4: Utilize Text-Level Elements

Step5: Structure Content with Block-Level Elements

Step6: Incorporate Lists and Links

Step7: Insert Images and Multimedia

Step8: Develop Forms for Interaction

Step9: Add Meta Information



### Theoretical Activity 2.2.7: Description of Hyperlinks



#### Tasks:

- While delivering this content, small group can be used for describing HTML hyperlinks.
- The use of videos and images as didactic materials is required.

#### While delivering this content pass through the following steps:

**Step 1:** Introduce the activity and request trainees to respond to the following questions:

- a. What do you understand by the term hyperlink?
- b. What are the default appearance styles of hyperlink on webpage?
- c. What are common types of hyperlinks?

**Step 2:** Ask any trainees to write answers provided on flipchart/paper.

**Step 3:** Ask trainees to discuss the provided answer and choose correct answers.

**Step 4:** Provide expert view and clarify ideas by using didactic materials.

**Step 5:** Address any questions or concerns and Ask trainees to read the key reading 2.2.7 in the trainee manual.



### Points to Remember

- On a webpage there are default styles that can provide appearance of link on webpage such as blue color as default color, underline which shows that it is clickable and Hover or visited state.
- Most used types of hyperlinks are: External, internal, bookmark, text links, image links and email links



### Practical Activity 2.2.8: Use of Hyperlinks



#### Task:

- The activity should take place in a computer Lab where the trainees should apply HTML hyperlinks.
- While delivering this content, you are required to:
  - Avail computer with internet connection.

**While delivering this content pass through the following steps:**

**Step 1:** Introduce the topic and ask trainees to do the task described below:

As a web developer, you are asked to go to the computer lab to develop more than one webpage and apply hyperlinks on both webpages.

**Step 2:** Explain the task and provide clear work instruction

**Step 3:** Demonstrate how to use hyperlinks on webpage. While demonstrating, explain the steps to be followed.

**Step 4:** Ask trainees to read key reading 2.2.8.

**Step 5:** Ask trainees to create hyperlinks on developed webpages and monitor the procedures.

**Step 6:** Verify whether HTML hyperlinks are well created and working properly.



### Points to Remember

- For creating an html hyperlink, you can pass through these steps:

Step1: Start with the <a> tag

Step2: Specify the destination URL

Step 3: Add link text

Step 4: Close the hyperlink with the closing </a> tag

Step 5: save and test your HTML Files



### Theoretical Activity 2.2.9: Description of HTML graphics



#### Tasks:

- While delivering this content, small group can be used for describing HTML graphics.
- The use videos and illustrations as didactic materials is required.

#### While delivering this content pass through the following steps:

**Step 1:** Introduce the activity and request trainees to respond to the following questions:

- a. What do you understand about canvas and SVG tags?
- b. Where do we apply the canvas and SVG tags?

**Step 2:** Ask any trainees to write answers provided on flipchart/paper.

**Step 3:** Asks trainees to discuss the provided answers and choose correct answers.

**Step 4:** Provides expert view and clarifies ideas by using didactic materials.

**Step 5:** Address any questions or concerns and Ask trainees to read the key reading 2.2.9 in the trainee manual.



### Points to Remember

- The HTML5 <canvas> element provides a versatile space for drawing and rendering graphics such as lines, curves, rectangles (boxes), circles and even text, using JavaScript.
- SVG (Scalable Vector Graphics) provides various methods for creating and manipulating graphics such as: complex shapes and lines and drawing paths
- The <canvas> and <svg> tags are both used for creating graphics on the web, but they are applied in different scenarios based on their capabilities and use cases



### Practical Activity 2.2.10: Use of HTML graphics



#### Task:

- The activity should take place in a computer Lab where the trainees should apply HTML Graphics
- While delivering this content, you are required to:
  - Avail computer with internet connection.

#### While delivering this content pass through the following steps:

**Step 1:** Introduce the topic and ask trainees do the task described below:

As a web developer, you are asked to go to the computer lab to Create a web page which will display a yellow rectangle using canvas tag and blue circle using svg tag.

**Step 2:** Explain the task and provide clear work instruction

**Step 3:** Demonstrate how to use canvas and SVG on webpage. While demonstrating, explain the steps to be followed.

**Step 4:** Asks trainees to create webpages and include Graphics and monitor the procedures.

**Step 5:** Verify whether html graphics are well created.

**Step 6:** Ask trainees to read key reading 2.2.10.



### Points to Remember

- To write an SVG tag in HTML, start with the <svg> tag, set its dimensions with width and height, add desired SVG elements like shapes or text within the tags, customize their appearance using CSS or attributes, then save and test the HTML file in a web browser.
- Creating a graphics using canvas follow the following steps:

**step1.** Start with the <canvas> tag:

**step2.** Specify the dimensions of the canvas:

**step 3.** Add fallback content

**step 4.** Save and test your HTML file:



### Application of learning 2.2.

XYZ Is company which sales different furniture for home use and decoration, in order to competitive on global market wishes to advertise their products through social network platform to attract more customers, after collecting different data from clients they decide to use e-commerce website which will have the following features:

Develop an e-commerce website that includes hyperlinks for navigation, HTML5 Canvas graphics for interactive elements, and a structured HTML layout using various HTML tags and categories.

#### Requirements:

- **Homepage (index.html):** Introduction and navigation menu.

<b>Product</b> <b>Page(products.html):</b> List of products with descriptions and images. <b>Contact</b> <b>Page(contact.html):</b> Contact form for customer inquiries. As Website developer you are hired to help XYZ company to have the desired e-commerce website as describe above. <b>Elements</b>	Indicator	Observation	
		Yes	No
Webpages are properly created	Page structure tags are used		
	Formatting tags are used		
	Table tags are used		
	Form tags are used		
	Select tags are used		
	List tags are used		
	Media tags are incorporated		
	HTML Comments are used		
	Grouping tags are applied		
	Hyperlinks are applied		
	HTML graphics tags are used		



## Indicative content 2.3: Managing page layout in HTML



Duration: 20 hrs



### Theoretical Activity 2.3.1: Description of page layout in HTML



#### Notes to the trainer:

- While delivering this content, small group can be used for describing page layout in HTML.
- The use images/videos as didactic materials are required.
- Avail pictures of existing website to highlight page layout.



#### Key steps:

**While delivering this activity, pass through the following steps:**

**Step 1:** Introduce the activity and request trainees to respond to the following questions:

- a. What do you understand about term Page Layout in web development?
- b. What are the basics parts of webpage?

**Step 2:** Ask trainees to read the key reading 2.3.1 in the trainee manual.

**Step 3:** Asks any trainees to write answers provided on flipchart/Paper

**Step 4:** Asks trainees to discuss on the provided answer and choose correct answers.

**Step 5:** Provides expert view and clarifies ideas by using didactic materials.

**Step 6:** Address any questions or concerns.





### Points to Remember

- Page layout refers to the arrangement and organisation of elements on a web page
- A typical web page consists of several parts that work together to create a cohesive user experience. Here is a different part of a webpage: Header, Navigation Menu, Content Sections, Sidebar and Footer.



### Practical Activity 2.3.2: Use of html tag to Organize page layout



#### Notes to the trainer

- The activity should take place in a computer Lab where the trainees should apply HTML tags to organize page layout.
- While delivering this content, you are required to:
  - Avail computer with installed text editor and web browser.



#### Key steps:

**While delivering this activity, pass through the following steps:**

**Step 1:** Introduce the topic and ask trainees to do the task described below:

We use different html tags to organize a webpage in order to create an attractive webpage, you are asked to use those html tags as were described in key reading 2.3.1.

**Step 2:** Explain the task and provide clear work instruction.

**Step 3:** Demonstrate how to use html tags to organize page layout. While demonstrating, explain the steps followed.

**Step 4:** Asks trainees to use html tags to organise page layout and monitor the procedures.

**Step 5:** Verify whether html tags used to organise page layout are clearly written.

**Step 6:** Ask trainees to read key reading 2.3.2.



### Points to Remember

- Page layout refers to the arrangement and organisation of elements on a web page. It involves structuring and positioning various components such as headers, navigation menus, content sections, sidebars, footers, and more
- Benefits of a good page layout:
  - Improved user experience
  - Enhanced brand recognition
  - Increased engagement
  - Better conversion rates
- Key parts of a webpage
  - Header
  - Navigation Menu
  - Content Sections
  - Sidebar
  - Footer



### Application of learning 2.3.

You have been hired as a web developer for a local community centre that is planning to launch a new website. The community centre offers various services, including educational programs, fitness classes, community events, and volunteer opportunities. They want a modern, easy-to-navigate website to provide information about their services and events to the community.

You are asked to create an HTML file that includes all the specified sections. Ensure that your HTML structure is well organized. Use appropriate HTML tags to create a clear and organized webpage layout.

Element	Indicator	Observation	
		Yes	No
Webpages are properly organized	1.1. Semantic HTML Tags are used		
	1.2. Navigation menu is Created		
	1.3. Contents are arranged using containers		
	1.4. Heading tags are used		

	1.5. Multimedia contents are embedded		
	1.6. Forms are implemented		



## Indicative content 2.4: Optimising web page in HTML



Duration: 15 hrs



### Theoretical Activity 2.4.1: Description of web page optimisation



#### Notes to the trainer:

- While delivering this content, small group can be used for describing web page optimisation.
- The use videos as didactic materials are required.

#### While delivering this activity, pass through the following steps:

**Step 1:** Introduce the activity and request trainees to respond to the following questions:

- a. What do you understand about web Optimization?
- b. Explain the benefit of applying SEO on webpage
- c. List the tags used to optimise web page
- d. Describe web accessibility

**Step 2:** Asks any trainees to write answers provided on flipchart/paper.

**Step 3:** Asks trainees to discuss the provided answer and choose correct answers.

**Step 4:** Provides expert view and clarifies ideas by using didactic materials.

**Step 5:** Address any questions or concerns and Ask trainees to read the key reading 2.4.1 in the trainee manual.



#### Points to Remember

- Web optimization involves improving various aspects of a website, such as speed, performance, and user experience, to ensure it loads quickly, ranks well in search engines
- The main benefits of SEO include improved visibility, cost-effectiveness, and enhanced credibility and trust.
- Most used html tags for Search engine optimization are: title tag, meta description tag, headings (H1 — H6), Title, meta tags, HTML5 semantic tags, image Alt attribute.
- Within application of web accessibility, people with disabilities can perceive, understand, navigate, and interact with the Web.



### Practical Activity 2.4.2: Use html to Optimize webpage



#### Notes to the trainer

- The activity should take place in a computer Lab where the trainees should apply HTML tags to optimize webpage.
- While delivering this content, you are required to:
  - Avail computer with installed text editor and web browser.
  - Prepare Webpage to optimize



#### Key steps:

**While delivering this activity, pass through the following steps:**

**Step 1:** Introduce the topic and ask trainees to do the task described below:

Use different html tags to optimize a webpage in order to improve performance of website across various areas such as web traffic and usability, you are asked to use those html tags as were described in key reading 2.4.1 and optimize a webpage.

**Step 2:** Explain the task and provide clear work instruction.

**Step 3:** Demonstrate how to use html tags to optimize webpage. While demonstrating, explain the steps followed.

**Step 4:** Asks trainees to use html tags to optimize a webpage and monitor the procedures.

**Step 5:** Verify whether html tags used to optimize webpage are correctly written.

**Step 6:** Ask trainees to read key reading 2.4.2.



#### Application of learning 2.4

You work for an e-commerce company that sells a variety of products online. The company's management has identified the need to optimise the product pages to improve user experience and increase search engine visibility. Your task is to optimize this website for both performance and accessibility.

You will need to:

- Improve the loading speed.
- Ensure the website is accessible to users with disabilities.
- Optimize the website for search engines optimization (SEO).

Elements	Indicator	Observation	
		Yes	No
Webpage is performed successful	1.1. Semantic HTML tags are used		
	1.2. Image is optimized		
	1.3. Meta Description are used		
	1.4. Responsive design is implemented		



## Learning outcome 2 end assessment

### Theoretical assessment

**Choose the correct:**

**Q1: What is a webpage?**

- A. A collection of related web pages located under a single domain name
- B. A software application for accessing information on the World Wide Web
- C. A document on the World Wide Web that is identified by a unique URL
- D. A tool used for writing and editing text and code

**Q2: What is a website?**

- A. A single document on the World Wide Web
- B. A collection of related web pages located under a single domain name
- C. A tool used for browsing the internet
- D. The address used to access a webpage

**Q3: What is a web browser?**

- A. A document on the World Wide Web that is identified by a unique URL
- B. A collection of related web pages located on server and delivered to the client
- C. A software application for accessing and viewing information on the World Wide Web
- D. A tool used for reading music and video on computer displays

**Q4: What is a text editor?**

- A. A document written using symbols and graphics
- B. A collection of software that are used to write complicated scripts in notepad
- C. A tool used for drawing graphics on webpage the internet
- D. A tool used for writing and editing text and code

**Q5: What is a hyperlink?**

- A. A tool used for writing and editing text and code
- B. A collection of related web pages located under a single domain name
- C. The address used to access a webpage
- D. A reference or navigation element in a document that links to another section of the same document or to another document

**Question 6: Which of the following is not a web browser?**

- A) Safari
- B) Edge
- C) Atom
- D) Opera

**Question 7: When installing software from a storage drive, what is the first step?**

- A) Open a web browser
- B) Insert the storage drive into the computer and locate setup
- C) Run an antivirus scan
- D) Open the command prompt

**Complete the sentence below with appropriate term**

**Question 8: Search Engine Optimization (SEO)** refers to the practice of optimizing a website to improve its ..... and ranking on search engine results pages (SERPs) such as Google, Bing, and Yahoo.

**Question 9:** Web accessibility ensures that websites and web applications can be used by people with various .....

**Question 10:** HTML (HyperText Markup Language) plays a crucial role in web accessibility by providing the structural foundation that ensures content is accessible to all including those with disabilities.

**Match the questions in column A to its corresponding in column B**

ANSWER	COLUMN A Accessibility testing workflow	COLUMN B How it is done
1.....	1.Run Automated Tests	A. Re-test to ensure the issues are resolved and no new issues have been introduced
2.....	2.Conduct Manual Tests	B. Use the W3C Markup Validation Service to check your HTML for compliance.
3.....	3.Perform User Testing	C. Recruit users with disabilities to test your site and provide feedback.
4.....	4. Validate Against Standards	D. Navigate your site using only the keyboard to ensure all interactive elements are accessible.



5.....	5. Implement Improvements	E. Scan your site with Axe DevTools for more detailed findings.
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### Answer for theoretical assessment

Choose the correct:

**Q1: What is a webpage?**

- A. A collection of related web pages located under a single domain name
- B. A software application for accessing information on the World Wide Web
- C. A document on the World Wide Web that is identified by a unique URL
- D. A tool used for writing and editing text and code

**Answer:**

**C. A document on the World Wide Web that is identified by a unique URL**

**Q2: What is a website?**

- A. A single document on the World Wide Web
- B. A collection of related web pages located under a single domain name
- C. A tool used for browsing the internet
- D. The address used to access a webpage

**Answer:**

**B. A collection of related web pages located under a single domain name**

**Q3: What is a web browser?**

- A. A document on the World Wide Web that is identified by a unique URL
- B. A collection of related web pages located on server and delivered to the client
- C. A software application for accessing and viewing information on the World Wide Web
- D. A tool used for reading music and video on computer displays

**Answer:**

**C. A software application for accessing and viewing information on the World Wide Web**

**Q4: What is a text editor?**

- A. A document written using symbols and graphics
- B. A collection of software that are used to write complicated scripts in notepad
- C. A tool used for drawing graphics on webpage the internet

D. A tool used for writing and editing text and code

**Answer:**

**D. A tool used for writing and editing text and code**

**Q5: What is a hyperlink?**

A. A tool used for writing and editing text and code

B. A collection of related web pages located under a single domain name

C. The address used to access a webpage

D. A reference or navigation element in a document that links to another section of the same document or to another document

**Answer:**

**D. A reference or navigation element in a document that links to another section of the same document or to another document**

**Question 6: Which of the following is not a web browser?**

A) Safari

B) Edge

C) Atom

D) Opera

**Answer:**

**C) Atom**

**Question 7: When installing software from a storage drive, what is the first step?**

A) Open a web browser

B) Insert the storage drive into the computer and locate setup

C) Run an antivirus scan

D) Open the command prompt

**Answer:**

**B) Insert the storage drive into the computer and locate setup**

**Complete the sentence below with appropriate term**

**Question 8: Search Engine Optimization (SEO)** refers to the practice of optimizing a website to improve its **Visibility** and ranking on search engine results pages (SERPs) such as Google, Bing, and Yahoo.

**Question 9:** Web accessibility ensures that websites and web applications can be used by people with various **disabilities**

**Question 10:** HTML (Hypertext Markup Language) plays a crucial role in web accessibility by providing the structural foundation that ensures content is accessible to all **users**, including those with disabilities.

**Match the questions in column A to its corresponding in column B**

ANSWER	COLUMN A Accessibility testing workflow	COLUMN B How it is done
1..A	1.Run Automated Tests	A. Use Lighthouse in Chrome DevTools to get an initial accessibility report
2.... D	2.Conduct Manual Tests	B. Use the W3C Markup Validation Service to check your HTML for compliance.
3...C	3.Perform User Testing	C. Recruit users with disabilities to test your site and provide feedback.
4... B	4. Validate Against Standards	D. Navigate your site using only the keyboard to ensure all interactive elements are accessible.
5.....	5. Implement Improvements	E. Scan your site with Axe DevTools for more detailed findings.

### Practical assessment

BZM Company Ltd. is a construction company in Kigali city with many customers, but they have recently discovered that the number of their customers is decreasing because many of the customers do not have enough information about the company, so the company manager decided to hire a web developer to build for them the structure of a website that will be used to make available the company's information including its daily activities, company profile, contacts, and any other information that the company manager deems necessary. You are tasked to design a web structure for BZM company.

### Checklist

Elements	Indicators	Observation	
		Yes	No
Text editor and web browser are properly settled up	1.1 Text editor is Installed		
	1.2. Web browser is installed		
web page in HTML is clearly	2.1. Webpage using HTML tag categories is developed		

created			
	2.2. HTML tags to organise page layout are used		
	2.3. Hyperlinks are used		
webpage in HTML is Optimised	3.1 Meta tags is used		
	3.2. Title tags is used		
	3.3. Heading is used		



#### Further information to the trainer

15 HTML Tags Essential for SEO (link-assistant.com)

<https://web.dev/learn/accessibility/aria-html>

Meta Tags: What They Are & How to Use Them for SEO (semrush.com)

The Best Guide to HTML Tags (simplilearn.com)

Types of web browsers in 2024: A quick overview | NordVPN

What Are Header Tags and How to Use Them to Improve SEO (wix.com)

What is a Website? [Definition] Essential Elements and Types Explained (monovm.com)

What Is HTML? Hypertext Markup Language Basics for Beginners (hostinger.com)

## Learning Outcome 3: Style web elements



### Indicative contents

- 3.1. Introduction to CSS
- 3.2. Creating CSS files
- 3.3. Applying typography on web page
- 3.4. Setting media query rules

### Key Competencies for Learning Outcome 3: Style web elements

Knowledge	Skills	Attitudes
<ul style="list-style-type: none"> <li>Definition of CSS</li> <li>Description types of CSS</li> <li>Description of typography</li> <li>Description of media query</li> <li>Identification of basic structure and syntax of CSS</li> </ul>	<ul style="list-style-type: none"> <li>Creating CSS syntax</li> <li>Using different CSS style types</li> <li>Using CSS display and positioning properties</li> <li>Using CSS box model</li> <li>Using CSS scripts for typography</li> <li>Using breakpoint</li> </ul>	<ul style="list-style-type: none"> <li>Be critical thinker</li> <li>Be creative</li> <li>Be detail-oriented</li> <li>Have Passion for technology</li> </ul>



**Duration: 60 hrs**

#### Learning outcome 3 objectives:




**By the end of the learning outcome, the trainees will be able to:**

1. Identify clearly the basic structure and syntax of CSS file as used in web development
2. Apply correctly the basic CSS rules to style HTML elements based on its function
3. Implement successful responsive typography techniques to ensure text looks good on various devices and screen sizes.
4. Apply correctly media query rules to create responsive layouts that adjust flexibly to various screen sizes.



#### Resources

Equipment	Tools	Materials
-----------	-------	-----------

<ul style="list-style-type: none"> <li>•Computer</li> <li>•Projector/smartboard</li> </ul>	<ul style="list-style-type: none"> <li>•Text editors</li> <li>•web browsers</li> </ul>	<ul style="list-style-type: none"> <li>• Internet</li> </ul>
 <p><b>Advance Preparation:</b></p> <p><b>Before delivering this learning outcome, you are recommended to:</b></p> <ul style="list-style-type: none"> <li>• Avail computers with Text editor and web browsers installed and working properly</li> <li>• Avail HTML Files to style</li> <li>• Prepare Videos and Images to be used as didactic materials</li> </ul>		





## Indicative content 3.1: Introduction to CSS



Duration: 10 hrs



### Theoretical Activity 3.1.1: Description of CSS



#### Notes to the trainer:

- While delivering this content, small group can be used for describing CSS
- The use of videos as didactic materials is required.



#### Key steps:

**While delivering this activity, pass through the following steps:**

**Step 1:** Introduce the activity and request trainees to respond to the following questions:

- a. What do you understand about CSS?
- b. Explain the utility of CSS.
- c. Describe types of CSS.

**Step 2:** Ask any trainees to write answers provided on flipchart/paper.

**Step 3:** Involve trainees to discuss the provided answers and choose correct answers.

**Step 4:** Provide expert view and clarifies ideas by using didactic materials.

**Step 5:** Address any questions or concerns and Ask trainees to read the key reading 3.1.1 in the trainee manual.



### Points to Remember

- Primarily role of css is to format and structuring web elements CSS provides Key Features(utility) such as:
  - ✓ Separation of Content and Presentation
  - ✓ Reusability
  - ✓ Improved Accessibility
  - ✓ Responsive Design
  - ✓ Design Flexibility
  - ✓ Styling and Layout
  - ✓ Performance
- There are three basic types of css according to where it is placed in document, those types are:
  - ✓ Internal or embedded
  - ✓ External
  - ✓ Inline



## Indicative content 3.2: Creating CSS files



Duration: 20 hrs



### Theoretical Activity 3.2.1: Description of CSS files



#### Notes to the trainer:

- While delivering this content, small group can be used for describing CSS
- The use of videos as didactic materials is required.



#### Key steps:

**While delivering this activity, pass through the following steps:**

**Step 1:** Introduce the activity and request trainees to respond to the following questions:

- a. What do you understand by the syntax of CSS?
- b. Describe the way to use different types of CSS.
- c. What do you understand by CSS box model?
- d. What are the visual rules to consider when working with CSS?
- e. Describe CSS Display and positioning?

**Step 2:** Asks any trainees to write answers provided on flipchart/paper.

**Step 3:** Asks trainees to discuss the provided answer and choose correct answers.

**Step 4:** Provides expert view and clarifies ideas by using didactic materials.

**Step 5:** Address any questions or concerns and Ask trainees to read the key reading 3.2.1 in the trainee manual



#### Points to Remember

- CSS file is document written using text editor and saved within .css file extensions
- There are main three ways to apply css in web documents such as using inline, internal and external
- CSS Visual Rules encompass all the key properties and techniques that influences the appearance and layout of elements on webpage, here are Key types of visual rules in

CSS: Layout, color and Background, typography, Borders and Outlines, spacing, shadows, visibility and opacity, transform and transition, overflow, z-index.

- The CSS box model is essentially a box that wraps around every HTML element. It consists of: content, padding, borders and margins.
- The commonly used values for the display property are as follows:
  - Inline
  - block
  - inline-block
  - flex
  - grid
  - none
- In CSS, element positioning refers to the placement and arrangement of HTML elements on a webpage. Those elements of CSS positioning are: Relative, Absolute, Fixed Sticky, Static.



### **Practical Activity 3.2.2: Creation of CSS files**



#### **Notes to the trainer**

- While delivering this content, small group can be used for describing CSS Files
- The use of videos as didactic materials is required.



#### **Key steps:**

**While delivering this activity, pass through the following steps:**

**Step 1:** Introduce the topic and ask trainees do the task described below:

As web developer, you are asked to go to the computer lab to create CSS file by applying syntax and formatting html elements using CSS.

**Step 2:** Explain the task and provide clear work instruction (Task, PPE, Time allocated)

**Step 3:** Demonstrate how to create CSS File. While demonstrating, explain the steps to follow while creating css file.

**Step 4:** Asks trainees to create their owner CSS file and monitor the procedures.

**Step 5:** Verify whether steps of creating CSS File are correctly followed.

**Step 6:** Ask trainees to read key reading 3.2.2.



### Points to Remember

- The commonly used values for the display property are like: Inline, block, inline-block, flex, grid, none...
- In CSS, element positioning refers to the placement and arrangement of HTML elements on a webpage. Those elements of CSS positioning are: Relative, Absolute, Fixed Sticky, Static.
- To create a separate css file follow these steps:
  1. Open a Text Editor
  2. Create a New File
  3. Save the File with a **.css** Extension and choose save type as all types or css
  4. Write Your CSS Code
  5. Link the CSS File to Your HTML Document
  6. Save and Test



### Application of learning 3.2.

You've been hired as a frontend developer for a popular blogging platform. Your task is to enhance the platform's user interface and improve the overall user experience through effective use of CSS (use Font, Text Colors, background colours, Opacity, Background image, Display, positioning and CSS Box model).

Elements	Indicators	Observation	
		Yes	No
CSS File is correctly created	1.1. Text editor is opened and used		
	1.2. File is created and saved with extension .css		
	1.3. CSS File is linked with HTML file and tested		
	1.4. Font is customized		
	1.5. Background properties are applied		
	1.6. Opacity property is applied		
	1.7. Display property is applied		
	1.8. Positioning property is applied		
	1.9. Box model concepts is applied		



### Indicative content 3.3: Applying Typography



Duration: 15 hrs



#### Theoretical Activity 3.3.1: Description of typography



#### Notes to the trainer:

- While delivering this content, small group can be used for describing typography on web page.
- The use of videos or existing website as didactic materials is required.



#### Key steps:

**While delivering this activity, pass through the following steps:**

**Step 1:** Introduce the activity and request trainees to respond to the following questions related to typography:

- a. What do you understand by term typography?
- b. What are scripts used for typography?

**Step 2:** Asks any trainees to write answers provided on flipchart/paper.

**Step 3:** Asks trainees to discuss the provided answers and choose correct answers.

**Step 4:** Provides expert view and clarifies ideas by using didactic materials.

**Step 5:** Address any questions or concerns and Ask trainees to read the key reading 3.3.1 in the trainee manual



#### Points to Remember

- Typography is the art of arranging letters and text in a way that makes the copy readable, clear, and visually appealing to the reader.
- There are two main groups of CSS properties that control typography style: font and text.
- This activity should take place in a computer Lab where the trainees should apply typography, CSS scripts for typography and HTML tags required for typography.
- While delivering this content, you are required to:
  - Avail computers with installed text editor and web browser
  - Avail computer connected to the internet



### Key steps:

**While delivering this activity, pass through the following steps:**

**Step 1:** Introduce the topic and ask trainees do the task described below:

- Create a webpage for a magazine which must have intuitive navigation, responsive Design, clear Layout and Visual Appeal and, on the magazine, you have to embed other website for your choice.

**Step 2:** Explain the task and provide clear work instruction.

**Step 3:** Demonstrate how to use typography on a web page. While demonstrating, explain the steps followed.

**Step 4:** Asks trainees to use typography on a web page and monitor the procedures.

**Step 5:** Verify whether CSS scripts for typography, HTML tags required for typography, Embed and position project object in web page content used in typograph are clearly used.

**Step 6:** Ask trainees to read key reading 3.3.2



### Points to Remember

- By following these steps (1. Choose a Typography Script, 2. Import the Font, 3. Link the Font in Your HTML, 4. Apply the Font Using CSS, 5. Customize Typography Settings and 6. Test on Different Devices), you will be able to effectively incorporate typography scripts into your webpage, enhancing its visual appeal and readability.



### Application of learning 3.3.

**AGASARO MAGAZINE** Wishes to publish an article, they want you as web developer to Create a visually appealing magazine article layout that emphasizes the principles of typography, including font and typeface, contrast, consistency, white space, alignment, and color. Use CSS pseudo-elements: first-letter and first-line to enhance the design, your task is to design a one-page magazine article on a topic of your choice (e.g., travel, technology, fashion)

## Checklist

Elements	Indicators	Observation	
		Yes	No
CSS File is correctly created	1.1 Text editor is opened and used		
	1.2 File is created and saved with extension .css		
	1.3. CSS is File is linked with HTML file and tested		
	1.4. Font is customized		
	1.5. Background properties are applied		
	1.6. Opacity property is applied		
	1.7. Display property is applied		
	1.8. Positioning property is applied		
	1.9. Box model concepts is applied		





## Indicative content 3.4: Setting media query rules



Duration: 15 hrs



### Theoretical Activity 3.4.1: Description of CSS media query rules



#### Notes to the trainer:

- While delivering this content, a small group can be used for describing media query rules.
- The use of videos as didactic materials is required.



#### Key steps:

While delivering this activity, pass through the following steps:

**Step 1:** Introduce the activity and request trainees to respond to the following questions:

- a) What do you understand about media queries?
- b) Identify the device types and corresponding media types for media queries

**Step 2:** Ask any trainees to write answers provided on flipchart/paper.

**Step 3:** Asks trainees to discuss the provided answer and choose correct answers.

**Step 4:** Provides expert view and clarifies ideas by using didactic materials.

**Step 5:** Address any questions or concerns and Ask trainees to read the key reading 3.4.1 in the trainee manual



#### Points to Remember

- Device types refer to the different categories of devices that can display web content. Understanding these device types helps developers create responsive designs that adapt to various screens and media. There are the device types used in (CSS3): Screen, Print, Speech, All, handheld
- Media queries in CSS are a powerful feature that allows you to apply styles based on the characteristics of the device or viewport displaying the content. There are common features of media queries: Width and height, Orientation, Resolution, Aspect-ratio.



### Practical Activity 3.4.2: Use of CSS media query



#### Notes to the trainer

- This activity should take place in a computer Lab where the trainees should use Media Query rules.
- While delivering this content, you are required to:
  - Avail computers with installed text editor and web browser
  - Avail devices with different screen sizes



#### Key steps:

**While delivering this activity, pass through the following steps:**

**Step 2:** Introduce the topic and ask trainees do the task described below:

- Create responsive and adaptive webpage that provide an optimal user experience across a wide range of devices and conditions.

**Step 2:** Explain the task and provide clear work instruction.

**Step 3:** Demonstrate how to use different media Query rules on a web page. While demonstrating, explain the steps followed.

**Step 4:** Asks trainees to apply media query rules on a web page and monitor the procedures.

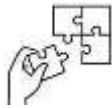
**Step 5:** Verify whether media queries are used according to the contents

**Step 6:** Ask trainees to read key reading 3.4.2.



#### Points to Remember

- To use CSS media queries, start by writing your base styles for all devices, then identify breakpoints where the design needs to change. Add media queries using the @media rule to apply different styles based on screen size, orientation, or resolution. Combine multiple conditions if needed, test the media queries across various devices, and maintain a mobile-first approach to ensure a responsive and optimized design.



#### Application of learning 3.4.

YNV Store is company which sells electronic devices through an online market, they have a website that use to publish those products but they have problems about the display of visual text and appealing contents across different devices, they want you to apply media queries rules to enhance the functionality of their website.

Elements	Indicators	Observation	
		Yes	No
Setting media query rules are applied	1.1. css are written using media query		
	1.2. Breakpoint are applied		
	1.3. @media rules is used		



### Learning outcome 3 end assessment

#### Written assessment

**Question 1. What is the primary purpose of CSS in web development?**

- a) To structure the content of a web page
- b) To add interactive functionality to a web page
- c) To separate the content of a web page from its presentation
- d) To store data in a web page

**Question 2. Which of the following is NOT a type of CSS?**

- a) Inline CSS
- b) Internal CSS
- c) External CSS
- d) Exported CSS

**Question 3. Which of the following methods is used to import an external CSS file within a CSS file?**

- a) @link
- b) @include
- c) @import
- d) @stylesheet

**Question 4. Which method is used to apply CSS to an HTML document by linking to an external stylesheet file?**

- a) Inline CSS
- b) Internal CSS
- c) External CSS
- d) Embedded CSS

**Question 5. Which of the following is NOT a valid value for the display property?**

- a) Inline
- b) Block
- c) Flex
- d) Inheritance

**Question 6. Which of the following concepts includes margins, borders, padding, and the actual content in its definition?**

- a) CSS Flexbox
- b) CSS Grid Layout
- c) CSS Box Model
- d) CSS Positioning

**Question 7. Complete the following sentence with appropriate terms**

- a) The art and technique of arranging type to make written language legible, readable, and appealing when displayed is known as \_\_\_\_\_
- b) There are two main groups of CSS properties that control typography style: ----- and -----
- c) Use ----- link pseudo-classes to create font styles for each link state.
- d) The -----tag defines a rectangular region within the document in which the browser can display a separate document, including scrollbars and borders.

### **Practical assessment**

Fashion Hub is an online store that sells a wide range of clothing items, including dresses, shirts, and accessories. They want to hire a Front-End developer to develop a website that includes media queries for responsiveness across different devices. That website should provide an optimal user experience on various devices, including desktop computers, tablets, and smartphones. The website should adapt its layout and content presentation based on the user's device.

Apply your knowledge of typography, media queries, and web optimization to create a fully functional, responsive webpage that demonstrates your ability to style web elements, create a web structure, and optimize the page for different devices and screen sizes so that it can satisfy the requirements of Fashion Hub

## Checklist

Elements	Indicators	Observation	
		Yes	No
Structuring a webpage layout	1.1 Header is created		
	1.2. Main Content Area is created		
	1.3. Sidebar is created		
	1.4. Footer is created		
Styling web elements	1.5. Css file is created		
	1.6. Typography Styles are applied		
SEO Optimization	2.1. semantic HTML elements are used		
	2.2. Meta tags are correctly included		
	2.3. Accessibility is considered by applying <b>alt</b> attributes for images and ensuring sufficient colour contrast.		
Media Queries	3.3. Styles for screens wider than 1024px are applied		
	3.4. Styles for screens between 768px and 1024px are applied		
	3.5. Styles for screens narrower than 768px are applied		
	3.6. Layout adaptation to different screen sizes is ensured		
	3.7. adjustable font sizes are applied		
	3.8. Hiding/showing elements are applied		



### Further information to the trainer

A complete guide to CSS Media Query | Browser Stack

A complete guide to CSS Media Query | BrowserStack

A complete guide to CSS Media Query | BrowserStack

CSS Display Property (With Examples) (programiz.com)

CSS Position Relative vs Position Absolute | Kolosek

CSS Syntax (2024 Tutorial & Examples) | BrainStation®

CSS Syntax (w3schools.com)

<https://blog.hubspot.com/website/website-typography>

Including CSS: External Styles | Basic Introduction (codefinity.com)

Using media queries - CSS: Cascading Style Sheets | MDN (mozilla.org)



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