Assignment

Topic: Getting Started

Q1. Why do we start learning a programming language with “Hello, World!”.

Ans: Programmers can quickly verify that their development environment is correctly configured and that they have successfully grasped the basics of a new programming language. Furthermore, “Hello World” serves as a foundation for building more complex programs.

Q2. How is the use of comments and how do you write comments in HTML.

Ans: An HTML comment is used to add explanatory notes to the markup or to prevent the browser from interpreting specific parts of the document.

Comments start with the string <!-- and end with the string -->, generally with text in between. This text cannot start with the string > or ->, cannot contain the strings --> or --!>, nor end with the string <!-, though <! is allowed.

Syntax

html

<!-- Comment -->

Q3. What are elements, tags, and attributes, and the difference between them.

Ans: 1. Elements

- An element is a complete building block of an HTML document.
- It consists of a start tag, content, and an end tag (in most cases).
- Elements define the structure and meaning of the content. For example, they can represent headings, paragraphs, links, images, etc.

Example of an element:

html

Copy

This is a paragraph.

Run HTML

- Here, is the start tag, This is a paragraph. is the content, and is the end tag. Together, they form a paragraph element.

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2. Tags

- Tags are the markers used to define the beginning and end of an element.
- Tags are enclosed in angle brackets (< and >).

- There are two types of tags:
    - Start tag: Opens an element (e.g.,).
    - End tag: Closes an element (e.g.,).

Example of tags:

html

Copy

<h1>This is a heading</h1>

Run HTML

- <h1> is the start tag, and </h1> is the end tag.

Some elements, like <img> or <br>, are self-closing and do not require an end tag.

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3. Attributes

- Attributes provide additional information about an element.
- They are always specified in the start tag of an element.
- Attributes come in name-value pairs, like name="value".

Example of attributes:

html

Copy

Visit Example

Run HTML

- Here, href and target are attributes of the <a> (anchor) element.

- href specifies the link's destination, and target specifies where to open the link.

Key Differences

Concept	Description	Example
Element	A complete unit, including start tag, content, and end tag.	This is a paragraph.
Tag	The markers used to define the start and end of an element.	and
Attribute	Provides additional information about an element, specified in the start tag.	href="https://www.example.com"

Summary

- Elements are the complete structures that define content.
- Tags are the opening and closing markers for elements.
- Attributes are additional properties added to the start tag of an element to modify or enhance its behavior.

Q4. Briefly explain what HTML entities are.

Ans: In HTML, there are reserved characters, such as < (less than) and > (greater than), which are used to define tags like . However, if you use these reserved characters within

the content, browsers may misinterpret them as part of the tags.

HTML Entities were introduced to avoid this. Reserved characters should be replaced with their corresponding entities. For example:

- < (less than) = <
- > (greater than) = >

Syntax:

&entity_name; or & #entity_number;

Symbols	Description	Entity name	Entity Number
	non-breaking space		
<	less than	<	<
®	registered trademark	®	®
©	copyright	©	©
€	euro	€	€
¥	yen	¥	¥
£	pound	£	£

Symbols	Description	Entity name	Entity Number
¢	cent	¢	¢
“	double quotation mark	"	"
&	ampersand	&	&
>	greater than	>	>
∂	PARTIAL DIFFERENTIAL	∂	∂
∃	THERE EXISTS	∃	∃
∅	EMPTY SETS	∅	∅
∇	NABLA	∇	∇
∈	ELEMENT OF	∈	∈
∉	NOT AN ELEMENT OF	∉	∉
+	PLUS SIGN	+	+
∏	N-ARY PRODUCT	∏	∏

Symbols	Description	Entity name	Entity Number
∑	N-ARY SUMMATION	∑	∑
A	Alpha	Α	Α
B	Beta	Β	Β
Γ	Gamma	Γ	Γ
Δ	delta	Δ	Δ
E	Epsilon	Ε	Ε
Z	Zeta	Ζ	Ζ
♥	BLACK HEART SUIT = valentine	♥	♥
♣	BLACK CLUB SUIT = shamrock	♣	♣
♠	BLACK SPADE SUIT	♠	♠
↓	DOWNWARDS ARROW	↓	↓

Symbols	Description	Entity name	Entity Number
→	RIGHTWARDS ARROW	→	→
↑	UPWARDS ARROW	↑	↑
←	LEFTWARDS ARROW	←	←
™	TRADEMARK	™	™
♦	BLACK DIAMOND SUIT	⋄	♦
°	degree	°	°
∞	infinity	∞	∞
‰	per-mille	‰	‰
·	dot operator	⋅	⋅
±	plus-minus	±	±
†	hermitian	⊹	⊹

Symbols	Description	Entity name	Entity Number
–	minus sign	&minus;	&#8722;
¬	–	&not;	&#172;
%	percent sign	&percent;	&#37;
f	Function	&fnof;	&#402;
∥	parallel	&parallel;	&#8741;