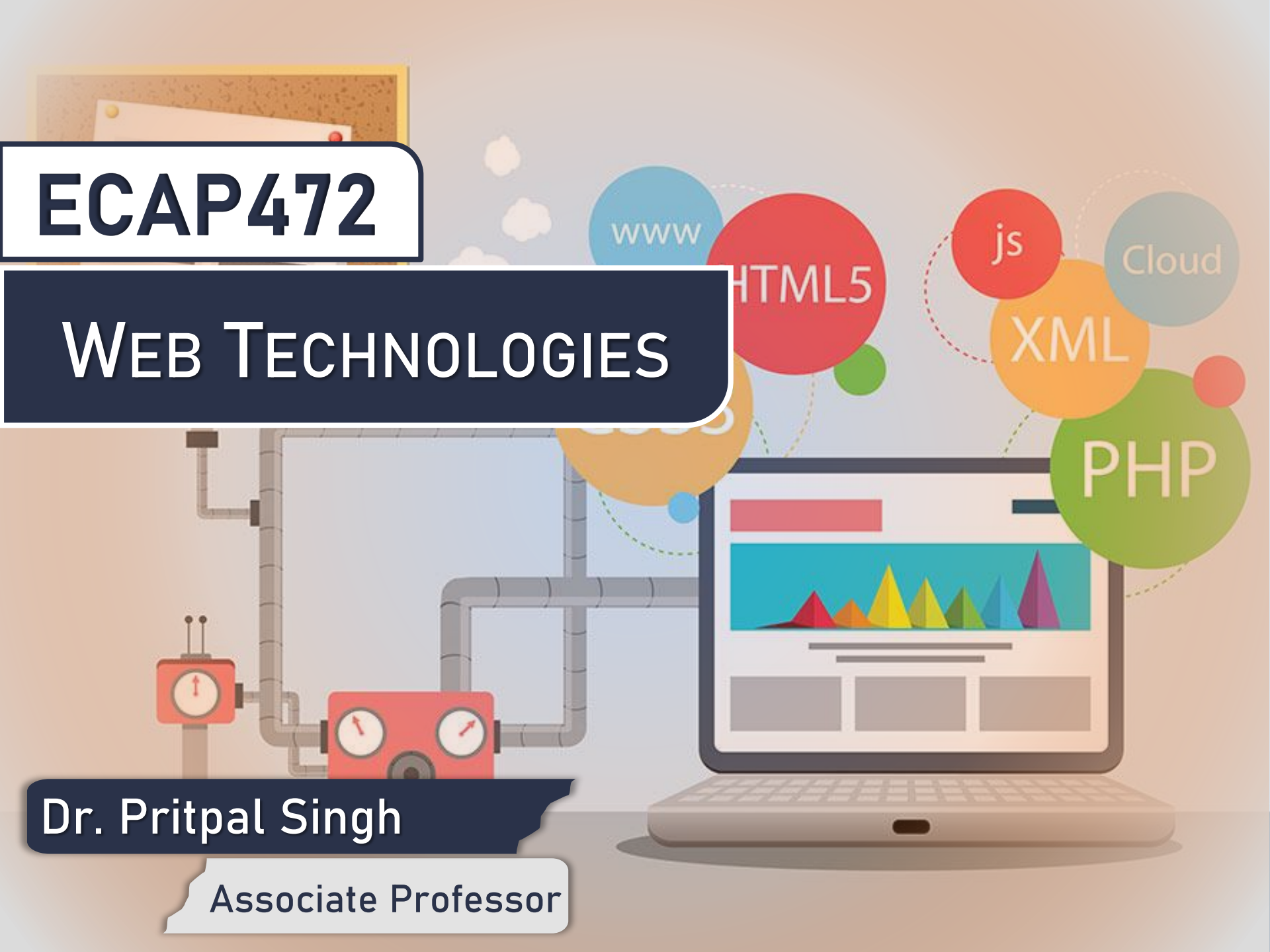
ECAP472

Web Technologies



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Learning Outcomes

After this lecture, you will be able to

- understand JavaScript objects and events.
- go over JavaScript functions JavaScript Strings

Real Life Objects, Properties, and Methods

- In real life, a car is an object.
- A car has properties like weight and color, and methods like start and stop.
- All cars have the same properties, but the property values differ from car to car.
- All cars have the same methods, but the methods are performed at different times

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JavaScript Objects

- JavaScript variables are containers for data values.
- This code assigns a simple value (Fiat) to a variable named car:

JavaScript Objects

Let car = "Fiat";

- Objects are variables too. But objects can contain many values.
- This code assigns many values (Fiat, 500, white) to a variable named car:
- const car = {type:"Fiat", model:"500", color:"white"};

Object Definition

- You define (and create) a JavaScript object with an object literal:

Example

- const person = {firstName:"John", lastName:"Doe", age:50, eyeColor:"blue"};
- Spaces and line breaks are not important.
- An object definition can span multiple lines

Example

```
const person = {
  firstName: "John",
  lastName: "Doe",
  age: 50,
  eyeColor: "blue"
};
```

Object Methods

- Objects can also have methods.
- Methods are actions that can be performed on objects.
- Methods are stored in properties as function definitions.

JavaScript Events

- HTML events are "things" that happen to HTML elements.
- When JavaScript is used in HTML pages, JavaScript can "react" on these events.

HTML Events

- An HTML event can be something the browser does, or something a user does.

Here are some examples of HTML events:

- An HTML web page has finished loading
- An HTML input field was changed
- An HTML button was clicked

HTML Events

- Often, when events happen, you may want to do something.
- JavaScript lets you execute code when events are detected.
- HTML allows event handler attributes, with JavaScript code, to be added to HTML elements.

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Example

- In the following example, an onclick attribute (with code), is added to a <button> element:

```
<button onclick="document.getElementById('demo').innerHTML = Date()">The time is?</button>
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Common HTML Events

Event	Description
onchange	An HTML element has been changed
onclick	The user clicks an HTML element
onmouseover	The user moves the mouse over an HTML element
onmouseout	The user moves the mouse away from an HTML element
onkeydown	The user pushes a keyboard key
onload	The browser has finished loading the page

JavaScript Event Handlers

Event handlers can be used to handle and verify user input, user actions, and browser actions:

- Things that should be done every time a page loads
- Things that should be done when the page is closed

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JavaScript Event Handlers

- Action that should be performed when a user clicks a button
- Content that should be verified when a user inputs data

JavaScript Strings

- JavaScript strings are for storing and manipulating text.
- A JavaScript string is zero or more characters written inside quotes.

Example

- `let text = "John Doe";`

JavaScript Strings

- You can use single or double quotes:

Example

- ```
  let carName1 = "Volvo XC60";  // Double quotes
  let carName2 = 'Volvo XC60';  // Single quotes
  ```
  ```

String Length

Example

```
let text = "ABCDEFGHIJKLMNOPQRSTUVWXYZ";

let length = text.length;
```

Escape Character

- Because strings must be written within quotes, JavaScript will misunderstand this string:
- let text = "We are the so-called "Vikings" from the north.";
- The string will be chopped to "We are the so-called ".

Escape Character

- The solution to avoid this problem, is to use the backslash escape character.
- The backslash (\) escape character turns special characters into string characters

Example

- let text = "We are the so-called \"Vikings\" from the north.";
- The sequence '\' inserts a single quote in a string:

That’s all for now…