

# Introduction to ReactJS

Course Code: CSC 4182    Course Title: Advanced Programming In Web Technologies



**Dept. of Computer Science**  
**Faculty of Science and Technology**

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# Lecture Outline



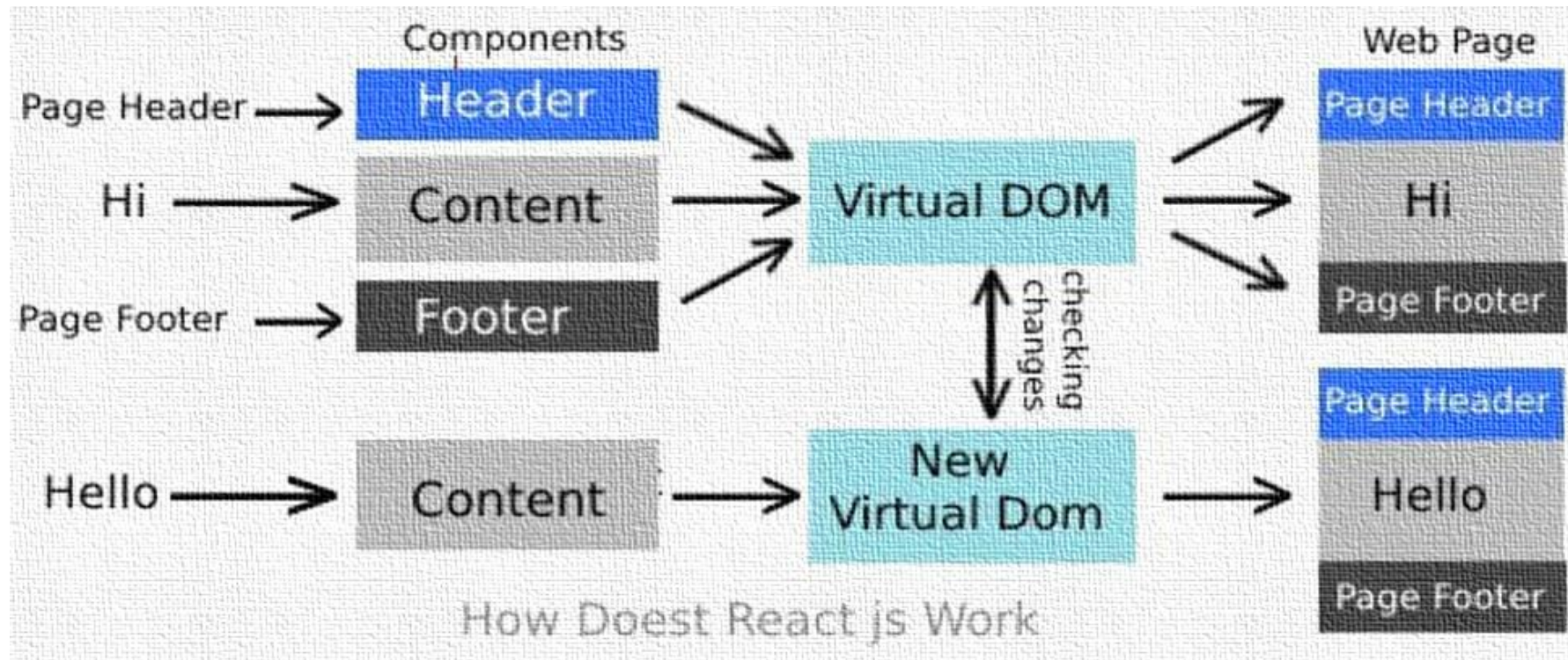
- ✓ Full Stack Web Development
- ✓ Frontend Libraries & Frameworks
- ✓ Backend Frameworks
- ✓ What is Tech Stack
- ✓ 3NP Stack
- ✓ API(Application Programming Interface)
- ✓ REST API
- ✓ Course Logistics
- ✓ Node.js
- ✓ Postman

# What is ReactJS?



- ReactJS is a JavaScript library created by Facebook.
- React is a tool for building UI components.
- React creates a **VIRTUAL DOM** in memory.
- Instead of manipulating the browser's DOM directly, React creates a **virtual DOM** in memory, where it does all the necessary manipulating, before making the changes in the browser DOM.
- React only changes what needs to be changed!
- React finds out what changes have been made, and changes only what needs to be changed.

# How does React Work?



# React.JS History



- Current version of React.JS is V18.0.0 (April 2022).
- Initial Release to the Public (V0.3.0) was in July 2013.
- React.JS was first used in 2011 for Facebook's Newsfeed feature.
- Facebook Software Engineer, Jordan Walke, created it.

# ES6 pre-requisite of ReactJS



What is ES6?

ES6 stands for ECMAScript 6.

ECMAScript was created to standardize JavaScript, and ES6 is the 6th version of ECMAScript, it was published in 2015, and is also known as ECMAScript 2015.

React uses ES6, and you should be familiar with some of the new features like:

- Arrow Functions
- Variables (let, const, var)
- Array Methods like .map()
- Destructuring
- Modules
- Ternary Operator

# Arrow Functions



Arrow functions allow us to write **shorter function**

If the function has only **one statement**, and the statement **returns a value**, you can **remove** the brackets and the **return keyword**

With arrow functions, the **this** keyword always represents the object that defined the arrow function.

Details;

[https://www.w3schools.com/REACT/react\\_es6\\_arrow.asp](https://www.w3schools.com/REACT/react_es6_arrow.asp)

# Array Methods



There are many JavaScript array methods.

One of the most useful in React is the `.map()` array method.

The `.map()` method allows you to run a function on each item in the array, returning a new array as the result.

In React, `map()` can be used to generate lists.

Example;

[https://www.w3schools.com/REACT/react\\_es6\\_array\\_methods.asp](https://www.w3schools.com/REACT/react_es6_array_methods.asp)



# Destructuring Objects



- The **destructuring assignment** syntax is a JavaScript expression that makes it possible to **unpack** values from arrays, or properties from objects, into distinct variables.

Example;

[https://www.w3schools.com/REACT/tryit.asp?filename=tryreact\\_es6\\_destructuring\\_object2](https://www.w3schools.com/REACT/tryit.asp?filename=tryreact_es6_destructuring_object2)

# Modules



JavaScript modules allow you to break up your code into separate files.

ES Modules rely on the **import** and **export** statements.

## Named Exports

You can create named exports two ways. In-line individually, or all at once at the bottom.

## Default Exports

You can only have **one default** export in a file.

[https://www.w3schools.com/REACT/react\\_es6\\_modules.asp](https://www.w3schools.com/REACT/react_es6_modules.asp)

## IMPORT

Import named exports from the file person.js:

```
import { name, age } from './person.js';
```

Import a default export from the file message.js:

```
import message from './message.js';
```

# Ternary Operator



The ternary operator is a simplified conditional operator like **if / else**.

Syntax:

**condition ? <expression if true> : <expression if false>**

[https://www.w3schools.com/REACT/tryit.asp?filename=try\\_react\\_es6\\_ternary2](https://www.w3schools.com/REACT/tryit.asp?filename=try_react_es6_ternary2)



# References

1. W3Schools Online Web Tutorials, URL: <http://www.w3schools.com>
2. Next.js, URL: <https://nextjs.org/>
3. Mozilla Developer Networks, URL: <https://developer.mozilla.org/>



Thank You!