

# Guide to Discussion

CSC359 Applications for the Web

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## Goals for today.

- Install software.
- Learn names, dates, concepts, and terms.
- Write a “Hello, world!” program.

## Composing a story

Let’s learn a little about the origins of the Internet and the World Wide Web.

Search online for information about these topics. Divide the work amongst yourselves. Then share what you have learned with your classmates in a discussion.

- Vannevar Bush, “As We May Think,” and the MEMEX
- Leo Beranek, BBN, and the Arpanet
- Ted Nelson, Computer Lib, and hypertext

- Adele Goldberg (the one who is a computer scientist), design patterns, and graphical user interfaces
- Bob Kahn, Vinton Cerf, and TCP/IP
- Radia Perlman and STP
- NSFNET
- Tim Berners-Lee, the World Wide Web, and HTML
- the Internet Protocol Stack, TCP, and HTTP
- relationships among SGML, XML, HTML, and CSS
- Marc Andreessen, Mosaic, and Netscape
- Brendan Eich, JavaScript, Mozilla, and ECMAScript
- front-end vs. back-end development
- MVC design pattern
- Single Page Application

## Important features of HTML

### Top-level structure

- `<html>`
- `<head>`
- `<body>`

### Lower-level structure

- `<header>` to define a section of the page that contains, for example, a title, authors' names, table of contents, search bar
- `<div>`
- `<h1> ... <h6>` for titles of sections and subsection\*s
- `<p>` for paragraphs
- `<ul>`, `<ol>`, `<li>` for itemized and enumerated lists

## Images and hyperlinks

- `<img src="">` to include images on page
- `<a href="">` to link to other pages

## What might go between `<head>` and `</head>`

- `<link>` to an external CSS stylesheet
- `<title>` to put a title in the browser's page tab
- `<meta` to specify a character set

## Important features of CSS

- select a typeface, a style (boldface, italic), and size of font
- arranging elements on page (e.g., CSS Flex Box and CSS Grid Layouts)
- selecting elements for styling by name, class, id
- position elements on page, padding, and margins around elements
- specify a background color

## Important features of JavaScript

- data types, including: Number, String, Boolean, Object
- creating variables with **let** and **const**
- **if**, **for**, **while**, **switch** statements
- objects (what do are key/value pairs called in the Python or Java programming languages?)
- arrays (search online for an answer to the question: "Is a JavaScript array really an array?")
- ES6 Arrow functions (what is a lambda function? have you seen them in other languages?)
- `filter()`, `map()`, `reduce()`, `forEach()` functions (what is a higher order function)
- promises
- destructuring arrays and objects
- error handling

# Hello, World!

- What is a DOCTYPE declaration?
- What is utf-8?
- What does a comment in HTML look like?
- What is the difference between an id and a class?

```
1 <!DOCTYPE html>
2 <html>
3   <head>
4     <title>Hello React</title>
5     <meta charset="utf-8" />
6     <link rel="stylesheet"
7         type="text/css"
8         href="00.normal.css" />
9   </head>
10  <body>
11    <div id="app">
12      <!-- my app renders here -->
13    </div>
14    <script src="react/react.js"></script>
15    <script src="react/react-dom.js"></script>
16    <script>
17      ReactDOM.render(
18        React.createElement('h1', null, 'Hello, world!'),
19        document.getElementById('app'),
20      );
21    </script>
22  </body>
23 </html>
```