CSC 319 **Homework Assignment #2** **DUE:**
WEB PROGRAMMING

PART A:

This week's assignment focuses on developing two web pages that will render attractively on a desktop computer. However, as part of this assignment, you are going to analyze how well it renders on mobile phone devices as well. In this assignment, our focus is on utilizing basic HTML5 tags and CSS styles.

Specifically, we will code

- Different font typefaces and colors
- Various background colors for different page components
- Border styles
- Hyperlinks and alter their default appearance
- HTML entities, specifically the "no break space" and ©
- Text alignment
- Adjacent "div" block layouts using float properties
- Descriptive page tab titles
- Vertical spacing
- Centering of page content
- Inclusion of images
- HTML comments
- CSS comments
- Margins and padding, noting their relationship

The two web pages that you are to create are displayed on the following pages. Approximate the colors as best are you are able to do so. As long as the colors are close, that will suffice for this assignment. Be sure to specify a web page title of "Homework 2" for the primary index page, and a web page titles of "Homework 2 – PWAs" for the second page. Also be sure to include an HTML comment within your code on each web page, that identifies you as the web developer.

PART B:

Answer the following two questions in a Word document:

1. What is the CSS Grid? What is its purpose?

2. Identify one thing that you really wanted to do in the web page in this assignment, but we had not yet covered that topic in class. Explain.

https://en.wikipedia.org/wiki/Web_development

https://www.w3schools.com/css/css_intro.asp

WEB DEVELOPMENT TECHNOLOGIES

Web development is the work involved in developing a website for the Internet (World Wide Web) or an intranet (a private network). Web development can range from developing a simple single static page of plain text to complex web-based internet applications (web apps), electronic businesses, and social network services. There are three kinds of web developer specialization: front-end developer, back-end developer, and full-stack developer. Front-end developers are responsible for behavior and visuals that run in the user browser, while back-end developers deal with the servers. [*Source: Wikipedia*]

We will study many different web technologies, including those described below.

HTML 5

HTML5 (HyperText Markup Language 5) is a markup language used for structuring and presenting content on the World Wide Web. It is the latest version of HTML as shown in the list below.

- HTML 1.0
- HTML 2.0
- HTML 3.0
- HTML 3.2 (Wilbur)
- HTML 4.0 (Cougar)
- XHTML
- HTML 5

CSS

CSS (Cascading Style Sheets) CSS describes how HTML elements are to be displayed. CSS is used to define styles for your web pages, including the design, layout and variations in display for different devices and screen sizes. *W3 Schools*
Bootstrap is a popular CSS framework.

Responsive Web Design (RWD)

Responsive Web Design is not so much a technology, as it is a technique. As W3 Schools very simply states: RWD is about using HTML and CSS to automatically resize, hide, shrink, or enlarge, a website, to make it look good on all devices (desktops, tablets, and phones). A responsive web design will automatically adjust for different screen sizes and viewports. You will want your websites to always adhere to RWD principles, with few exceptions. RWD is the reason that the "viewport" meta tag is included in our HTML template.

JavaScript (JS)

JavaScript is the programming lanugage of the browser. Javascript is not Java. Java is a strongly typed language so variables must be declared prior to use in a program. In Java the type of a variable is checked at compile-time. JavaScript, on the other hand, is a weakly typed language with more relaxed syntax and rules. Java is an object-oriented programming language, whereas JavaScript is an object-based scripting language. A Java program has the file extension ".java" and translates source code into bytecode, which is executed by a JVM (Java Virtual Machine). A JavaScript file, on the other hand, has a file extension ".js" and it is interpreted but not compiled. Every browser has the Javascript interpreter to execute JS code. JavaScript's name is the result of a co-marketing deal between Netscape and Sun, in exchange for Netscape bundling Sun's Java runtime with their then-dominant browser. JavaScript was originally called Mocha, then was renamed to LiveScript, and then was renamed to JavaScript.

Server-side Languages

Server-side code is simply code that runs on a server and produces web page content that is sent to a browser. One major advantage of server-side code is its access to and ability to manipulate database (SQL Server, MySQL, Oracle, SQLite, etc.) information. Server-side code is often referred to as "back-end" code.
Some popular server-side programming languages include:

- ASP.NET C#
- Core MVC
- PHP
- Java and Node.js
- Python
- Ruby

Front-End Frameworks

A front-end framework is essentially a bundle of JavaScript that someone else has coded, which you can include in your application to help you build it faster. . Front-end frameworks declare rules on how developers should structure their HTML, CSS, and JavaScript, to make the application easier to develop.
The most popular front-end frameworks at this time are:

1. Angular
2. React
3. Vue
4. Svelte

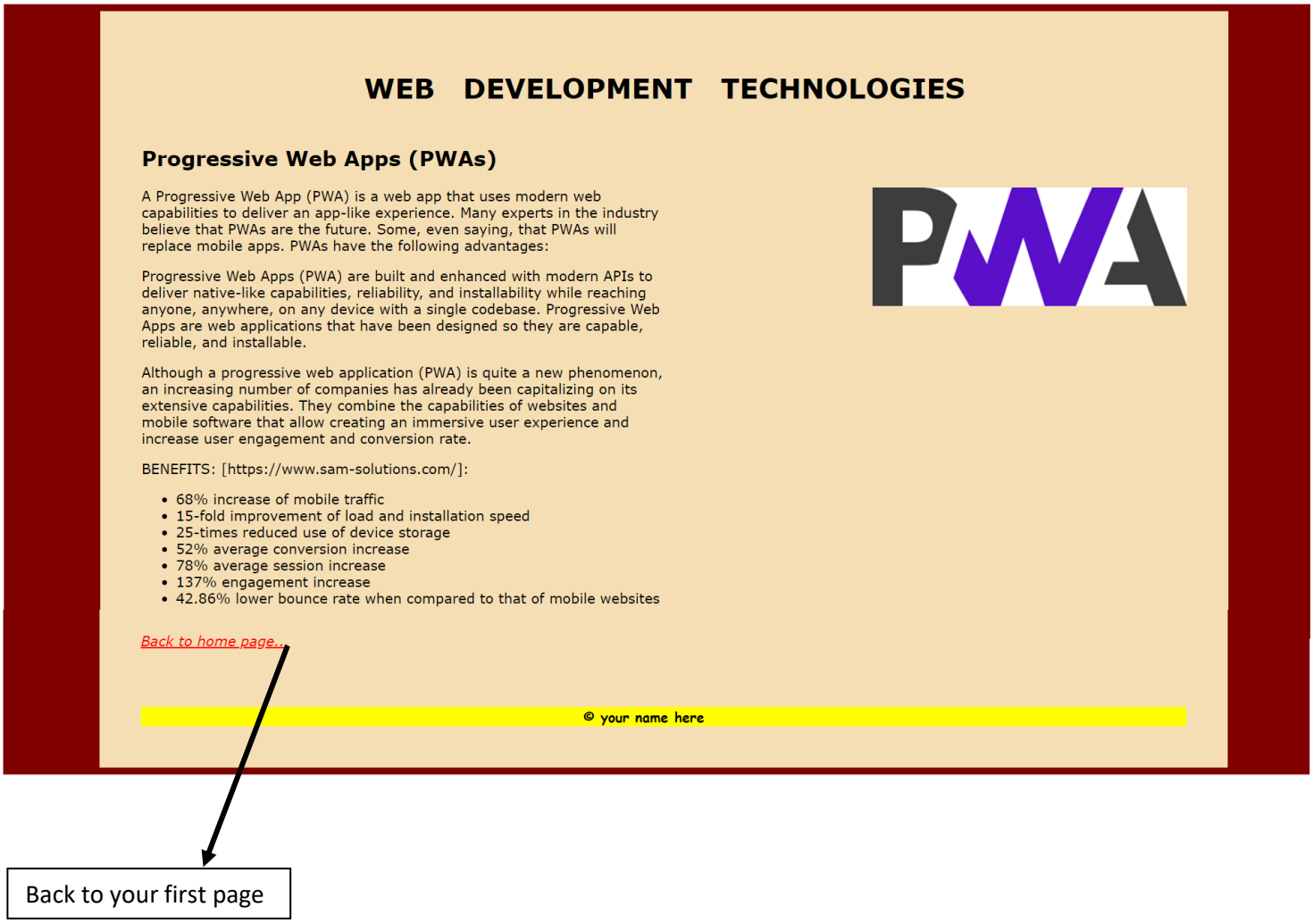
Progressive Web Apps (PWAs)

A Progressive Web App (PWA) is a web app that uses modern web capabilities to deliver an app-like experience. Many experts in the industry believe that PWAs are the future. Some, even saying, that PWAs will replace mobile apps. PWAs have the following advantages:

Progressive Web Apps (PWA) are built and enhanced with modern APIs to deliver native-like capabilities, reliability, and installability while reaching anyone, anywhere, on any device with a single codebase. Progressive Web Apps are web applications that have been designed so they are capable, reliable, and installable. [*More information...*]

pwas.html

pwas.html:



Part C: Use Chrome Developer Tools to render the home page on a mobile screen. Capture a screen shot and submit it as part of this assignment for credit. In addition, explain in your own words, what needs to be done to this page in order for it to render more attractively on a mobile device.

GRADING RUBRIC:

Keep in mind that this week, we are developing two web pages that will render attractively on a desktop computer (next week we will focus on additional platforms).

TASK	MAX PTS
Document (page) background color of “maroon”	1
Document width specification of 100% to set up for content centering	1
Centered container (with width of 80%, margin and padding settings)	2
Centered container background color of “wheat”	1
Use of HTML space entity to force 3 spaces between words in the main heading	1
© centered in a yellow background, bolded and Comic Sans MS font	2
Home page title of “Homework 1”	1
Hyperlinks styled with red font color and italics	1
Document font family specification of Verdana, Geneva, Tahoma, sans-serif	1
HTML explanation and unordered list on a white background	2
CSS explanation on a black background with a text color of wheat	2
RWD explanation surrounded by a black border that is solid and thick	2
Placement of HTML image	1
Placement of CSS images	1
JavaScript explanation highlighted in yellow	1
Vertical and horizontal spacing of different explanations and images using margins and padding (use of HTML space entity not permitted)	4
Server-side languages unordered list and image with dotted thick border	2
Front-end frameworks ordered list and Angular image	2
PWAs explanation and image	2
Hyperlink references	2
pwas.html and link back to home page	3
Answer to Part B, Question 1	3
Answer to Part B, Question 2	2
Part C attach a screen shot of how the home page looks on a mobile phone screen in Chrome Developer tools. Explain what needs to be done in order for the home page to render better on mobile devices.	8
Total	**48**