Introduction to ITWS

Place your name on the top of this document in the header

Enter your answers directly into this document (unless instructed otherwise)

All answers should be in be in Your Own Words, and use proper grammar

There are multiple questions on this test. Make sure you complete them all.

Make sure your answers use an alternative font and/or color – (not black or red)

Create a branch for this quiz called quiz2 and switch to that branch

Create a folder, somewhere under the root of your website (iit) for this quiz called quiz2

Save this document into that folder as *yourName*-*yourRCSID-S25*Quiz2.docx

Create a readme file in the same folder and discuss any relevant information about the quiz.

(Include at least; your GitHub id, Repo name, Azure homepage link, and Discord handle.)

Place all quiz other specific documents (if any) in the same folder

Commit your changes as instructed below and push to GitHub

DO NOT create a pull request or merge your changes

When done also submit a zip of your work (repo ok) to LMS using the naming convention above

NOTE: You are not to discuss this quiz with anyone. You are not to reference old (previous semester) submissions for ‘help’ or guidance. You may not solicit or receive help online or in-person. You may reference online resources, and you may use the notes from this class, but all work must be your own and you must figure out the solutions on your own. Do not us AI to answer these questions – you may use it for assistance – however if you do, you must state explicitly what you asked and what was returned in your readme files.

1. Technology (coding): (40 points, 30 minutes)
   1. Create an XML file with the necessary tags to store at least 5 of your books. Make sure to include at least the title, author, and a short description. (20 points)
   2. Using JavaScript and/or jQuery as in the in class JSON examples, write the code/files necessary to (20 points) (NOTE do not use AJAX)
      1. Make your collection a valid JavaScript variable
      2. List out the book names and description in an ordered list. (10 pts)
      3. Bind an event to the names, so that when the user hovers over an item, the author’s name appears in some way (your choice) (10 points)
2. Technology (description) (20 points, 15 minutes): Web Development
   1. What is jQuery and what is jQuery UI? How have we used them in this class? How do you include them in your website - give example (5 points)

JQuery is a JavaScript library that is used to create interactive items on your website. This library has easy-to-use syntax, $(), that allows you to interact with objects easily. JQuery UI is a library that works as an extension of JQuery that builds upon the original library. In class we were shown examples of JQuery UI such as dropdown forms, calendars, drag-and-drop features, etc. We have used JQuery in this class, especially in lab 6 where we had to add functionality to a form. We used JQuery functions such as .click(), .fadeOut() and .fadeIn(), hasClass() and removeClass(), etc. All of these functions contributed to making the website more fun and interactive, while still making it simple to implement them.

* 1. Given the implementation of your personal site on your Azure instance, If the root of your web server were to change to /webserver/www, how would you need to change your deployment to host your personal website? (5 points)

If the root of the folder were to change to /webserver/www, I would need to change how I access my repository to create git pull requests. So, whenever I enter into my Azure VM, instead of using /var/www/html/iit, I would need to cd to /webserver/www/iit. After I’m here, I would do the same process of pulling, using sudo -u www-data git pull.

* 1. Write a function using a callback that when called via a click event, will change the color of that item’s text to green, and then back after 2 seconds. (Show both the call and then function) (10 pts)

$('#item').click(function() {

const originalColor = $(this).css('color');

$(this).css('color', 'green');

setTimeout(function() {

$(this).css('color', originalColor);

}, 2000);

});

1. Web Science/HCI (20 points, 15 min) (Explain in detail)
   1. According to the Lecture by Dr. Erickson, what is Web Science? Why is it important? (10 points)

Dr. Erikson described Web Science as the study of the World Wide Web as a scientific field in and of itself. This topic is critical because the internet, as a transformational and disruptive technology, has far-reaching implications for our culture and society. While the technology is well-known, the entire impact of a digitally networked world on numerous parts of life is not always evident, making Web Science research critical to understanding these consequences.

* 1. What are the 4 quadrants in a web interface? What principles, if any describe how a website is viewed? Why is this important? (5 points)

The 4 quadrants in a web interface refer to how we divide a web page when we are thinking of human interaction, and the most optimal way to display our information. As the guest lecturer explained, this stems from the "F-pattern" and "Z-pattern" scanning principles, where users read horizontally first (top) and then vertically (left). This is extremely important as this lets you understand how users interact with your website. Understanding this is crucial because it optimizes usability, reduces bounce rates, and guides user flow efficiently, creating a more visually pleasing experience for your costumers.

* 1. What is Balsamiq and how do we use it? How did you use in in class and how did you use it for your projects? Be specific) (5 points)

Balsamiq is a website that lets you design the interface of a website with building blocks in a simplified way. It lets you visualize ideas without the need of coding it up using HTML and CSS. We used this in class when we had our guest lecture on Human-Computer Interaction. We had to design a prototype for an app that kept track of open parking spaces in an area. We used Balsamiq to create this interface, without the need of coding anything. We also used Balsamiq for our projects in lab 7, where we had to create a mockup for our term project. I was able to build all the pages we needed using Balsamiq, which included a landing page, signup/login, a groups page and individual page.

1. Cases 1 & 2 – (20 points, 10 minutes) (Explain in detail)
   1. What is the difference between Agile and Waterfall

Waterfall is a methodical and disciplined approach in which each step (planning, design, development, testing, etc.) is completed before moving on to the next. It is strict, which means that modifications are difficult to implement once a phase is completed, hence it is best suited to projects with defined, unchanging needs. Agile, on the other hand, emphasizes flexibility and iterative processes. It divides the project into smaller chunks known as sprints, in which teams continually build, test, and improve a portion of the project. Agile allows for modifications and adjustments throughout the process, making it perfect for projects whose needs may change over time.

* 1. What is Blockchain? How is it used outside of Cryptocurrency? Be specific.

Blockchain is a decentralized digital ledger that stores transactions in cryptographically secure blocks linked together in a chain, assuring transparency and immutability. Blockchain is the basic technology in cryptocurrencies, allowing for direct peer-to-peer transactions. The instance we analyzed demonstrates how Ethereum's blockchain enables DeFi protocols like Uniswap, which leverage liquidity pools and smart contracts to enable decentralized trading. Furthermore, blockchain consensus techniques like as proof-of-work (used by Bitcoin) and proof-of-stake (used by Ethereum after "The Merge") ensure transaction security. The collapse of TerraUSD (UST) exemplifies blockchain's significance in algorithmic stablecoins, as the transparent ledger exposes the failure of its peg mechanism. Overall, blockchain in cryptocurrency facilitates trustless, automated financial systems, as evidenced by DeFi's disruption of traditional finance.