Introduction to IT: ITWS 1100

Take Home Final Quiz: Due April 21st, 11:59:59pm



1. HTML, CSS, JavaScript, jQuery, PHP, and then some … (70 Points)

In lab 3 you built a simple website using (primarily) static HTML. In Lab 8 you modified your projects page to read from a JSON file using jQuery and AJAX.

Now we are going repurpose our websites again. We are going to refactor our sites to be built using data from MySQL (MariaDB), using PHP.

* + Create an external, required PHP file named conn.php which will setup global variables for user, password, database and server for your mySQLi API connection.
  + Using includes, refactor your main site template (ie Header, and Menu) similar in code structure to the lab 9 example.
  + Using the includes from above, make a new index.php file to replace your index.html file from your site’s root. When served to the browser, index.php should look like your index.html used to look. (remember to archive or delete your old index.html file)
  + Databases: create a database in your MariaDB (MySQL) server named, ‘mySite’
    - In this database,
      * create a table named ‘myLabs’
      * create a table named ‘myProjects’
      * create a table named ‘myFooter’
      * create a table named ‘mySiteUsers’
    - Make sure you have a unique, primary key, that is automatically set that is 2 bytes in length in each table.
    - Create the fields necessary to store the data needed for your site.
  + Replace your labs/projects html page (or menu info) with a new php file which will be built dynamically by reading the necessary data from the myLabs table.
  + Add a new page for your projects (minimum 1 for your group project) which should also be accessible from your menus on all pages. It should use an relative link to your team project’s main page which at this point should also be located on your server(i.e. xx/xx/xx/groupX/
  + Using PHP includes – make sure to modularize all of the pages on your website
  + Login
    - Add a login button/link/menuitem or form fields, etc. to your main page
    - Add the functionality to allow a user to enter a user ID and password. The user, PW, users name, and user type (user or admin) must exist in the mySiteUsers table. Nothing fancy here: They may be in plain text.

Make sure that

* + - * if the user validates
        + add text with their name to your site. (i.e. Welcome XXXX!)
        + Replace the login option with logout (when clicked, the user should be logged out and the site should return to normal
      * If the user validates and is an admin, add an option to the labs menu to add/delete lab entries.
      * If the user does not validate, return with an error
  + Form for new lab entries
    - If the user is authorized and selects the add/delete lab entries, bring up a form that allows for new entries to be made, and lists out all entries. Allow delete as well (this should look/work similar to the movies/actors programs.
  + Note: When completed your index.html, projects.html, and labX.html(s), will no longer exist. They will be replaced with new php files, each in their appropriate folder so that when a user goes to yourFQDN/iit the index.php file will be served by default. This will be the new homepage for your website.

Document your code and include a readme with an explicit discussion of your IA and the logic contained throughout your site.

The site should be fully functional. DO NOT relocate all your other lab files. Reference/modify them where they currently exist within your iit folder, and according to your IA.

1. Blockchain and Generative AI and ethics: (30 points)
   1. From the case and your research, how is/was Blockchain a transformative technology? What is it about Blockchain that is so appealing. Is the hype justified? Why or why not? (min 250 words - 15 points)
      1. Blockchain technology is genuinely shaking things up, mainly because it's introducing a decentralized structure that could totally change the financial world. The big deal is that blockchain can provide a lot of the same financial products and services we're used to, but without those traditional middlemen like banks and insurance companies. This shift is powered by "smart contracts," which are basically digital agreements on the blockchain that automatically handle transactions when certain conditions are met. Think of it like those self-service kiosks – they just do their thing. This automation is super important for boosting efficiency, cutting costs, and reducing how much we need to rely on trust in finance. Now, what makes blockchain so appealing? For starters, it's democratizing finance by giving more people access through open-door protocols, and it's also spreading the power around, away from those centralized institutions. It's also making things way more efficient by automating processes, which means less labor and lower costs. Plus, blockchain is making finance more transparent, which helps reduce risks and builds more trust in the system. Of course, it's not all sunshine and roses. There are some real concerns, like the lack of clear regulations, the risk of hacks and scams in DeFi, and some limitations that could slow down its widespread use. The collapse of TerraUSD (UST) is a perfect example of how risky things can get in DeFi, so we've got to balance the hype with a good dose of reality. So, is the hype around blockchain justified? It's a mixed bag. Blockchain definitely has the potential to revolutionize finance by making it more accessible, efficient, and transparent, but we've got to tackle those risks and challenges to really make it happen.
   2. From the case and your research, what is Generative AI? How did it impact your understanding of the case? How do you think it is likely if at all) to change the way we work with computers? Be specific and include personal observations. (min 250 words - 15 points)
      1. Generative AI (GAI) has quickly become a very important technology that’s changing how we understand and interact with complex subjects, particularly in the fast-moving area of decentralized finance (DeFi). GAI is a tool that can break down complex concepts and an abundance of information into easily graspable subparts. GAI is good at breaking down tough ideas, like how blockchain confirms transactions, how smart contracts function, and how automated market makers (AMMs) work, making these ideas much clearer and simpler. For the in class presentation we did for Case 2, we used GAI to essentially grasp and explain all the new and complex topics of DeFi. This simplification really helps with being able to conceptualize and understand the greater workings of DeFi. Also, GAI has changed how research is done, making it much quicker and broader. It gives fast access to lots of different details about DeFi, including how it’s used, the many rules that apply to it, and the new trends that are shaping its future, which speeds up the research process and allows for a more detailed understanding. By making it easier to compare different viewpoints and assess the arguments for and against DeFi, GAI helps people develop more balanced, fair, and well-informed opinions, encouraging careful thought and judgment. Even with all the clear advantages of GAI, it is still imperative to be careful with the use of GAI and stressing the vital role of human supervision, critical thinking, and independent thought. GAI works best as a powerful tool to support and improve human thinking, not to replace it, and it's strongly suggested to double-check AI-produced information with reliable sources to make sure that research findings are accurate, dependable, and valid. The use of GAI in academic and professional settings has the potential to greatly increase productivity, improve the understanding of difficult subjects, expand the range of perspectives considered, and sharpen high-level thinking and analysis skills, signaling a major change in how people use computer technology for learning, research, and study.