Introduction to IT: ITWS 1100

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

* Place your name on the top of this document in the header
* All answers should be in be in Your Own Words, in complete sentences and should use proper grammar
* Make sure your answers use an alternative font and/or color – (not red, and not Comic Sans, etc.)
* Create a development branch for this quiz. Tag it properly.
* Place all documents including this one in a folder ***inside*** your iit folder named:
  + Quiz3
* Save this document as:
  + ITWS1100-S25-Quiz3-*yourRCSID*-*yourname*.docx
* When finished make sure you extract your SQL database (include the CREATE statement) – save the output as *yourRCSID-website.sql.* Place it in your finalQuizTH folder
* When finished with the quiz, zip your entire repository including all related files into a file named:
  + ITWS1100-S25-Quiz3-*yourRCSID*-*yourname*.zip
  + And submit it to LMS
* Move your changes into production and deploy
* Do not forget your read me

Remember to save as you go,

Good luck!

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)

Blockchain technology is well worth the hype, and as a Bitcoin holder, I've seen personally how revolutionary this breakthrough is. Blockchain is disruptive because of its capacity to establish trust without the use of centralized middlemen via decentralized networks, cryptographic security, and transparent ledgers. This fundamental shift is already affecting finance through DeFi platforms, which allow for peer-to-peer lending, trading, and borrowing without the use of traditional banks.   
  
The attractiveness stems from blockchain's key features: immutability prevents tampering with transaction records, smart contracts automate agreements without middlemen, and decentralization grants users direct control over their assets. The case illustrates significant examples such as Uniswap's decentralized exchange and MakerDAO's collateralized loans - innovations that would not be possible without blockchain's unique design.

While there have been high-profile failures, such as TerraUSD's demise, they do not diminish blockchain's promise. The frequency of these crashes is not high, and as blockchain evolves it is bound to have a stronger foundation. Technology is constantly improving to meet issues of scalability and regulation. What interests me the most is how blockchain enables global financial inclusion - the case study demonstrates strong adoption in emerging regions where traditional banking is unavailable or unreliable.   
  
The buzz is fair because blockchain is more than simply a technology innovation; it signals an important change in how we build trust and exchange value. From my experience as both a spectator and player in this field, blockchain's real-world applications and ongoing innovation demonstrate that it is more than simply a passing fad, but the foundation of a more open and efficient economic future.

* 1. 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)

When I first opened the DeFi case study, I was overwhelmed. Terms like "automated market makers" and "proof-of-stake consensus" may have been written in a different language. That's when I realized generative AI could be a game changer - not as a crutch, but as the ultimate thinking companion, allowing me to notice connections I'd previously overlooked.   
  
Generative AI is revolutionary because it can synthesize, explain, and even create information in addition to retrieving it. While preparing on our Case 2 presentation, my team used AI to create an initial outline that became our road plan. It brought to light critical concepts that we had previously neglected, such as how DAOs are a radical experiment in organizational form that combines blockchain and corporate governance. Suddenly, what appeared to be disparate technical principles became a coherent story about the future of finance.   
  
The real magic happened when AI helped me understand liquidity pools. The case provided technical explanations, but it wasn't until I asked an AI to connect them to something familiar, such as a community farmers' market where everyone contributes food, that the concept became clear. This is where generative AI excels: as a translator of complicated concepts into human understanding.

As I contemplate on this experience, I conclude that generative AI does for knowledge work what calculators did for math: it removes the friction in applying concepts rather than eliminating the need to understand them. The technology still requires human judgment (we double-checked every AI proposal against the facts), but it is fundamentally altering how humans interact with data.   
  
This case study journey demonstrated to me that the future of work will be one in which humans are empowered by AI rather than versus AI. Just as the DeFi pioneers in our scenario are rethinking finance without middlemen, generative AI is assisting us in reimagining learning and analysis without unneeded obstacles. And that is an invention worth embracing.