Introduction to IT: ITWS 1100

Take Home Final Quiz: Due December 3rd, 11:59:59pm

* Place your name on the top of this document in the header DONE
* Enter your answers directly into this document (unless instructed otherwise)
* 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. DONE
* Place all documents including this one in a folder ***inside*** your iit folder named:
  + finalQuizTH DONE
* Save this document as: DONE
  + ITWS1100-F23-FinalQuizTH-*yourRCSID*-*yourname*.docx
* 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 iit folder and all related files into a file named:
  + ITWS1100-F23-FinalQuiz-*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 … (65 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 include PHP file named conn.php which will setup global variables for user, password, database and server for your mySQLi API connection. DONE
  + Using includes, refactor your main site template (ie Header, and Menu) similar in code structure to the lab 9 example. DONE
  + Using the includes from above, make a new index.php file to replace your index.html file from your site’s root. When served, index.php should look like your index.html used to look. (when done, archive or delete your index.html file) DONE EXCEPT DELETING (KC TOLD ME I CAN)
  + Databases: create a database in your MariaDB (MySQL) server named, ‘mySite’
    - In this database, DONE
      * create a table named ‘myLabs’
      * create a table named ‘myProjects’
      * create a table named ‘footer’
      * 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. DONE BY SMALLINT
    - Create the fields necessary to store the data needed for your site. DONE
  + Replace your labs html page with a new php file which will be built dynamically by reading the necessary data from the myLabs table. DONE
  + 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 absolute link to your team project’s main page (i.e. <https://FQDN/groupX/index.html>) DONE
  + Login
    - Add a login button/link/menuitem, etc to your main page DONE
    - 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. They may be in plain text. Make sure that
      * if the user validates
        + add text with their name to your site.
        + 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 and projects.html (or labs.html) from labs 3 & 9 will no longer exist. They will be replaced with two 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 them where they currently exist within your iit folder.

1. Fidelity Labs & Generative AI: (20 points)
   1. How did Generative AI influence your responses to the case questions? Make sure to explain the steps you took, and the observations you made in using GAI. How did it help or distract from your understanding of the case? (min 250 words - 10 points)

Generative AI helped me heavily when producing my responses to the case questions. When using GAI it provided a more structured approach to the questions which is probably a result of an objective understanding of the questions as opposed to me where I interpret the questions in my own way and then proceed to answer the questions. For this case study first I answered the questions on my own. After understanding the article and having a solid understanding of the questions I decided to feed the information to Bard AI. This was because If I feed the GAI information it would be able to use that information to answer the questions which would help it produce a more valid answer. When comparing my answers to Bard AI’s answers I was able to gain a better perspective on the article. Also, the GAI’s response fed me with new ideas that contributed to my original ideas. I would say that GAI allowed me to make sure my response was concise and to the point. Unfortunately, I was not able to feed bard AI with the article to see its interpretation of the text but I was able to see the full effects of GAI. Thanks to GAI I gained perspective, clarity and even a new approach to some of the questions. I then fed my response to GAI to add to its own response and created a combination of the responses. This new response was great because it took in my answer and the more objective answer to create a better response. Since I had more context it was able to produce an improved response.

* 1. Who are Fidelity Labs? Why do they exist and what do they do? Have they helped or hindered Fidelity Investments? Make sure to be specific and include references to the material (min 250 words - 10 points)

Fidelity Labs is an internal incubator created by Fidelity Investments. Fidelity Labs exists to experiment with new and emerging technologies. Fidelity Labs mission is to create innovation and adapt to new technological innovations in business. This was revealed in the case study introduction. Fidelity labs role was to act on new technology and transform them into new market solutions. The main purpose of fidelity labs is to foster innovation and cater to an improved customer experience. This was evident in the platforms like **Wealth Central** and other user friendly mobile applications. Fidelity wanted to make trading better for the market and easier for users to participate in. They developed apps and different technologies to try and improve user experience and expand the market. User experience was something fidelity focused on and was great for user retention. Fidelity labs would act early on different trends to stay at a competitive advantage over other companies. Fidelity labs have greatly aided fidelity investments by making the industry easier to access to general populations. Fidelity labs would act quickly on new technology and in turn, would greatly influence what fidelity investments would invest in. Since the tech industry was evolving rapidly it was crucial for fidelity investments to know about what technologies had potential. We can see an example of this when fidelity implemented robotic advising which helped users navigate the site and added a more human touch to the applications they created. Furthermore, we saw how fidelity entered the cryptocurrency market early which created huge returns for the company, all thanks to Fidelity Labs.

1. Trade IX & Blockchain: (15 points)
   1. What is Blockchain Technology (BCT)? How was is applied in this case? (min 250 words – 10 points)

Blockchain technology is a decentralized ledger that records transactions across multiple computers. It ensures transparency and security when it is permission-based. BCT works with a peer to peer architecture where the users function as servers and users simultaneously. Each block in the chain has a hash of the previous block which makes the blockchain impossible to modify. When using BCT the nodes validate the transaction to make sure nothing bad happens. In trade finance, it serves as a secure and tamper-proof storage of transaction data. This was a new way of ensuring assets were securely transferred through the web. It eliminates the need for intermediaries and holds a verifiable record of all relevant transactions. BCT eliminates issues like duplicate documents and processing delays. Furthermore, the implementation of BCT would mitigate the amount needed to pay for processing documents. According to the case study, processing costs for trade documents were almost as much as 20% of the total cost of the transaction in the first place. In this case, it was applied by TRADEIX as a way to transform trade finance which was extremely fragmented. TRADEIX proposed it to Global3PL to help them operate more efficiently. Global3PL had issues with regional regulations and had to use more than 15 different platforms to operate successfully across different regions. After Global3PL implemented TRADEIX’s BCT solution with the MarcoPolo platform they were able to successfully complete their first transaction with AIG and Standard Chartered PLC. This change allowed Global3PL to reduce the amount of platforms they needed and cut down on costs.

* 1. How can BCT help the Supply chain Industry? Make sure to explain what BCT is and be specific in your analysis. (min 250 words, 10 points)

Blockchain technology can help the supply chain industry in many ways. BCT is decentralized which is better than the alternative where information would be stored in one place. With BCT information would be spread out throughout the users and this would reduce risks of data manipulation. BCT works by grouping together transactions in blocks we call nodes. Each node contains a record of transactions with relevant information. Complex algorithms are used to make sure transactions are valid and this is what makes the BCT secure. In the case study, it was even more secure because they used a permission-based blockchain. Once a transaction has been added to the blockchain it becomes really hard to alter it. All users of the BCT would be able to access a record of transactions because the BC would constantly be updated. BCT would make the transfer of assets a more straightforward approach. This is because in the supply chain industry would no longer need to rely on intermediaries to process documents. If BCT is implemented by the supply chain industry they would no longer need to worry about processing delays across regions. Furthermore, the industry would no longer need to worry about duplicate documents because each node in the blockchain would have code to verify the transaction. If a transaction seems fraudulent or bad the node would not be appended to the blockchain. This improves security when performing transactions in general. Most importantly it reduces the costs of processing documents. The supply chain industry would also no longer need multiple platforms to access different regions.