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CIS 2987-56 (Capstone)
Project Proposal
Due: January 24, 2021

Project Name: HDB Conversion
Company: NeuroResearch Centers
Supervisor: Joe Smith

Converting an MS Access Weight Loss Database to a C# ASP.NET Website for NeuroResearch Centers

NeuroResearch Centers is a medical research company located in Duluth, MN, that provides technical support on their nutritional supplements and medical food products on which they have patents. One of the services is for weight loss which an MS Access database is used to help keep track of weight loss progression and if the patient will meet their goal weight depending on their performance with the program.

When the MS Access weight loss database was created in the early 2000's most clinics had a limited amount of computers, resources, and used usually one computer to keep track of all the patients' information. With technology's progression over the last 20 years, doctors want to access this information anywhere, especially when they are with the patient in the room. Also, they want to have a central location for creating and modifying the data. In the past, each Doctor would have their thumb drive of their patients. This technique worked out okay; however, extra steps were needed when a patient needed to be seen by a different doctor. Furthermore, the medical transcriptionist had to share the Doctor's thumb drive, which causes accessibility issues.

NeuroResearch Centers has given me the project of creating an online version of the Weight Loss Database.

Notes about this project.

- I will create the website using Visual Studio 2019
- Web pages will use ASPX pages via C# ASP.NET
- Bootstrap 4.5 will be used for CSS
- The database backend will be Microsoft Azure
- The hosting server is going to utilize Windows 2019 Standard Edition
- The website will run on IIS
- The hardware for the server and firewall will use a PaaS company called Aptum

Roles to setup.

- Clinic (Is the primary ID for each clinic)
- User (Receptionist, Medical Transcriptionist, and Data Entry people)
- Doctor (Provider providing the care)
- SuperUser (Usually the business owner who keeps track of employee accounts)
- Website Administrator (IT Personals from NeuroResearch Centers)

Here is a general breakdown of the steps to complete this project.

1. Finish diagram of database tables and user roles. (3 Hours)
2. Review, diagram, model, and document how over 150+ macros and expressions work together. (100 Hours)
3. Setup database tables within Microsoft Azure that already created. (1 hour)
4. Create a Master Page (2 Hours)
5. Create CSS Responsive Layout (1 Hour)
6. Connect the database to MS Azure. (1 Hour)
7. Create data entry forms for each patient visit information to be entered. (3 Hours)
8. Use templates to display information that involves a Doctor and their patient. (3 Hour)
9. Have a way where a staff member and Doctors can modify data. (8 Hours)
10. Display graphing charts to show patient progress. Also, show a percentage of the past performance of the patient. (20 Hours)
11. Adding validators and requirement fields throughout the program (4 Hours)

    Configuring Application Security (34 Hours)
    a. Create User Login with session cookies
    b. Have it so only a Website Administrator or SuperUser can create Doctor or user accounts within a clinic account.
    c. Only allow a Website Administrator to create a new clinic account.
    d. The Website Administrator and anyone that belongs to a clinic can create a patient account within their clinic.
    e. Testing security setup
    f. Setup the ability so people can change and recover their passwords.

12. Build out web pages based on security, roles, and information (24 Hours)
13. Set up a function to tell how long it will take a patient to reach goal weight if they follow the program and protocols. (2 Hours)
14. Build additional features for quick reference for BMI, Metropolitan Table, and calorie counting needed for a goal weight. (5 Hours)
15. Make a printable version of the page. (1 Hour)

    Work on Server, Firewall, and VPN configuration
    a. Work with PaaS (Aptum) on server configuration for hardware, firewall, and VPN needs. (1 Hour)
    b. Install the software and configure the server as a web hosting provider. (6 Hours)
    c. Work with PaaS (Aptum) to get firewall secured. (2 Hours)
    d. Have a VPN setup needed to connect to the actual server to change files. (2 Hours)
    e. Lockdown static IP address and setup firewall rules for MS Azure to the server (1 Hour)
    f. Deploy the website to the server. (2 Hours)
    g. Test the website with multiple people trying and getting feedback. (10 Hours)
    h. Make adjustments to people suggestions (15 Hours)

16. Document each section as it gets completed. (16 Hours)

Estimated Time to Complete Project: 267 Hours (Working ~32 Hours a Week)

Break down of weekly tasks:

- Week 1 – Work on the diagram, model, and document of the macros and expressions.
- Week 2 – Work on the diagram, model, and document of the macros and expressions.
- Week 3 – Work on the diagram, model, and document of the macros and expressions.
- Week 4 – Build general web page layouts. Work on data entry forms and graphs showing data.
- Week 5 – Buildout security roles, connections, and actions.
- Week 6 – Section off areas of the website based on security level and finish building out pages.
- Week 7 – Deploying and setting up the server.
- Week 8 – Build utility tools. Also, perform testing, adjustments, and finish documentation.