myEHR

Project Management Documentation

Mid-State IT SOFTWARE DEVELOPER CAPSTONE

2024

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# Project Description

myEHR is an Electronic Health Record (EHR) application created to provide a foundational experience for medical coding students to familiarize themselves with EHR systems in a straightforward and engaging way. Designed with ease of use in mind, myEHR is ideal for students new to electronic health record systems, allowing them to navigate through various patient-related data points like care plans, medications, and medical histories to gain practical knowledge and skills without the need for prior EHR experience.

Optimized for desktop and tablet use, myEHR is intended to be an educational tool for MSTC students. Its intuitive design allows students to gain a deep understanding of the structure and functionality of an EHR, mirroring what they will encounter in real-world healthcare environments. The purpose of myEHR is to ensure that students are well-prepared to navigate EHR systems confidently and proficiently in their future healthcare careers. Instructors can customize the data presented within the application, aligning it with specific lesson plans and assignments, enhancing the learning process.

## Project Objectives

* Develop a user-friendly web application for students to gain familiarity with using an EHR.
* Provide secure admin access to create, update, and delete data inspired by course curriculum.
* Provide a realistic EHR experience to students.
* Successfully launch the application, pre-loaded with starter data.

## Scope

* Administration: The web application will help the administration manage patient, provider, medication, lab test, and allergy data to be displayed throughout the site when it’s made active.
* Interactive Patient Search: The web application will have a search feature to provide students with crucial experience in locating and selecting appropriate patient data using unique identifiers.
* Resources: The web application will display course-specific resources as outlined by the admin/instructor.
* Launch: Successful launch of web application that is a beginner-friendly system with an intuitive user interface.

Milestones

A milestone is a major event in the project and represents the completion of a set of activities. The following milestones will be achieved during the project:

1. Database Implementation & Data Entry
   1. Design and implement database.
   2. Create data entry and storage.
2. Design
   1. User-friendly with an intuitive user interface geared towards beginners.
   2. Optimized for desktop and tablet use.
3. Administrative Processes
   1. Manage database, data entry, and storage.
   2. Manage the status of data available to student users.
4. Launch Web Application
   1. Successfully launched the myEHR health record management system web application.
5. Documentation
   1. Provide code maintenance and style guide documentation.

# Project Deliverables

1. myEHR web application: a fully functional electronic health record management system web application.
2. SQL Scripts: seed data for the application, for user roles, and for admin users can be found in the source code.
3. Image Licensing Information: documentation regarding the acceptable use of the landing page image can be found with the technical documentation files in the source code.
4. Technical Documentation Materials: Code maintenance, style guide, administrative training, and project management documentation.
5. Launch Plan: A plan for the successful launch and maintenance of the electronic health record management system.

# Outstanding Items

* Description: Student account registration and creation in collaboration with MSTC’s single sign on authentication was intended to be added. Due to time and manpower constraints, paired with the timing of meeting with the MSTC faculty responsible for these interactions, the team was unable to implement this feature. A registration form view was created and has been left in the project files for future use. Finishing this feature will require the addition of the backend functionality.
  + Priority: Low
  + Status: In progress
* Description: Add the ability to change passwords for admin (and potentially student) users without using the ‘Forgot Password’ feature. The exclusion of this feature was an oversight, and due to time constraints, the team was unable to implement this. This will require adding a link to the login view, a view for a change password form, and the backend code as well.
  + Priority: High
  + Status: Not started
* Description: Hard deletes were not implemented across all elements within myEHR. These could be added for medications, providers, lab tests, and allergies. Currently these details operate under a soft delete. Adding a hard delete option will require the consideration of the records that are linked to these items.
  + Priority: Medium
  + Status: Not started
* Description: Create an error page for more graceful failures if they should occur. Currently, the default Azure error page is used when the myEHR URL is manipulated in a way that does not work with the application.
  + Priority: High
  + Status: Not started
* Description: Encrypt MHN and other ID values in the URL. This is not entirely necessary, but it does enhance the experience for students by removing the ability to navigate different patient records without using the application’s built in navigation. This will also create a more realistic experience as real-world data would be encrypted in this way.
  + Priority: Low
  + Status: Not started
* Description: Change the single visit view to include all events from that visit. This view currently pulls the most recent events from the database, but showing all of the events paints a more comprehensive picture of what may have occurred.
  + Priority: Medium
  + Status: In progress
* Description: Create and implement an error logger. This is something that the team started in the beginning stages of development and had to abandon due to the higher priority of other features. This will be a beneficial tool for future developers. The current logger can be found in the project files.
  + Priority: Medium
  + Status: In progress
* Description: Add graphs to show the progression of vital records. Currently vital records can be seen in a table. Adding a graph would not only enhance the visual appeal of the site but would also allow students to have a visual representation of a patient’s health records over time.
  + Priority: Low
  + Status: Not started
* Description: Link patient medications to their medication administration history. This would ensure that the only medications ‘administered’ to a patient are from the list of their prescribed medications. This adds a level of consistency and realism to the application.
  + Priority: Low
  + Status: Not started
* Description: Link patient lab results to their lab orders. This would ensure that patients are only assigned lab results for lab tests that have already been ordered for them. This adds a level of consistency and realism to the application.
  + Priority: Low
  + Status: Not started
* Description: Remove the highlight on ‘high’ priority or urgent level patient records when they become inactive. The highlight loses its importance when a record is inactive.
  + Priority: Low
  + Status: In progress
* Description: If students are given the ability to create their own accounts, a student activity logger could be added. This could potentially include timestamps for their logins and for any pages they view. This would help their instructors to see how much time students are spending in the application so they may better assist them with any struggles they have.
  + Priority: Medium
  + Status: Not started
* Description: If a logging system is implemented, student dashboard cards can display the number of new records made available in any category. This would enhance the visual appeal of the dashboard and provide additional guidance to the students from that entry point.
  + Priority: Low
  + Status: Not started
* Description: Create patient records and views for tables that are currently unused in the database. There are quite a few tables that were added after the database was initially created. The team did not have enough time to incorporate all of those tables and had to cut the patient details that were not necessary for base functionality. These can all be modeled after the existing patient record views and functions.
  + Priority: Medium
  + Status: In progress
* Description: Provide the ability for admin users to update the links and sections on the Resources page. This was an afterthought for the team, and there was not enough time to implement this by the time it came up.
  + Priority: Medium
  + Status: Not started