VCC Standardized Patient File Management System

Project Description and Clarification

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I. Introduction

The Elson S.Floyd College of Medicine Virtual Clinic Center (VCC) is a simulation-based training center, allowing medical students to practice with manikins as well as real people acting out example patient situations. This is called Standardized Patient Simulation. The interactions simulate experience for medical students without the high stakes of a real patient. The actors involved in these scenarios receive information on the patient they are portraying through documents known as scripts.

Scripts contain a plethora of important information for the actors, the students, as well as the facilitators of the simulation. The actor learns what symptoms they should portray and how to talk about them, as well as how their character is feeling. The scripts also contain door notes, which the student will view before participating in the simulation. The door notes mimic, again, a real situation in which the doctor would be given some information on the patient and their background before entering the room to see the patient.

With the importance that the scripts play in the VCC, the file management system should be able to keep up with the fast pace necessary in medical education. The current system for creating, editing, finding, and reusing scripts is inefficient. The VCC is hoping for a file system that will provide easy access to scripts, allow searching and editing, generate information such as door notes from the scripts, and increase general efficiency.

II. Background and Related Work

The virtual clinical center (VCC) hosts training scenarios for medical students. These scenarios have scripts associated with them that contain medications the patient is taking and lab results, and how the human actor should behave (if humans are used in the scenario). Currently the VCC stores all of their documents in sharepoint and needs to manually modify each script, search for medication information, lab results,and door notes. The scripts also do not have any way to enforce a standard format. We will fix this by creating a document database that is interacted with via a frontend website, which allows the user to query the database for specific scripts, modify existing scripts and keep track of solder versions. Input new scripts in a standardized forum and extract specific information from scripts such as lab work and medication cards. Our team is experienced in web development and database systems. We are planning on using MongoDB and a webserver that uses REST APIs to communicate with the end user and integrate with existing systems such as Microsoft Outlook.

III. Project Overview

Describe your project problem in detail and summarize the project objectives.

Provide a detailed description of the goals and desired outcomes. You should discuss the intended outcomes of the project with your mentor and summarize them here.

This section should be detailed enough to show that your team has a clear understanding of the project objectives and outcomes. Please plan on having 1+ page text on “Project Overview”.

The goal of this project is to create a file management system for the scripts used in Standardized Patient Simulation at VCC. This file management system will include a database of scripts, as well as a web application for easy use by VCC employees. There are four main problems that we hope to solve. Our project objectives correspond to these four problems. There are also four goals that we hope to achieve if time allows.

Objective 1: Create a standardized script form

Current scripts are not standardized. Our objective is to create a form so that information can be manually entered, then automatically formatted into a standard script. The form will need to be editable for future years if the script is used repeatedly. This will require a form that is flexible to varying amounts of information, as well as varying users.

Objective 2: Accessible information from scripts

Scripts include information such as door notes or medication cards. Currently, these have to be manually retrieved and formatted from the script when needed for a simulation. Different portions of the script should be easily accessible, such that a door note is generated from the script database as a rather than being manually copied from the document.

Objective 3: Easy to update from year to year

Sometimes, actors play the same patients from year to year. Scripts should be easily editable so that the actor’s age should increase in the script to match what it is in real life.

Objective 4: Scripts should be searchable

The scripts are used for multiple simulations over the years, so the employees planning future simulations want to be able to find scripts that meet the requirements they want. The scripts need to be sortable based on the year of the learner, course, patient name, keywords, diagnosis, and body system involved. The database should be organized so that employees can find information on the type of script that they want.

There are four more objectives that are an eventual goal for the project. The first is Outlook integration, so that actors can be emailed directly from the application. The second would be

Sling integration, so that the scheduling app can be integrated. Another goal would be to have a second database that contains actor data so it is easier to contact actors that have played parts in the past. Our final objective is to have an AI summarization tool for the scripts.

IV. Client and Stakeholder Identification and Preferences.

Our primary clients are Grace Covarrubias, and Chris Martin, who represent the Virtual Clinical Center of the Elson S. Floyd College of Medicine. Their role involves managing the script database, ensuring consistency across simulation cases, and supporting faculty in running realistic and effective simulations. They need a system that's organized and adaptable so it can reduce redundant work and streamline preparation.

We are working with our client to replace the existing disorganized script storage and management process with a full stack web application. The current SharePoint database is messy and inconsistent, with scripts varying in format and requiring significant manual updates each year. Our system will introduce a standardized script for automated updates (such as adjusting patient birth years), and features that will allow staff to generate content like patient notes and medications with a single click. By building these solutions into a centralized and portable database, the project will drastically reduce the amount of manual effort required by faculty and staff.

In addition to the client's immediate needs, we also consider the broader group of stakeholders involved in medical simulation. Faculty and simulation designers will directly benefit from a simplified process for script creation and editing. Simulation staff and administrators, who prepare and run the exercises, will gain efficiency from automated data generation and a more navigable database. Students, while not direct users of the system, will indirectly benefit through more consistent and accessible case materials. IT personnel and future development teams will require clean and extensible code, along with proper documentation, to ensure long term maintainability.

Considering the perspectives of all these groups, our system will not only address the technical issues of script management but also improve the overall educational experience.

V. Glossary

CSS- A styling language used in web development to control the appearance of a website, including colors, fonts, layouts, and responsiveness. It works alongside HTML and JavaScript to make websites visually appealing and user friendly.

Go- An open-source programming language developed by Google. It is designed for building fast, scalable applications, particularly useful in backend services and systems where performance and concurrency are important.

IEEE- A professional association dedicated to advancing technology. In academic and professional contexts, IEEE is often referenced for its widely used standards, technical papers, and citation style

Webserver- A computer program or hardware device that delivers web pages to users through a browser. It processes requests (such as clicking a link) and responds with the correct content (such as text and images)

VCC- The Virtual Clinical Center (VCC) is the central point for all simulation-based training at the Elson S. Floyd College of Medicine. The VCC uses Standardized Patient Simulation, which involves individuals playing the role of a patient. These standardized patient encounters assist in the development and assessment of humanistic and clinical reasoning skills

MongoDB- A NoSQL database that stores information in flexible, JSON-like documents instead of traditional tables. It is often used for web applications because it can handle large amounts of unstructured data efficiently.

REST API- A set of rules that allows software applications to communicate over the web. A REST API provides access to data and services using standard HTTP methods (GET, POST, PUT, DELETE), making it easy for different systems to integrate.

Medication Card- A summary document that lists a patient's prescribed drugs, doses, schedules, and allergies. In medical simulations, these cards help students or participants quickly understand a patient's medication history and treatment context.

SharePoint- A Microsoft platform for document management and collaboration. It allows organizations to store, organize, and share files online, but without strict formatting rules, collections of documents can become disorganized or difficult to navigate.

VI. References

[1]“Virtual Clinical Center,” *Elson S. Floyd College of Medicine*, 2025. https://medicine.wsu.edu/about/departments-units/vcc/ (accessed Sep. 13, 2025).