DELIRIUM IN PAEDIATRIC ICUS

CSC3068 - Silicone Valley Samurais

OUR TEAM

Ewan Forsythe

Robbie Duncan

Adam Logan

Andrew Robb

TABLE OF CONTENTS


01
Introduction

What is the problem?

Subject Overview

Delirium is a complex illness which only recently started to be recognised and diagnosed that can be found in both adults and children. It can affect a person's awareness of their surroundings, their behaviour and very quickly deteriorate a person’s mental state. Due to the nature of the symptoms of delirium and how rapidly it can develop means it can be difficult to diagnose especially in the younger and elderly generation.

The effects of this:

- Currently the best solution now is to detox
- Delirium can hinder a child's cognitive development
- Can put inexperienced nurses in uncomfortable situations

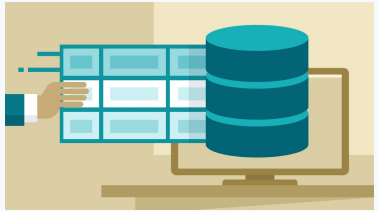
What needs to be done:

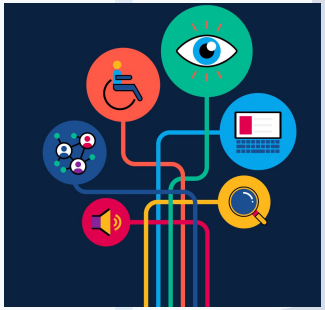
- A solid base for further research of treatments
- Sharing of knowledge between Paediatric ICUs
- Improved accessibility to education materials

What is the solution?

Solution Overview

This project is about delivering a software system to support a UK wide NHS clinical trial in the field of delirium in paediatric ICU. The trial is run from the QUB School of Nursing. Diagnosing and treating delirium is a poorly understood aspect of paediatric ICU medicine. This software system will include both an Audit functionality for research data and furthermore an e-learning environment for personal development of NHS staff.





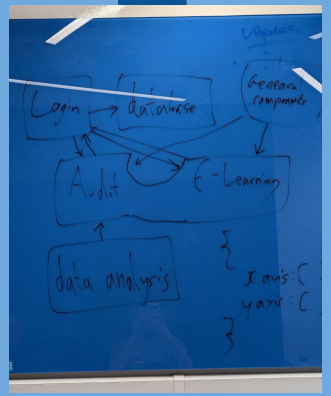
Key Features:

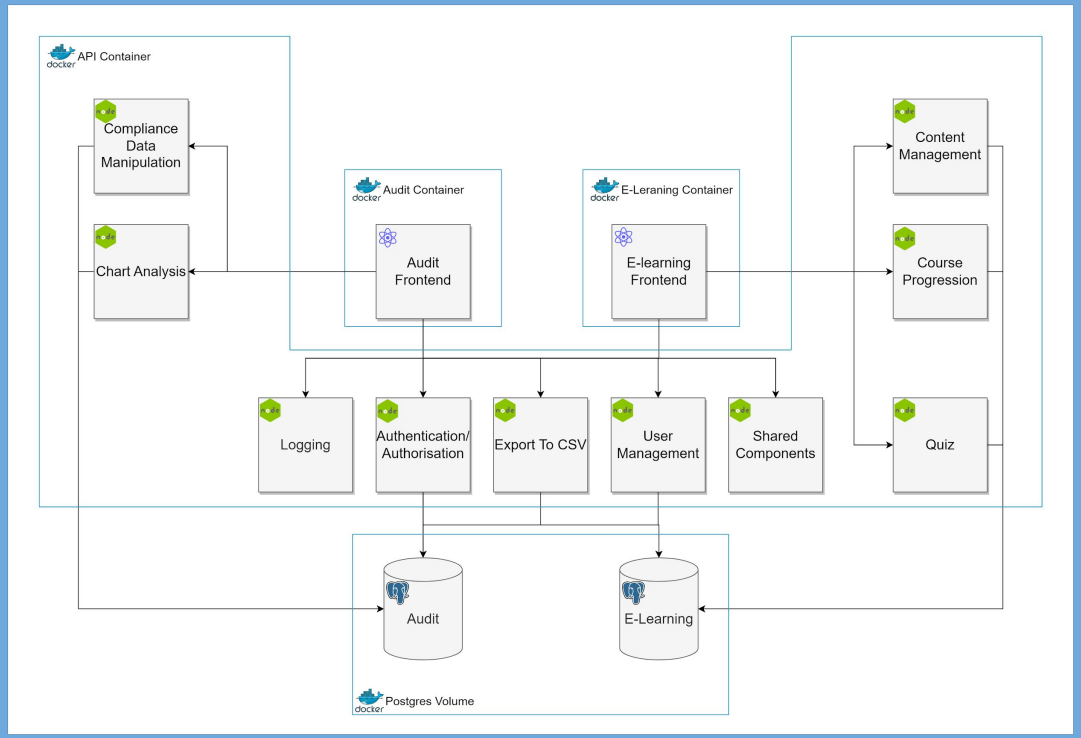
- User focused design
- Accessibility considerations across our solution
- Backend Database for data storage
- Data Visualisation
- Potential for Integrated E-Learning Packages

02

Design of the System

Block Diagrams

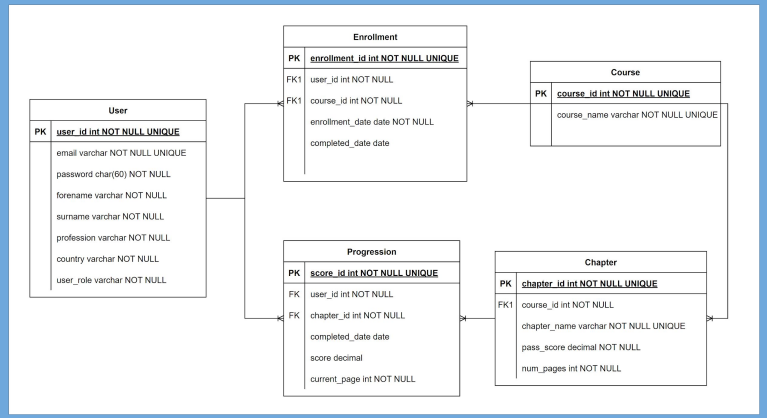


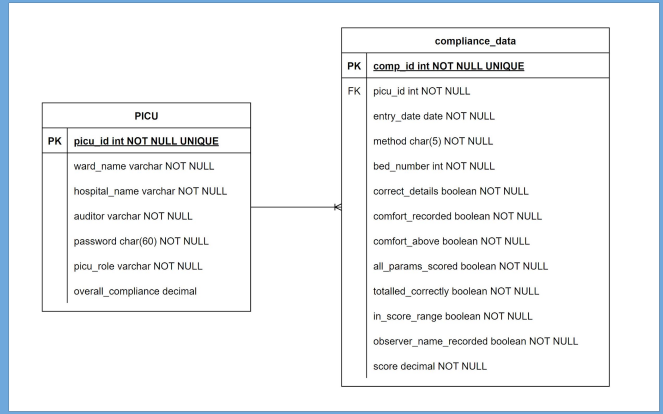


ER Diagrams

The below diagram was constructed from both the information the client wished to capture and to achieve the technical requirements

E-Learning Database





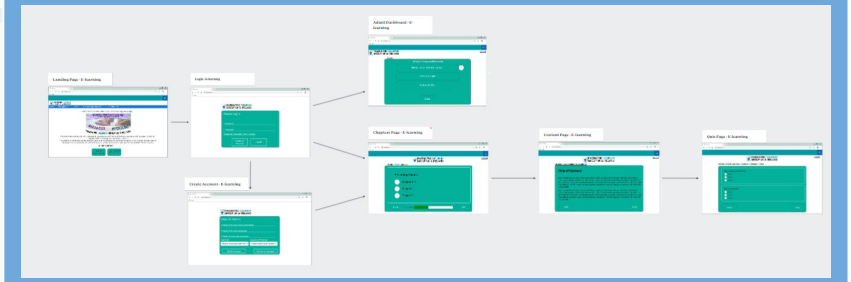
Audit Database

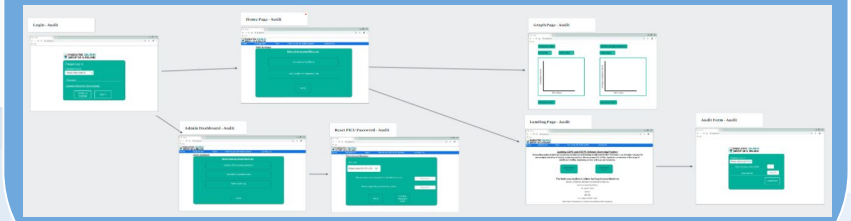
The information above was taken from the Excel spreadsheets used in the current audit system

Wireframe Diagrams

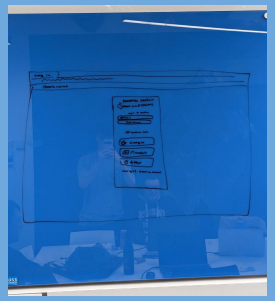
Link To Storyboard

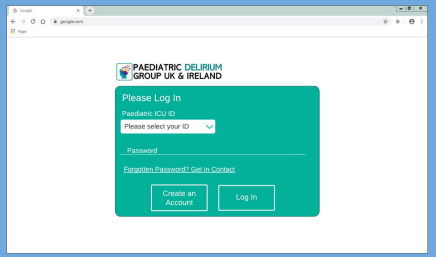
Overview of Storyboard



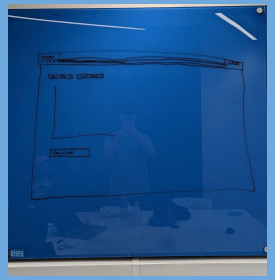


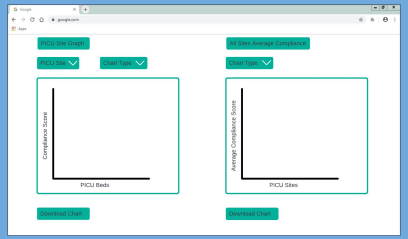
Audit Wireframes





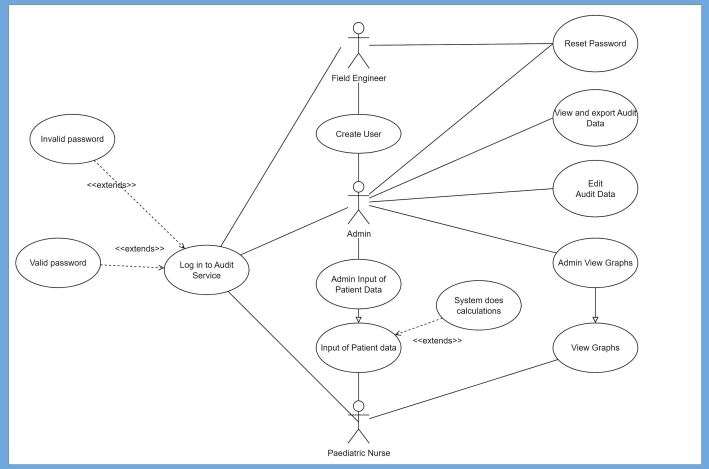
This is our original and digital wireframes for our Audit log in page





This our original and digital wireframes for the Audit graph pages which has since changed due to requirement changes

Use Case Diagrams

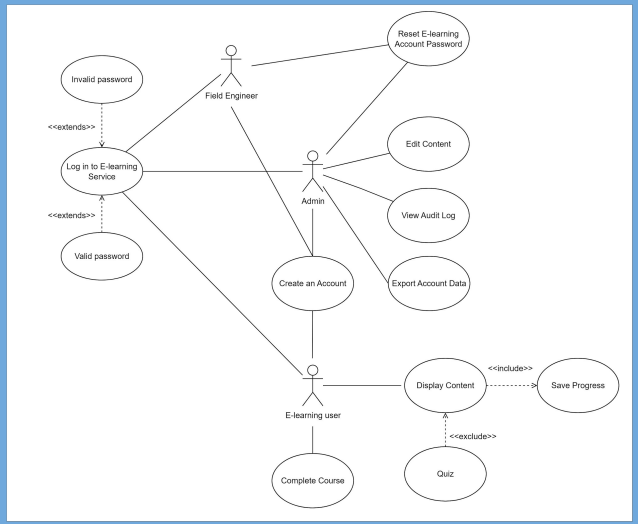


Audit Use Case Diagram

This use case Diagram for the Audit system was based of the requirements provided by the client

This use case Diagram for the E-Learning system was based off of the pre-existing Sandwich E-Learning course

E-Learning Use Case Diagram



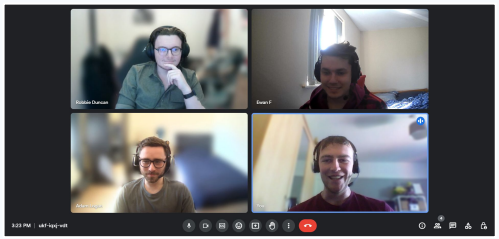
03

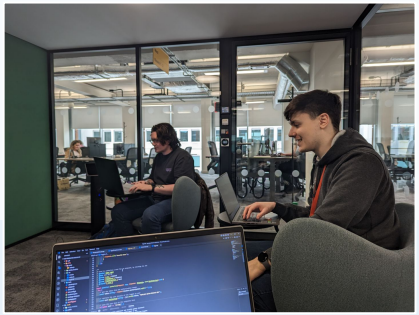
Implementation

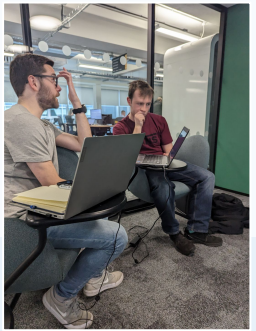
Working Together

Key Items:

- Team contract
  - Create Expectations
- Use a software for project management
  - Previous Experience
  - Delegate Tasks
- Use of Gitlab
  - Collaborating on code
  - Branching/Merging
- Use of G Suite
  - Previous Experience
  - Organisation of documents and meetings
- In-Person Meetings
  - Report Collaboration
  - Peer Programming
  - Group Learning Environment







Description of features

Audit System

Login System

Implemented a RBAC system with user's password being hashed

Data Input

Compliance Data can be entered into the system through a form in the application

CRUD

Basic CRUD endpoints were made to ensure connection to database

Data Visualisation

Displays the Audit Data in the Database as a Line Chart in the web application

Reason for prioritisation

- Basic functionality of the system
- Sets up the groundwork for a working system
- Majority of requirements are within the Audit system and therefore the focus was put onto this

Problems Encountered

GitLab Set Up

Acquiring SSH keys to connect to GitLab was a challenge

CORS

Although a security feature this hindered initial development

The Server

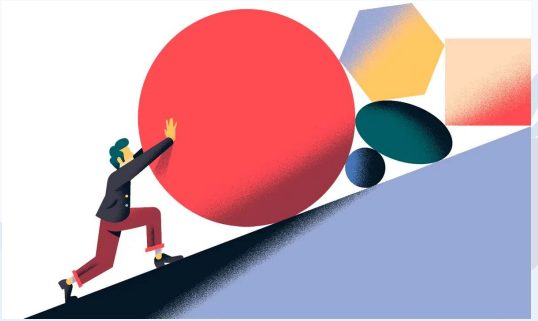
Issues with access rights

Chart.js

The differences between how packages act with React and JavaScript

Database Set Up

Problem with ensuring consistency across development environments



04

Prototype Demo

WHOA!

Now we will give a live demonstration on the functionalities in our prototype implementation.

05

Summary

SUMMARY

What we have covered:

What is the problem?

What is our proposed solution?

Our system design process

Our system design diagrams

How we have worked together

Features implemented

Reasons for prioritisation

Live prototype demonstration

THANKS FOR LISTENING!

ANY QUESTIONS?