

MICHIGAN STATE

UNIVERSITY

Beta Presentation

Electronic Laboratory User's Guide (eLUG) Modernization

The Capstone Experience

Team Henry Ford Innovations eLUG

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*From Students...
...to Professionals*

Project Overview

- Henry Ford Innovations- Detroit, MI
- One of the nation's leading healthcare systems recognized for its dedication to medical innovation, research, and patient care
- Project focuses on modernizing the Center for Precision Medicine (CPM)- within eLUG, ensuring that clinicians can easily access and interpret specialized genetic, molecular, and precision diagnostic tests that play a crucial role in personalized medicine
- Project will be baseline for the modern age eLUG, will provide clinicians a user-friendly interface that will save clinicians' time



Team Member's Technical Tasks

Technical Tasks Assigned

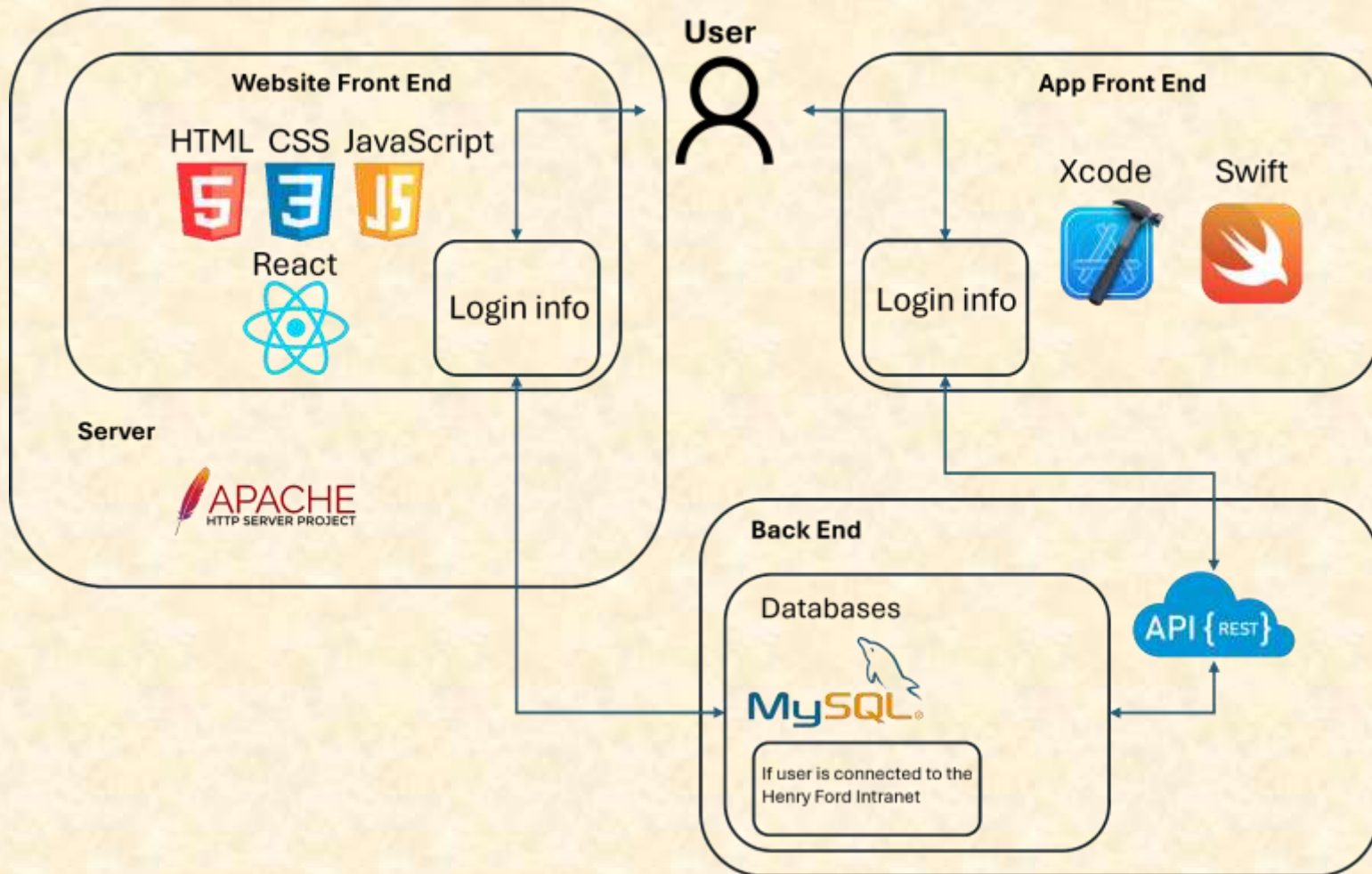
- Anushka Basani
 - Contact Page Layout, Report Detail Page Layout, Nav Bar Functionality
 - Clickable Phone and email links for users
 - Sidebar Links for web
 - Basic Search Filtering for iOS and Android App
- Trevor Jacobs
 - Connecting the front-end and back-end of the react app
 - Login functionality using database
 - Letter navigation system
 - Navbar creation
 - Upload and organize data within MySQL database
 - Upload all tube reference images
 - Help with in-house notes visibility
 - Creation of Reference pages and navigation system for the three reference pages
- Abhi Rao
 - Setting up MySQL Database, master table for iOS
 - Set up REST API for communication with iOS app and MySQL Database
 - Report List page, displays all the labs in the database in a scrollable list and shows relevant search text
 - Quickview feature, when a user holds and presses on a given lab, it pulls up key details for that lab, and can swipe down to return to the list
 - Advanced search feature, when a user has a typo on English or non-English words, it will still pull up the closest matches

Technical Tasks Completed

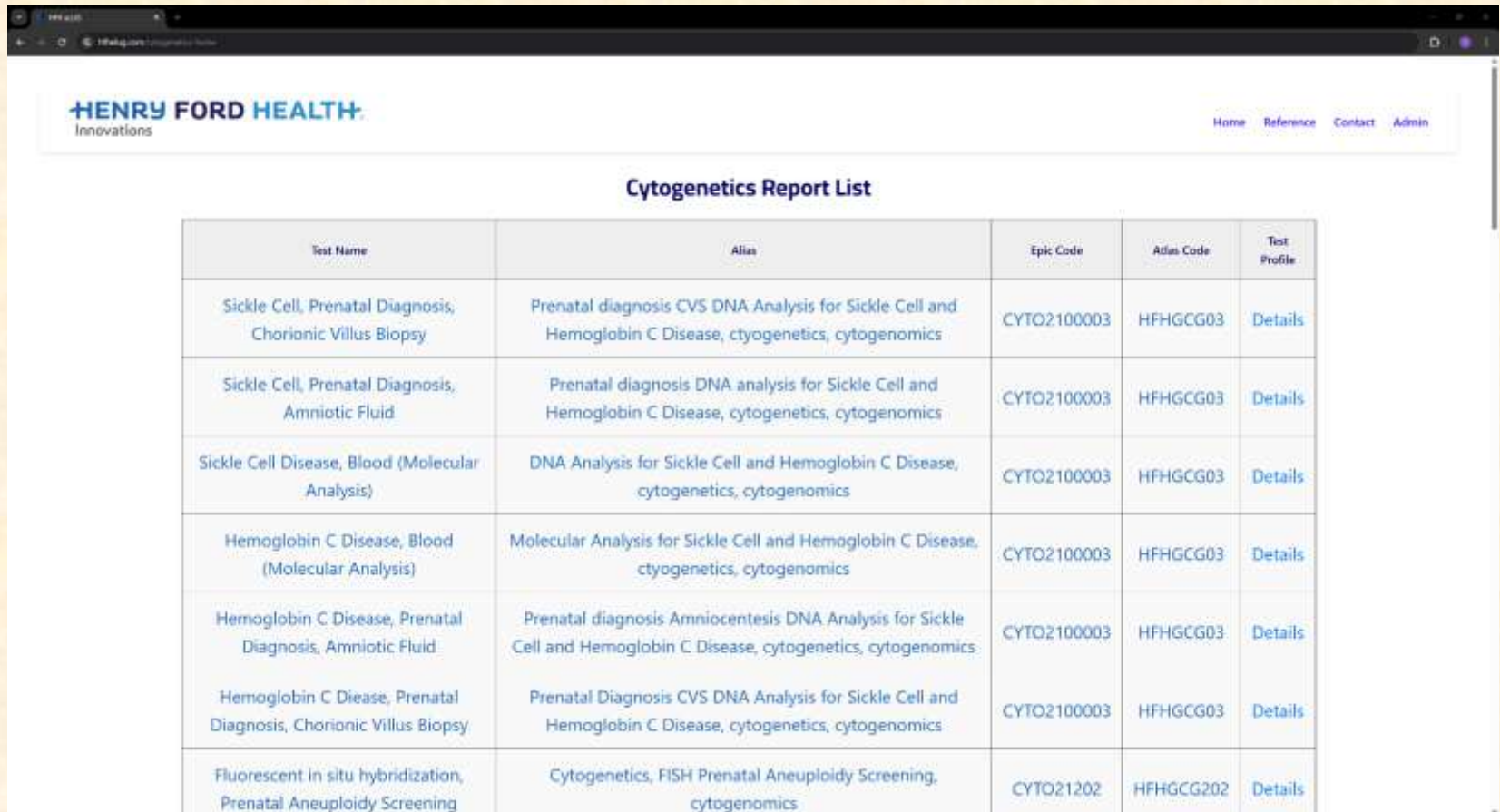
- Anushka Basani
 - Contact Page Layout, Report Detail Page Layout, Nav Bar Functionality
 - Clickable Phone and email links for users
 - Sidebar Links for web
 - Basic Search Filtering for iOS and Android App
- Trevor Jacobs
 - Successfully connected the front-end and back-end of the react app
 - Login functionality using database and role-based system
 - Letter navigation system works for each performing laboratory
 - Upload and organize data within MySQL database
 - Uploaded all tube reference images
 - Help with in-house notes visibility
 - Created of Reference pages and navigation system for the three reference pages
 - Helped create navbar
- Abhi Rao
 - MySQL Database has been created and is running, master table for iOS is completed
 - REST API is completed, iOS app is able to communicate with MySQL Database
 - Report List page is completed, displays all the labs in the database in a scrollable list, there is text at the top showing input and number of tests found
 - Quickview feature is completed, when a user holds and presses on a given lab, it pulls up key details for that lab, and can swipe down to return to the list



System Architecture



Report List Page – Web App



HENRY FORD HEALTH
Innovations

Home Reference Contact Admin


Cytogenetics Report List

Test Name	Alias	Epic Code	Atlas Code	Test Profile
Sickle Cell, Prenatal Diagnosis, Chorionic Villus Biopsy	Prenatal diagnosis CVS DNA Analysis for Sickle Cell and Hemoglobin C Disease, cytogenetics, cytogenomics	CYTO2100003	HFHGCG03	Details
Sickle Cell, Prenatal Diagnosis, Amniotic Fluid	Prenatal diagnosis DNA analysis for Sickle Cell and Hemoglobin C Disease, cytogenetics, cytogenomics	CYTO2100003	HFHGCG03	Details
Sickle Cell Disease, Blood (Molecular Analysis)	DNA Analysis for Sickle Cell and Hemoglobin C Disease, cytogenetics, cytogenomics	CYTO2100003	HFHGCG03	Details
Hemoglobin C Disease, Blood (Molecular Analysis)	Molecular Analysis for Sickle Cell and Hemoglobin C Disease, cytogenetics, cytogenomics	CYTO2100003	HFHGCG03	Details
Hemoglobin C Disease, Prenatal Diagnosis, Amniotic Fluid	Prenatal diagnosis Amniocentesis DNA Analysis for Sickle Cell and Hemoglobin C Disease, cytogenetics, cytogenomics	CYTO2100003	HFHGCG03	Details
Hemoglobin C Disease, Prenatal Diagnosis, Chorionic Villus Biopsy	Prenatal Diagnosis CVS DNA Analysis for Sickle Cell and Hemoglobin C Disease, cytogenetics, cytogenomics	CYTO2100003	HFHGCG03	Details
Fluorescent in situ hybridization, Prenatal Aneuploidy Screening	Cytogenetics, FISH Prenatal Aneuploidy Screening, cytogenomics	CYTO21202	HFHGCG202	Details



Test Description Page – Web App

The screenshot displays a web application interface for Henry Ford Health. At the top left is the logo "HENRY FORD HEALTH Innovations". On the top right are navigation links: "Home", "Reference", "Contact", and "Admin". The main heading is "Test Details: Hemoglobin C Disease, Prenatal Diagnosis, Chorionic Villus Biopsy". Below this is an alias: "Alias: Prenatal Diagnosis: CVS DNA Analysis for Sickle Cell and Hemoglobin C Disease, cytogenetics, cytogenomics". A table provides specimen details:

Specimen Container	Epic Code	Atlas Code	Collect Volume	Mix Volume	Availability	Test Priority
Sterile Screw Cap Tube 	CYT02100003	HFHGG03	20 to 30 mg	<20mg may require cell culture	Monday through Friday, day shift	ROUTINE

Below the table, there are two sections with links:

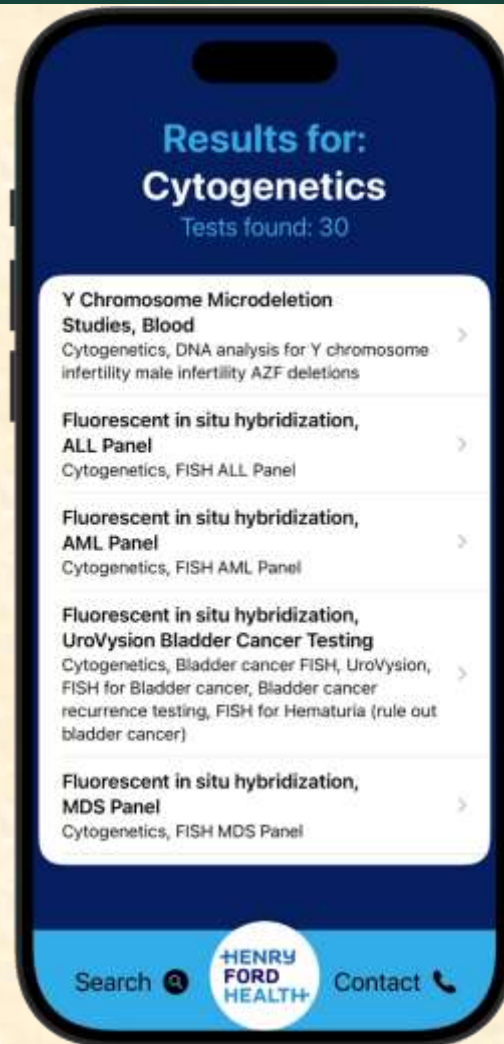
- Request Form:** [Click here for the test request form.](#)
- Informed Consent Booklet:** [Click here for the informed consent booklet](#)

At the bottom, there are two instruction sections:

- Collection Instructions:** Specimen is collected in a syringe (transabdominal) or in a catheter (transcervical) Test Requisition – Cytogenomics Prenatal
- Storage Instructions:** Store at ROOM TEMPERATURE



Report List Page – Mobile App



Test Description Page – Mobile App



What's left to do?

- Stretch Goals
 - Android version of app
 - Incorporating tests from other performing labs
 - Mobile app sidebar links
- Other Tasks
 - UI changes
 - Demo to pathology department



Questions?

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