Application Manual

CS6440 : Emergency Department Triage

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Getting Started / Special Instructions

Before we begin the deployment section, there is one special instruction for this project regarding deployment both locally and via the HDAP server. Besides the normal process of deploying, before running the application, it is important to navigate to the **/generate** directory for the backend regardless of environment. This would be:

https://apps.hdap.gatech.edu/emergency-department-triage-system-api/generate

remotely and http://localhost:5000/generate locally. Since we are using a public FHIR server, data is erased around 2AM EST and therefore our database and FHIR server get mismatched with IDs and references. Therefore, running this script detects orphaned records and generates new demo objects to use for this project. In a production environment, this will not be needed as database and FHIR transactions would be synced between the two systems.

Deployment: Remote

The application is deployed remotely on the HDAP server at:

https://apps.hdap.gatech.edu/emergency-department-triage-system-app/

which is the full working application frontend. This application communicates with our backend and database to display the overall program to the user. As mentioned previously, before using the application, please visit:

https://apps.hdap.gatech.edu/emergency-department-triage-system-api/generate

first to generate data for the demonstration. The URL above is our backend and will generate the required information even if it was previously wiped by the FHIR server.

Deployment: Local

Local deployment of the application is possible if there is some issue with the already-deployed version. To deploy each of the components, first clone the project at https://github.gatech.edu/gt-cs6440-hit-fall2020/Emergency-Department-Triage-System

and then navigate to the root of the project directory. Edit the .localenv file and set the DB_HOST variable to the IP address of your docker host (keep it the same if you are running it on localhost). Finally, run the following scripts in order in separate terminals to start the application:

- ./build.sh
- ./startDB.sh
- ./startFrontend.sh
- ./startAPI.sh

If you can not run shell scripts on your machine, open each of the files to get the docker commands and directories needed to run the containers.

Application Home Page

There are three options on the main page of the application:
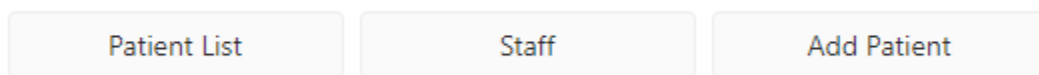
- Patient List – This button will bring you to a list of all the patients in the triage center.
- Staff – This button will bring you to a list of all staff members in the triage center.
- Add Patient – This button will bring you to a menu which allows you to add patients and search by either first name, last name, or id.

Patient List
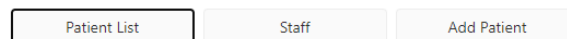
Name	Age	ESI ↑	Code	Display	Location	Checke...	Last Seen	Seen By	Details	
Michael Wil	13	1	ESI-1	Resuscitatio	TRIAGE	7.11 hours		James Atkin	Details	...
David Gonz	4	2	ESI-2	Emergent	TRIAGE	7.11 hours		Robert Mart	Details	...
Jennifer Smi	5	3	ESI-3	Urgent	TRIAGE	7.11 hours		Robert Mart	Details	...
Jeffrey Stev	9	4	ESI-4	Less urgent	TRIAGE	7.11 hours		April Peck	Details	...
Beverly Ca	25	5	ESI-5	Nonurgent	TRIAGE	7.11 hours			Details	...
Douglas Ra	26	5	ESI-5	Nonurgent	TRIAGE	7.11 hours			Details	...

The patient list screen shows a table with all of the patients being tracked by the triage system. Each patient row is color coded depending on their ESI code which determines

the severity of their injuries. For each row, there is a details button to show more information about a patient and give a few more actions.

Patient Detail
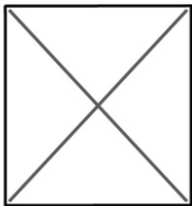
Shown above, the patient details screen allows the practitioner to see the crucial patient information while also modifying the following fields on the top menu

- Location – Shown on the bar at the top, location is a text field that a practitioner can use to signal where a patient is in the hospital if there are multiple locations a triage patient could be.
- ESI Code – Shown next to location, the ESI code ranges from 5 being the least serious to 1 being the most serious. The lowest (5) is assigned to new patients who do not have a practitioner.
- Practitioner – This is where a practitioner can be assigned to the patient, this must be completed in order to add notes and update the "last seen" time for a patient.

Below the top bar, there are three further options for modifying the patient:

- Add Note – This allows the practitioner to add a note on a patient, indicating you have seen them and updating the "last seen" value.

- Add Injury – This allows the practitioner to add injury reports on the patient, this will be explained further in a later section.
- Discharge – When the patient no longer needs to be tracked by the triage system, the practitioner can discharge them here to remove them from the patient list.

Add Injury Popup

Add Injury

Body Injury   System Injury

| Body Part ▼ | Injury Type ▼ | Pain Level: ──○── 0 |

Notes

Cancel   Add Body Injury

From the patient detail screen, when clicking on "Add Injury" the practitioner is presented with options to add injury notes on the patient. The options for this menu reference body parts which can then be matched with injury types and pain levels. Finally, for this section, you can add notes for the body injuries.

Add Injury

(●) Body Injury   (●) System Injury

System
Blood Loss   ▾

Blood Loss
Class 2: 750-1500 mL or 15-30% blood volume   ▾

Notes
test

Cancel   Add System Injury

By selecting the system option, there are several system options such as respiratory and blood observations that can be added along with notes similar to the previous section. These types of observations concern whole-body systems instead of specific body parts. Scrolling down to the very bottom of the patient detail menu, you can see the system injuries and the body injuries assigned to the patient.

System Injuries

System	Time ↑	Value
Procedure estimate	2020-12-02T02:30:5	Class 2

Body Injuries

Body Part	Time ↑	Injury	Severity
		No Rows To Show	

Staff Menu Option

Scrolling back up to the top of the menu, selecting the "Staff" button will display the list of available practitioners.

Profession Type ↑	Name	Specialty	Email	Contact
Doctor	Raymond Perez	Emergency	johnsonemily@hotmail.co	+1-601-783-6379x374
Doctor	Mike Pope	Emergency	michaeldiaz@gmail.com	(325)368-4221
Doctor	Tamara Gates	Emergency	collinsdavid@morales.co	5261708131
Doctor	Luis Soto	Emergency	michelle02@stewart-payn	+1-717-588-6920x44084
Doctor	Veronica Brown	Emergency	tylerjackson@gmail.com	367-411-7046
Doctor	James Ford	Emergency	margaretobrien@gmail.co	427-625-5747x0659
Doctor	Patricia Patel	Emergency	aimee43@yahoo.com	(443)748-4125
Doctor	Gregory Collins	Emergency	paul26@faulkner-smith.co	(772)340-5782x033
Doctor	Allison Day	Emergency	susanrodriguez@hernand	743.254.5192x55466
Doctor	Justin Garcia	Emergency	johnstonvalerie@gmail.co	001-712-834-9788x42771

This table shows all of the practitioners, their work status, and contact information. Practitioners with a work status of "Unavailable" will show here but will not be able to be selected on the patient detail menu.

Add Patient Option

Clicking on the "Add Patient" option next to the previous "Staff" button will show the following two buttons:

The left option allows you to search for an existing patient by FHIR ID, first name, or last name. Shown below, clicking the "search" button will show the patient and allow you to go directly to their details page.

Patient Id		
986468	Firstname	Lastname

Search

Firstname ↑	Lastname	Date of Birth	Add Patient
Charles	Brown	1972-02-03T00:00:00	Details

The right option allows you to add a patient given some of their information as shown below.

First Name	Last Name	Gender ▼	Date of Birth 📅	Email	+1 Telephone
Address - Street	Address - City	Address - State	Address - Country	Language ▼	Marital Status ▼

Add Patient

Tips & Tricks

The patient list can take a while to load given that we are searching for each patient via the FHIR server. If you know the patient it is quicker to just go to search for the patient individually to get to the detail menu.