



WAIT TIME MANAGEMENT

Team Progress Report

<https://youtu.be/eMzH-lknURo>

A mobile system whereby patients and families can see what is occurring in anticipation and during procedures.

Team & Roles



TRACY
HU
Project Manager

Epic EHR,
Population
Health, SQL,
Python



ALAIN
BROWN
Developer

Java, C++,
Python, Cloud
Services



JAMES
FRY
Developer

Javascript,
Node.js, Python,
PHP, SQL, React,
JQuery



RAJAN
CHAUDHARI
Developer

Python,
SQL/Hive/Pig,
Data
Science/Stat/ML



HEIDI
BRAUNSTEIN
Developer / QA

HCI, Java,
Python, Frontend
- Angular,
Backend - Java,
SQL, Data
Science, ML

Image from: [Wait Time Management Project Gantt Chart](#)

[illegible]

Phase I Details

WBS NUMBER	TASK TITLE	TASK OWNER	START DATE	DUE DATE	DURATION	PCT OF TASK COMPLETE
1	Milestone #1: Establish Business Case					
1.1	Research Business Case	Heidi, Tracy	10/4/17	10/8/17	4	100%
1.2	Finalize Proposal	All	10/4/17	10/8/17	4	100%
1.3	Solicit Stakeholder Feedback	All	10/4/17	10/14/17	10	100%
1.4	High level requirements	All	10/11/17	10/15/17	4	100%
1.5	Status Report #1	All	10/9/17	10/15/17	6	100%
	Presentation Schedule					
1	Business Case & Proposal	Tracy	10/4/17	10/8/17	4	100%
2	Technical Specifications	Alain & Heidi	10/18/17	10/22/17	4	100%
3	Team Progress Report	Tracy	11/8/17	11/12/17	4	100%
4	Final Presentation	James & Rajan	11/29/17	12/3/17	4	0%

Phase II (Technical Requirements)



WBS NUMBER	TASK TITLE	TASK OWNER	START DATE	DUE DATE	DURATION	PCT OF TASK COMPLETE
2	Milestone # 2: Technical Requirements					
2.1	Product Design	All	10/11/17	10/22/17	11	100%
2.2	Architecture Diagram	Alain	10/11/17	10/18/17	7	100%
2.3	Provider Environment set-up: Java & SQL database schema)	Rajan	10/11/17	10/18/17	7	100%
2.4	Mock-ups	Heidi	10/13/17	10/16/17	3	100%
2.5	Finalize Technical Specifications for sprint 1	All	10/22/17	10/25/17	3	100%

Phase II (Sprint 1)

WBS NUMBER	TASK TITLE	TASK OWNER	START DATE	DUE DATE	DURATION	PCT OF TASK COMPLETE
2.6	Sprint 1 (Dev)	Alain, James, Rajan, Heidi	10/23/17	11/5/17	12	100%
2.7	Database set up	Rajan	10/25/17	11/3/17	8	100%
2.8	Docker File	Alain	10/25/17	10/31/17	6	100%
2.9	Login - Basic Auth only	Alain	11/2/17	11/5/17	3	100%
2.10	Define end points for front end integration	Alain	11/1/17	11/5/17	4	100%
2.11	UI Design Sprint 1	Heidi	10/25/17	10/26/17	1	100%
2.12	Feature Documentation (ascii doc)	Heidi	10/25/17	10/26/17	1	100%
2.13	Status Report #2	All	10/25/17	10/29/17	4	100%
2.14	Settings - admin	James	10/30/17	11/7/17	7	100%
2.15	Patient - public view	James	10/30/17	11/7/17	7	100%
2.16	Room - admin	James	10/30/17	11/7/17	7	100%
2.17	Status Report #3	All	11/1/17	11/5/17	4	100%

Phase III Details

WBS NUMBER	TASK TITLE	TASK OWNER	START DATE	DUE DATE	DURATION	PCT OF TASK COMPLETE
3	Milestone # 3: Progress Report					
3.1	Sprint 2 (Dev)	Alain, James, Rajan	11/6/17	11/19/17	13	20%
3.2	Advanced Login Requirement discussion	All	11/8/17	11/15/17	7	80%
3.3	Deployment requirement discussion	All	11/8/17	11/15/17	7	80%
3.4	Integrate backend to database	Alain	11/8/17	11/19/17	11	0%
3.5	Patient- admin	James	11/6/17	11/19/17	13	0%
3.6	Patient card	James	11/6/17	11/19/17	13	0%
3.7	Polling for event changes	James	11/6/17	11/19/17	13	100%
3.8	Status Report # 4	All	11/15/17	11/19/17	4	0%
3.9	Sprint 2 (QA)	Heidi & Tracy	11/15/17	11/19/17	4	0%
3.10	User Acceptance Testing	Heidi & Tracy	11/15/17	11/19/17	4	0%

Phase IV Details

WBS NUMBER	TASK TITLE	TASK OWNER	START DATE	DUE DATE	DURATION	PCT OF TASK COMPLETE
4	Milestone # 4: Finalize & Present Build					
4.1	Status Report # 5	All	11/22/17	11/26/17	4	0%
4.2	Sprint 3 (Dev)	Alain, James, Rajan	11/20/17	12/3/17	13	0%
4.3	Adjust features based on user feedback (database, front end, back end)	Alain, James, Rajan	11/20/17	12/3/17	13	0%
4.4	Documentation on advanced login requirements	Alain & James	11/20/17	12/3/17	13	0%
4.5	Determine tasks for future team	All	11/20/17	12/3/17	13	0%
4.6	Finalize front end documentation	James	11/20/17	12/3/17	13	0%
4.7	finalize back end documentation	Alain	11/20/17	12/3/17	13	0%
4.8	finalize data model documentation	Rajan	11/20/17	12/3/17	13	0%
4.9	Finalize user documentation	Heidi, Tracy & Rajan	11/20/17	12/3/17	13	0%
4.10	Sprint 3 (QA)	Heidi & Tracy	11/27/17	12/3/17	6	0%
4.11	Final Sign-Off and Implementation	All	11/29/17	12/3/17	4	0%
4.12	Finalize Write-Up	All	11/29/17	12/3/17	4	0%

Application Overview v1

Patient Procedure ID:
B26

Radioactive XRay Procedure

Agenda:

- Check In
- Procedure
- Recovery
- Check Out

CURRENT TIME 1:05 PM			
	STATUS	TIME	LOCATION
I55	Checked In	12:15 pm	H1
D42	Recovery	12:22 pm	R23
K71	In Procedure	11:33 pm	O1
P12	In Triage	12:52 pm	T1
Y12	Checked In	12:50 pm	H1

LOGO

CURRENT TIME1:05 PM

RADIOLOGY CLINIC ADMINISTRATIVE OVERVIEW

PATIENTS		ROOMS			
ID	PATIENT NAME	STATUS	TIME	LOCATION	
B26	Tina Buchanan	Checked In	12:15 pm	H1	EDIT
I55	Magnus A. Knudsen	In Procedure	11:00 am	O2	EDIT
D42	Phillip Andrejew	Recovery	12:22 pm	R23	EDIT
K71	Eva Cambage	In Procedure	11:33 pm	O1	EDIT
P12	Pershant Kumar	In Triage	12:52 pm	T1	EDIT
Y12	Leopolda Puga Sando	<div>Select</div>	12:50 pm	<div>Select</div> <div>R23</div> <div>R24</div>	CANCEL

LOGO

CURRENT TIME1:05 PM

RADIOLOGY CLINIC ADMINISTRATIVE OVERVIEW

PATIENTS		ROOMS		
ROOM	STATUS	TIME	LOCATION	
H1	Ready	12:15 pm	H1	EDIT
T1	Full	11:00 am	O2	EDIT
O1	Cleaning	12:22 pm	R23	EDIT
O2	Turned Over	11:33 pm	O1	EDIT
O3	Occupied	12:52 pm	T1	EDIT
R10	<div>Select</div>	12:50 pm	<div>Select</div> <div>R23</div>	CANCEL

Visual Mockups - Patient Card v2



Patient Procedure ID:

B26

Radioactive XRay Procedure

Visual Mockups - Public Overview v2



LOGO

CURRENT TIME 1:05 PM

RADIOLOGY CLINIC PROCEDURE STATUS

Patient ID	STATUS	TIME ELAPSED	LOCATION
B26	Checked In	12 mins	Waiting Area
I55	In Procedure	23 mins	Operation Room
D42	Recovery	3 hours	Waiting Area
K71	In Procedure	1 hour 22 mins	Operation Room
P12	In Triage	17 mins	Waiting Area

Visual Mockups - Admin Patient Overview v2

LOGO

CURRENT TIME 1:05 PM

RADIOLOGY CLINIC ADMINISTRATIVE OVERVIEW



PATIENTS		ROOMS					
ID	PATIENT NAME	PROCEDURE	STATUS	TIME ELAPSED	EXPECTED TIME	LOCATION	ADD
B26	Tina Buchanan	Operation XRAY	Checked In	12 mins	30 mins	Waiting Area 1	EDIT
I55	Magnus A. Knudsen	Operation XRAY	In Procedure	23 mins	10 mins	Operation Room 2	EDIT
D42	Philip Andrejew	Other Operation	Recovery	3 hours	3 hours	Waiting Area 2	EDIT
K71	Eva Cambage	Other Operation	In Procedure	1 hour 22 mins	1 hour	Operation Room 1	EDIT
P12	Pershant Kumar	Operation XRAY	In Triage	17 mins	30 mins	Waiting Area 1	EDIT
Y12	Leopolda Puga Sandoval	Select					CANCEL

Visual Mockups - Admin Room Overview v2

LOGO

CURRENT TIME1:05 PM

RADIOLOGY CLINIC ADMINISTRATIVE OVERVIEW



PATIENTS		ROOMS		
ROOM	STATUS	TIME ELAPSED	EXPECTED TIME	
Waiting Area 1	Ready	12 mins	30 mins	EDIT
Waiting Area 1	Full	23 mins	30 mins	EDIT
Operation Room 1	Cleaning	3 hours	2 hours	EDIT
Operation Room 2	Turned Over	1 hour 22 mins	2 hours	EDIT
Operation Room 3	Occupied	17 mins	30 mins	EDIT
Operation Room 4	<div>Select</div>	0 mins	30 mins	CANCEL

Visual Mockups - Admin Configuration Settings

LOGO

CURRENT TIME 1:05 PM

RADIOLOGY CLINIC ADMINISTRATIVE CONFIGURATION SETTINGS



+ ROOMS

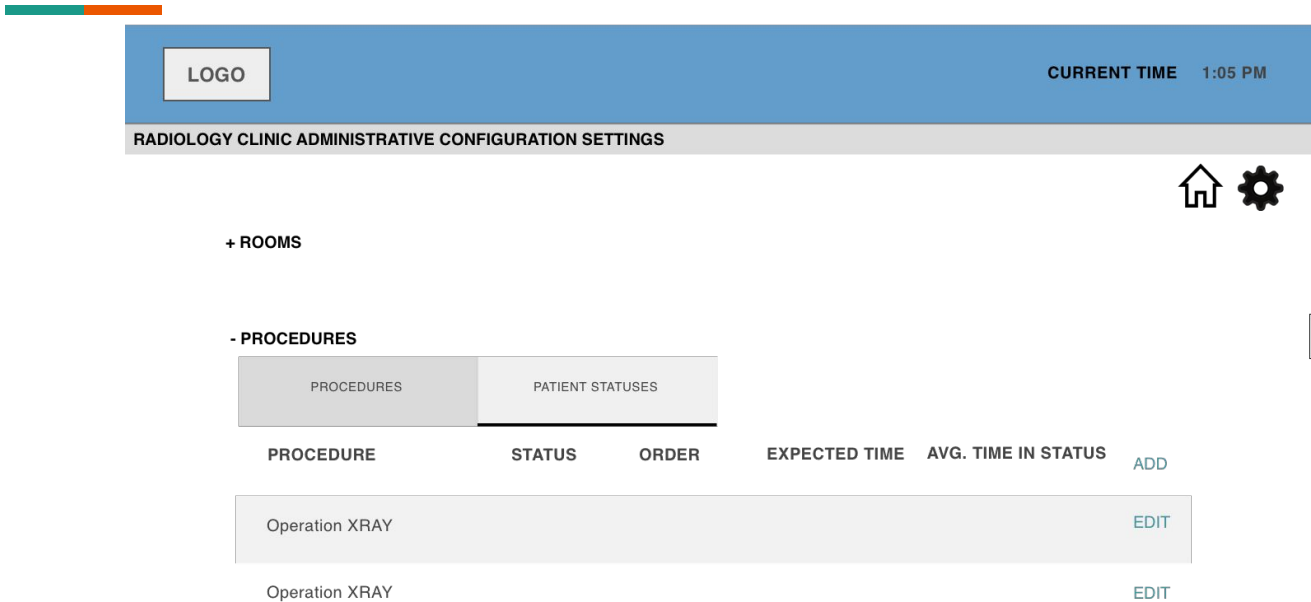
- PROCEDURES

PROCEDURES

PATIENT STATUSES

PROCEDURE NAME	EXPECTED TIME IN PROCEDURE	AVG. TIME IN PROCEDURE	ADD
Operation XRAY			EDIT
Operation Y			EDIT
Operation Z			EDIT
Test AB			EDIT

Visual Mockups - Admin Configuration Settings



Build in Progress



Patient Statuses

Current Time: 6:57 pm

Patient ID	Status	Time Elapsed	Location
P12	In Procedure	10 days	T7
B32	In Procedure	10 days	H1
D42	In Procedure	10 days	R32
K71	In Triage	10 days	OR3
I55	Recover	9 days	ICU

<http://wtm.banditdevelopment.com/>

Build in Progress

Wait Time Management



Radiology Clinic Administration

Patients

Rooms

Room	Status	Time Elapsed	Expected Time	
Operating Room 3	-- Select Room Status --	10 days	240 minutes	Cancel
Operating Room 1			0 minutes	Edit

Login: admin
Password: adminpass

<http://wtm.banditdevelopment.com/admin/>

Build in Progress

Wait Time Management



Radiology Clinic Administrative Configuration Settings

Room

Procedure

Rooms

Room Types

Room Statuses

Room Name

Room Type

Add

Operation Room 1

Operation Room

Edit

Waiting Area 1

Waiting Area

Edit

<http://wtm.banditdevelopment.com/admin/settings/room>

Docker Deployment



README.md

Wait Time Management

Delivery to Emory (These instructions to be shared via email)

Download public repo

Download: <https://github.com/cs6440-the-a-team/Wait-Time-Management/archive/master.zip>

or check out with git

```
git clone https://github.com/cs6440-the-a-team/Wait-Time-Management.git
```

Install Docker

Instructions for your operating system can be found here: <https://docs.docker.com/engine/installation/>

Build and run docker containers

This will launch 3 docker containers, one for the database, one for the frontend, and one for the backend. The front end will serve on port 80 for http and 443 for https SSL. You may test succesful deployment by navigating in your web browser to the hostname where this has been installed. If testing from the same server simply open <http://localhost> in your browser.

```
docker-compose up
```

Further Research



Image sourced from: <https://www.helpnetsecurity.com/2013/06/07/what-are-users-doing-after-log-in/>

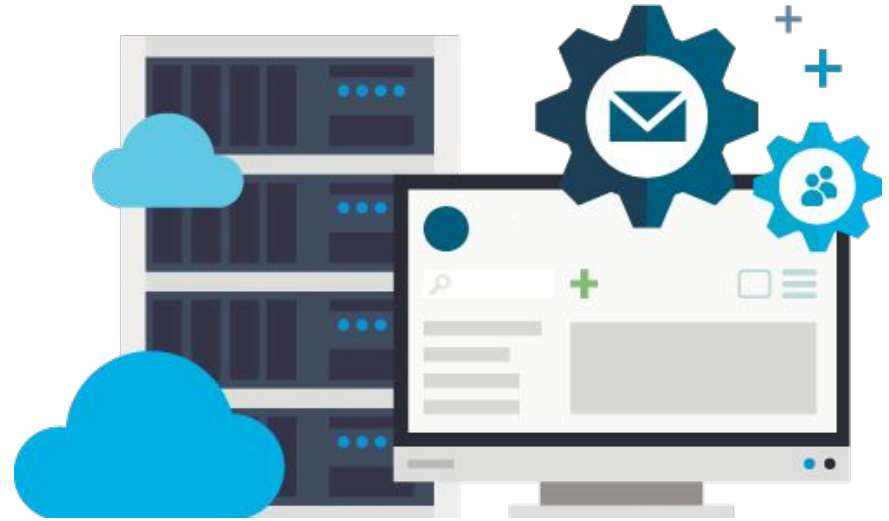


Image sourced from: <https://www.whmcs.com/web-hosting/>