DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING
THE UNIVERSITY OF TEXAS AT ARLINGTON

SYSTEM REQUIREMENTS SPECIFICATION
CSE 4316: SENIOR DESIGN I
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SMART HOSPITAL DEV TEAM
S.H. MANAGEMENT TOOL

ALLISON JOHNSGARD
EDWARD FANKHAUSER
NARAYAN RIMAL
NEELIM HAIDER
VICTOR GARCIA

REVISION HISTORY

Revision	Date	Author(s)	Description
0.0.1	07.15.2016	EF	document creation
0.0.2	10.05.2015	AJ, EF, NR, NH, VG	Turn-in candidate 1
0.1.0	10.12.2015	EF	First Turn-in

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1 Product Concept

This sections describes the purpose, use, and intended user audience for the Smart Hospital Management Tool. The Smart Hospital Management Tool that performs managing the inventory and keeps track of employees' schedules. The Smart Hospital faculty and students will be able to schedule simulations, check out tools, clock their worked hours, and iventory management.

1.1 Purpose and Use

The Smart Hospital Management Tool is a web-base software application to help the Smart Hospital manage their inventory, employee schedules, time, generated reports, and other factors. The Smart Hospital faculty and students will access the Smart Hospital Management Tool through a web browser and schedule simulations.

1.2 Intended Audience

The Smart Hospital Management Tool will be used by the Smart Hospital faulty, graduate students, and undergraduate students. In the future, other colleges may wish to incorporate the software which will be freely available.

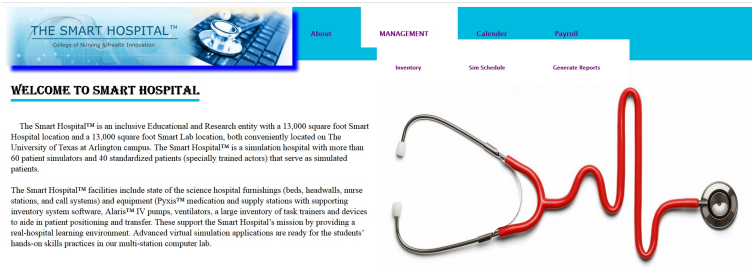

Figure 1: UTASmart.com Placeholder

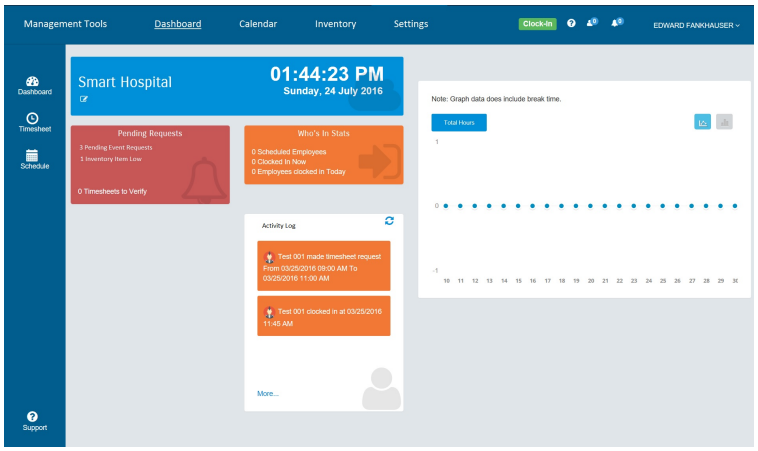

Figure 2: Timeclockwizard.com derived website

2 Product Description

The Smart Hosptial Management Tools website is a culmination of multiple websites and software tools used by UT Arlington's Smart Hospital. The product focuses on procedure and work scheduling, allowing users of the tools to track, who, what, and where aspects are scheduled for a hospital procedure, along with inventory management.

2.1 Features & Functions

The homepage of the toolset will allow a user to visit sections of the website that they are allowed access to. A student, for instance, should be able to visit the scheduling area and request procedures that would be approved by a manager or director. A management section, as seen in the early first concept screen shot, permits item tracking and medicine stock views. A calendar will contain scheduled events that keep track people and items that may be used at any specific time. Faculty workers can also use the website to clock in and clock out at manager specified locations based on ip addresses. Finally, a portion of tools will allow managers and teachers to look over reports including worker schedules, hours worked, time for procedures, and procedure participants.

2.2 External Inputs & Outputs

Describe critical external data flows. What does your product require/expect to receive from end users or external systems (inputs), and what is expected to be created by your product for consumption by end users or external systems (outputs)? In other words, specify here all data/information to flow into and out of your systems. A table works best here, with rows for each critical data element, and columns for name, description and use. Users shall be able to create accounts.

2.3 Product Interfaces

The main input from users will be user account creation, Specify what all operational (visible) interfaces look like to your end-user, administrator, maintainer, etc. Show sample/mocked-up screen shots, graphics of buttons, panels, etc. Refer to the critical external inputs and outputs described in the paragraph above.

3 Customer Requirements

This section shows requirements directly provided by the needs of customer stakeholders as well as supplimentary requirements added on by the dev team in response to customer requirements.

3.1 Simulation Scheduling

3.1.1 Description

The website shall allow the students and faculty to schedule who is supposed to be at what station to perform their simulation.

3.1.2 Source

Soohyun Kim

3.1.3 Priority

Critical

3.2 Simulation Request Form

3.2.1 Description

The website shall allow students to request a simulation.

3.2.2 Source

Soohyun Kim

3.2.3 Priority

High

3.3 Simulation Request Approval

3.3.1 Description

The website shall allow simulation request approval.

3.3.2 Source

Soohyun Kim

3.3.3 Priority

High

3.4 Faculty Hour

3.4.1 Description

The website shall keep track of total worked hours by a student worker.

3.4.2 Source

Soohyun Kim

3.4.3 Priority

Critical

3.5 Inventory Display

3.5.1 Description

The website shall contain a section where inventory is displayed.

3.5.2 Source

Jacquelyn Donaldson

3.5.3 Constraints

Use of Scanning System

3.5.4 Priority

High

3.6 Inventory Database

3.6.1 Description

The website shall contain a database where inventory is held.

3.6.2 Source

Dev Team

3.6.3 Standards

SQL, Node.js

3.6.4 Priority

Critical

3.7 Inventory Supply Alert

3.7.1 Description

The website shall send an email to alert when inventory supply is low.

3.7.2 Source

Jacquelyn Donaldson

3.7.3 Priority

High

3.8 Account Specific Access

3.8.1 Description

Permission to access website areas shall be set based on the account details.

3.8.2 Source

Soohyun Kim

3.8.3 Priority

Moderate

3.9 Student Faculty Schedule Reminder

3.9.1 Description

The website shall send a schedule of the upcoming work week every sunday morning to the student worker.

3.9.2 Source

Soohyun Kim

3.9.3 Priority

Moderate

3.10 Student Faculty Schedule Restraint

3.10.1 Description

The website shall deduct 30 minutes for lunch if the schedule is longer than 6 hours.

3.10.2 Source

Soohyun Kim

3.10.3 Priority

Low

3.11 Schedule Conflict Prevention

3.11.1 Description

The website shall prevent any schedule conflicts.

3.11.2 Source

Soohyun Kim

3.11.3 Priority

Moderate

3.12 Data Charts

3.12.1 Description

User shall be able to enter data and be able to display this data in the forms of charts and graphs.

3.12.2 Source

Soohyun Kim

3.12.3 Priority

Low

3.13 Print Payroll Report

3.13.1 Description

The website shall be able to print out monthly reports of total number of hours worked per student worker.

3.13.2 Source

UTA Payroll Office

3.13.3 Priority

High

3.14 Inventory Calendar

3.14.1 Description

The website shall allow inventory to be attachable to simulation events.

3.14.2 Source

Stone Kim

3.14.3 Priority

Moderate

3.15 Inventory Add

3.15.1 Description

The website shall allow the addition of an item to the Inventory Database.

3.15.2 Source

Jacquelyn Donaldson

3.15.3 Priority

Moderate

3.16 Workstation Tracker

3.16.1 Description

The website shall keep track of the name of the person booking at the workstation.

3.16.2 Source

Stone Kim

3.16.3 Priority

Moderate

3.17 Barcode Scanner

3.17.1 Description

The website shall incorporate a barcode scanner to help with inventory tracking.

3.17.2 Source

Stone Kim

3.17.3 Priority

Moderate

3.18 Touch Size UI

3.18.1 Description

The website shall accomadate touch size buttons.

3.18.2 Source

Stone Kim

3.18.3 Priority

Low

3.19 Change Password

3.19.1 Description

The website shall allow the registered users to change their passwords.

3.19.2 Source

Stone Kim

3.19.3 Priority

Moderate

3.20 Inventory Log

3.20.1 Description

The website inventory tracker shall keep a log of items being removed and added.

3.20.2 Source

Stone Kim

3.20.3 Priority

Low

3.21 Calendar Event Sorting

3.21.1 Description

The website calendar shall be sortable by Event type, Time, Inventory Items, and Persons.

3.21.2 Source

Stone Kim

3.21.3 Priority

Low

3.22 Manager Reports

3.22.1 Description

The website shall alert managers of activity of managed faculty members.

3.22.2 Source

Stone Kim

3.22.3 Priority

Moderate

3.23 Calendar Log

3.23.1 Description

The website calendar shall keep a log of added and removed simulation events.

3.23.2 Source

Stone Kim

3.23.3 Priority

Moderate

3.24 Activity Log

3.24.1 Description

The website shall keep track of website events.

3.24.2 Source

Dev Team

3.24.3 Priority

Low

3.25 Work Schedule Calendar

3.25.1 Description

The website shall provide a time sheet calendar for student faculty.

3.25.2 Source

Dev Team

3.25.3 Priority

Low

4 Packaging Requirements

This section describes the availability of code to the project stakeholders and for public use.

4.1 Source Code Delivery

4.1.1 Description

The source code shall be delivered to stakeholders directly via USB.

4.1.2 Source

Dev Team

4.1.3 Priority

Moderate

4.2 Website Domain

4.2.1 Description

The website shall be hosted at utasmart.com.

4.2.2 Source

Stone Kim

4.2.3 Priority

Critical

4.3 Source Code Avaliability

4.3.1 Description

The source code shall be available on the SmartHospital gitHub respository.

4.3.2 Source

Dev Team

4.3.3 Priority

Moderate

4.4 Amazon Web Services

4.4.1 Description

The project shall run on the Amazon server provided by Soohyun Kim

4.4.2 Source

Soohyun Kim

4.4.3 Priority

Critical

5 Performance Requirements

The performance section relates to how fast the website will respond to user input, queries, and page loads.

5.1 Database Load

5.1.1 Description

The database shall load in under 1 second.

5.1.2 Source

Dev Team

5.1.3 Constraints

Connection Speed

5.1.4 Priority

Low

5.2 Inventory List Load

5.2.1 Description

The inventory list shall load in under 1 second on each new search query.

5.2.2 Source

Dev Team

5.2.3 Constraints

Connection Speed

5.2.4 Priority

Low

5.3 Calendar Display Load

5.3.1 Description

The Calendar shall load in under 1 second on each view.

5.3.2 Source

Dev Team

5.3.3 Constraints

Connection Speed

5.3.4 Priority

Low

5.4 UI Adjustment Speed

5.4.1 Description

The UI shall adjust to resizing as the website borders are moved.

5.4.2 Source

Dev Team

5.4.3 CONSTRAINTS

Connection Speed

5.4.4 PRIORITY

Low

6 Safety Requirements

This section covers safety features that the Smart Hospital Management Tools will implement.

6.1 Location Aware Clock

6.1.1 Description

The website shall allow clock ins to be limited to specific location.

6.1.2 Source

Stone Kim

6.1.3 Priority

Moderate

6.2 Password Recovery

6.2.1 Description

The website shall allow the registered users to recover their password.

6.2.2 Source

Dev Team

6.2.3 Priority

High

6.3 Password Encryption

6.3.1 Description

The website shall encrypt passwords that are saved to the database.

6.3.2 Source

Dev Team

6.3.3 Priority

Low

7 Maintenance & Support Requirements

This sections describes how the product will be maintained. Dev Team will provide support until May 2017. After this time, the maintenance will be up to the Smart Hospital faculty. Also, a user manual will be provided to the Smart Hospital faculty in order for the faculty to be able to operate the software.

7.1 Maintenance

7.1.1 Description

The team will provide short term maintanence up until May 2017.

7.1.2 Source

Dev Team

7.1.3 Priority

Future

7.2 User Manual

7.2.1 Description

The team shall provide a manual covering how to do certain things such as adding inventory items.

7.2.2 Source

Dev Team

7.2.3 Priority

Moderate

8 Other Requirements

This section describes requirements that did not fit into the other categories.

8.1 Personel Database

8.1.1 Description

The website shall contain a database of students and faculty associated with the Smart Hospital.

8.1.2 Source

Dev Team

8.1.3 Standards

N/A

8.1.4 Priority

High

8.2 Alternate Sign-in

8.2.1 Description

The website shall allow creation of website based accounts.

8.2.2 Source

Dev Team

8.2.3 Standards

N/A

8.2.4 Priority

Critical

9 Future Items

This section describes the future items. Items that will not be addressed due to time constraints and could be added by another dev team in the future.

9.1 UTA Single Sign-on

9.1.1 Description

The website shall incorporate the UTA single sign-on system with the log in system for the Smart Hospital website.

9.1.2 Source

Soohyun Kim

9.1.3 Constraints

OIT Needs to allow access

9.1.4 Priority

Future

9.2 Room Designation

9.2.1 Description

The system shall display the location of available rooms for a user wanting to schedule a room.

9.2.2 Source

Soohyun Kim

9.2.3 Priority

Future