INB201 PROJECT DOCUMENTATION

Townsville Children's Hospital Integrated Information System

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Contents

1.0 Project overview

The following document summarises the development, building and presentation of the newly developed website for Townsville Children's hospital; created, in agreement equally between:

Isabella Hunt – n8600040 Programming- 10% Documentation-90%	
Petter Harsem --n8683417 Programming – 30%	
Lucas Preedy --n7167903 Programming – 30%	
Thomas Kirke –n8832382 Programming -30%	
Alex Bray --n7556985 Database – 100% Documentation – 10%	

Team Information

Our team of five have broken down sections of the website and documentation tasks into giving equal responsibility to every member; some tasks have overlapped due to that particular team member being more apt to complete the task. For example, database manager and designer Alex would have far better knowledge of how the database has been designed and why then anyone else on the team, while documentation and business manager Isabella used her programming knowledge to design the website. The roles consisted of:

- Lucas and Petter – programmers
- Thomas – CSS, HTML and design
- Alex – Database
- Isabella – Documentation and website design

All team members spent an equal amount of time contributing to the various tasks needed to be completed for a fully functioning website.

The Townsville children's hospital website has been undertaken after the hospital desired to eradicate all paperwork from their hospital and became interested in a cleaner and more efficient means of running the considerably large institution. The goal was to create a system in which timetables, document and patient information could be looked at and edited, and be accessed universally without any risk of deletion, misplacement of false information being handled on board. An intranet for staff, doctors and nurses would perfectly suit these needs. As an intranet it would only be accessible to hospital staff and not the general public or patients.

A multi-tiered, role-based log in system would allow staff access on a need-to-know security basis which they can access from hospital computers, smartphones or their home computers. This system would allow for lowered risk of attack from outside forces or tapering of data either on purpose or

accidentally by staff. This secure system would also allow the communication of information to and from other hospitals to allow for transferred information, staff and patients to be tracked and cared for with ease. The system developed will improve work time and staff productivity; by erasing the need for paper to be moved around and making editing and retrieving information instant, relieving the time spent organising and maximising the efficiency of the entire hospital.

2.0 Website Details and Requirements

As a system made for hundreds of staff members, most with the need for dozens of different needs (scheduling, editing, uploading, sending and receiving data are just a few) the functional requirements for the system must be designed appropriately, with the goal to not be overwhelming or inefficient to staff. Functional requirements refer to certain behaviour of a system, and the non-functional requirement refers to a performance characteristic about one of the particular behaviours. As the finalised website has been optimised to be used on one particular system database and set of computers, this website has been optimised to be used in Google Chrome and we recommend its use when viewing and using this website.

2.1 Functional

- Database connected to website
- Staff can edit and input patient information
- Role-based security, based on access level
- Send patient data to different hospitals
- Website warns staff if adding patient data will clash with previously added data

2.2 Non-Functional

- All staff and can access data required 24/7
- Website is aesthetically simple for easy use
- Data is easily changed without help by all permitted staff members
- Data is secure and has backup

2.3 User Roles

The hospital will have 5 functional roles for different staff; doctors, nurses, medical technicians, receptionists and administrators. Once logged in, the availability of data and freedom of action will depend on the user's level of authority.

2.3.1 Administrators

Administrators have the highest security rank and will be able to access and manage all areas of the intranet. They can assign users to other areas and give permissions, edit any pages or any areas of data and print or edit these for any purpose. Administrators will not necessarily need to see patient data and medical results but will have access to edit and fix pages in case the doctors or medical technicians run into errors while using the website. They will also be able to enable users to change their passwords or in editing account information.

2.3.2 Doctors

Doctors and specialists will have access to timetables, patient records, medical information such as x-rays and test results, and be able to access all staff details.

2.3.3 Executive User

The hospital's executive management team will require access to high level reporting and statistics. in terms of data, the executive team will not require any real modification access, only to extract data.

2.3.4 Nurses

Nurses will be able to access all staff details, access doctor's orders and medical technicians uploads; but will have relatively low level of access.

2.3.5 Receptionists

Receptionists deal with accepting and taking the information of patients to the ER and hospital lobby. They will have access to necessary patient details and will be able to enter new data or users, but will not be able to edit patient data. As nurses and doctors are in charge of decision making and accessing private patient information (such as x-ray and test results) the receptionist's data access is limited and they have the lowest security rank of any user within the system.

2.4 User Stories

User stories help define the websites structure and what priorities the designer and programmers prioritize on. User stories are also kept in mind while creating the user guides and during user testing. The entire list of user stories, as well as their administrative rank can be found in appendix section 9.1.

2.5 User Testing

User testing (also known as acceptance tests) go hand in hand with user stories in developing and fleshing out the website. User testing, performed by an individual not involved in the development of the website, is the start of a process of making sure the user experience is tested and the website explored from every possible perspective (our hierarchical list of users, in this case) so that when end-users begin using the system, it's usability is proven.

2.6 Prototype layouts

The layout scheme chosen was directed under the desire for a very simple system which allowed for the links and most necessary data to be available to the users.
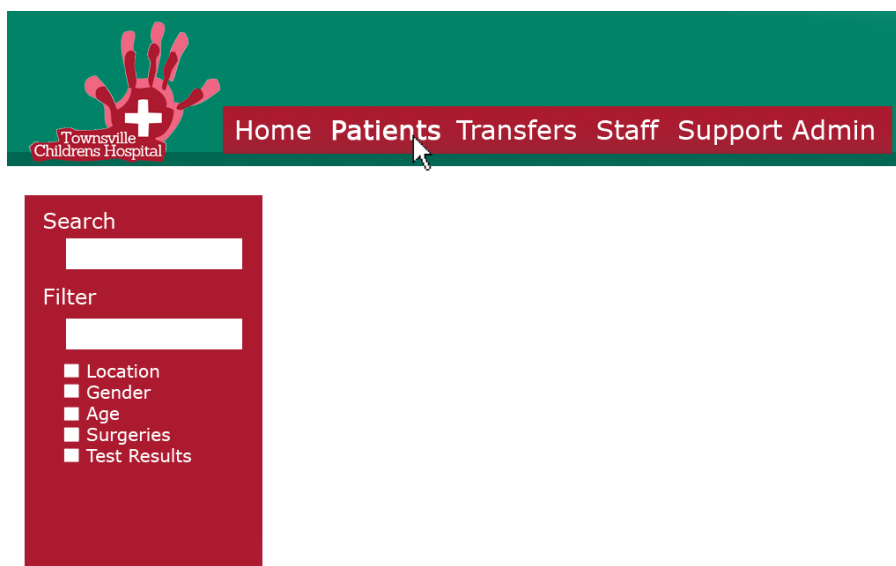
A mock-up of the website made in Photoshop

The above was designed as a concept to help with the navigational flow, based on what the user's priorities would be and how they could access a particular page as quickly as possible. In this case, the quick toolbar sits at the top of each page (as it will load first and does not need to be access by scrolling down or to the side) and sub-links can be accessed from the lower down tool bar. The tool bar placement shown is a widely popular layout scheme, intended to familiarise any user no matter what their experience with websites.

The colour scheme chosen, red-on-green has a familiar hospital ring to it without being boring or feeling 'sanitised'. This was an important touch from a design point of view; as a children's hospital is expected to reach beyond normal, adult patient care. A brighter colour scheme helps commend this website as one that caters to a younger, brighter facility than the everyday hospital.

# 3.0 System Documentation / Design Specification

3.1 System Overview

The intranet cannot first be accessed without login access. As this website is only for internal hospital use, there is no need for having a home page for patient access or for any trivial use (another unrelated website exists for that purpose). Once logged in, the users can go to all the pages they are allowed access to. The following is the site map of the entire site, from the administrator's point of view.

3.2 System Design

The initial design for the Townsville Children's hospital intranet was made with user ease in mind. As this website is for purely functional reasons, we wanted it to be easily navigated by the user without any animation or design delays and without confusion about the navigation.

Navigation Specifications

Some of the design elements implemented for simple navigation and an easy browsing experience for all users are shown below. The main navigation taskbar is situated at the top of the page to make it eye-catching, easy to get to but at the same time separate and out of the way of the rest of the page. Some of the links within the taskbar are drop-down menus that are sub-sections of the original link. For example, in the figure below 'Patients' is the top-heading and some criteria relating to patients, such as a 'search engine' and 'add patients' are placed in the dropdown menu for easy and organised access.
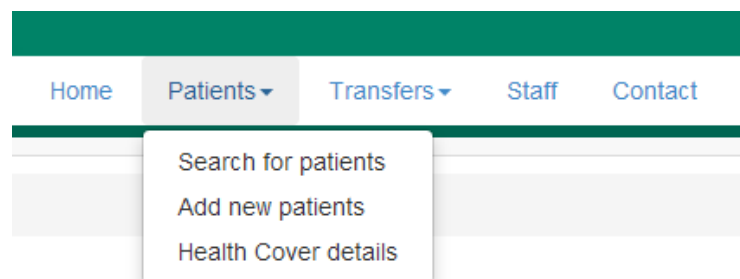
In the top right hand corner are the details of the user currently logged in, as well as a logout button and an option to manage the profile settings. This is situated above the taskbar previously mentioned and is out of the way of the main activity going on below the top taskbar.
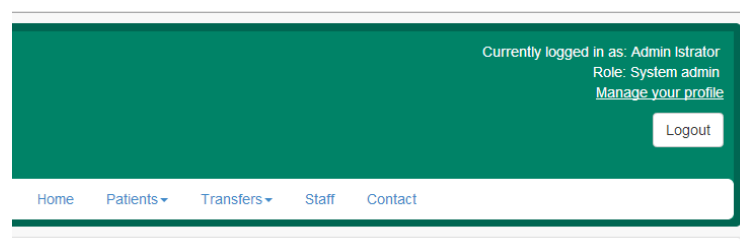
Above each navigation page is a navigation history bar as shown. This bar shows the pages previously navigated, to get to the page the user is currently on. Clicking any of the highlighted links (in this example, 'Home' or 'Patients') will take them back to these previous pages. A history bar such as this will help end-users who become confused, forget how to get to a page they were previously on or simply desire to have an easy go-to link.
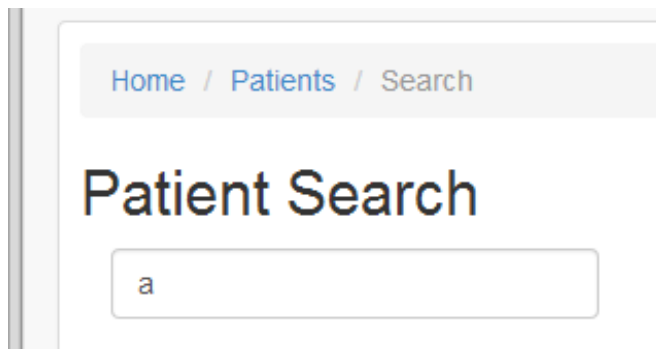
Patient search uses a special function which is a type of predictive text search that allows results to be shown as soon as data is typed, rather than only when enter or a search button is pressed. It works with a JavaScript and Ajax function that searches for an individual glyph as soon as it is inputted, calls results found based on that glyph and then recalculates as soon as another glyph is added or entered in its place. For example submitting the letter 'a' will bring up any results that contain the letter 'a' whether it is the first letter, last or a result just containing that letter. This function will help users who are looking for something unspecific, like how common a certain name is, or are unsure of the specific name or detail they need, such as how to spell a certain name (but are aware the name contain an 'a', in this scenario). This result also help the administrators in developing reports using the website itself on patient data by calling the MySQL database rather than accessing the raw data itself.
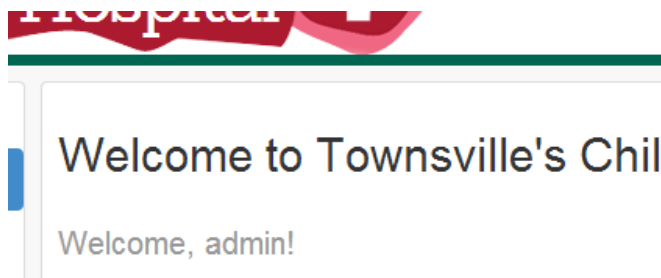
Under the main header of the rosters page once logging on, the website welcomes whichever specific user is currently residing. This function (specify) is useful for confirming who is logged in once they have done (giving reassurance to the user that their log in has been effective) and from an aesthetic point of view ensures a better user experience. If a user forgets to log out by accident and the same device is used by someone else, the evidence of another user's name on every page will alert them to the fact that they are using someone else's account.

Hierarchical Structure

```
                    Login
                      |
     Home ── Location ── Hours ── Contact
      |
    Patients ── Search ── New Patients ── Health Cover Details
      |            |
   Transfers   Search Results
                   |
              Patients View ── Print PDF   History
                                
  Room Status ── Staff ── Staff Home ── Staff Search Results ── Add Staff Member
      |            |           |                  |
   Incoming     Contact    Patient Notes       View Profile
      |                        |
   Outgoing              Internal map
```
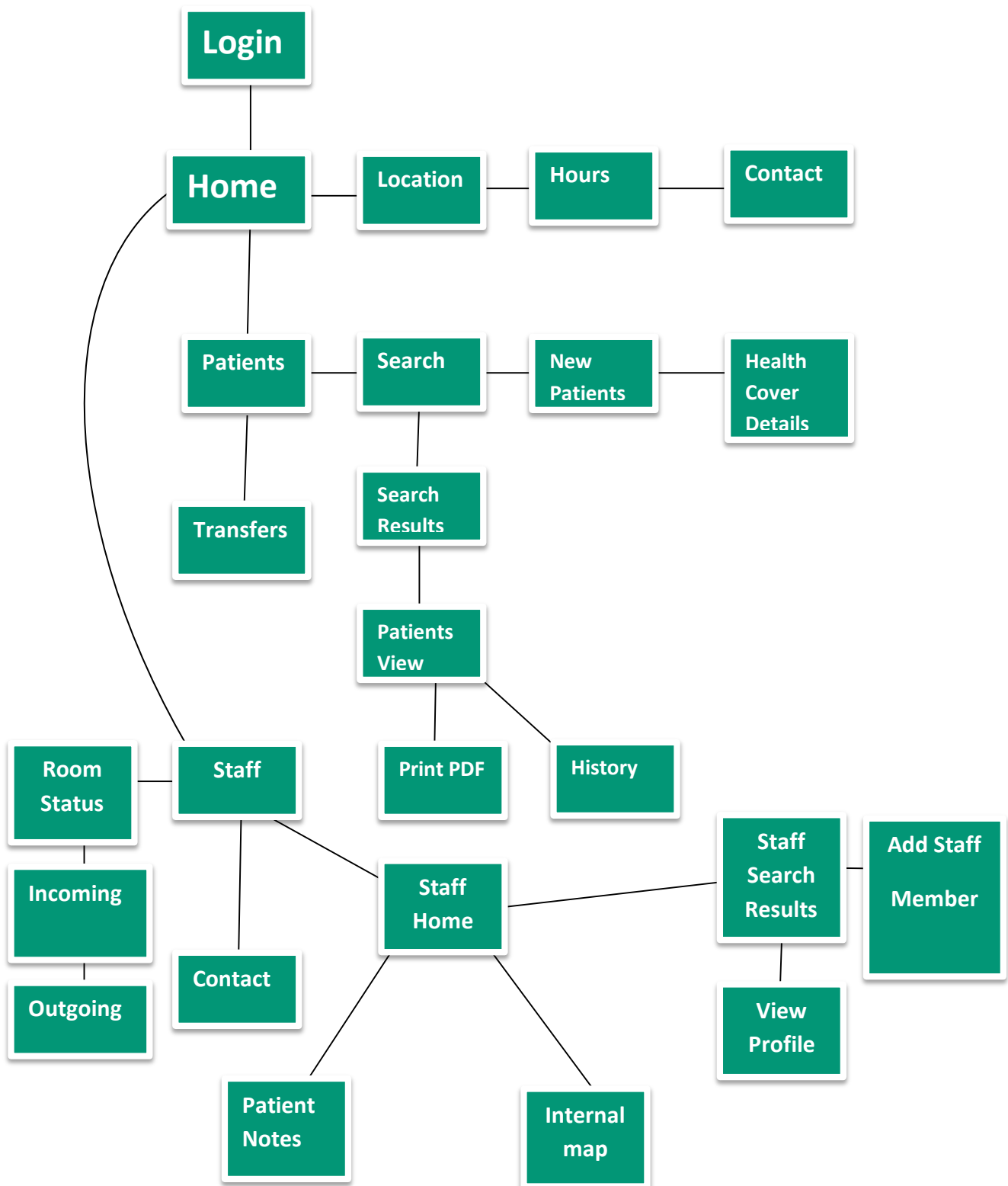
3.3 Functional Overview

Software

Having a unanimous understanding of the software used in the project, our team can save time and have 24/7 access to all parts of the program and fully understand every attribute. Without proper understanding between our team, members would be unable to work as precisely as necessary to finish the project before our deadline. The following programs were used in the development of the Townsville Children's hospital and were decided upon based on their popularity and familiarity within our members.

We used **PHP**, an easy to use and general purpose scripting language that our team was most familiar with and considered the easiest thing to use when making a website. It can be integrated easily into HTML and CSS pages (and vice-versa) and is free to use and easy to download to any platform.

MySQL is a relational database management system that hosts several of the largest website's in the worlds databases (or so it claims) It is a popular and easy choice of database to use with PHP as they are both widely used together as part of AMP software stacks.

Bootstrap, a front-end framework tool was used to improve the HTML and CSS of the website, particularly the buttons, forms and navigation format of the website. It is widely used and extremely popular web building tool.

Dropbox, a web-based, cloud file hosting service is used to host all our notepad ++ files, which automatically updates over the web so all files are instantly updated and backed up, allowing several users to work on the files at once from different computers or mobile devices.

4.0 Database Design

The purpose of this database is to store data for the new Children's Hospital in Townsville. The system tracks patients from admission to discharge and contains all relevant information that the hospital will require.

The database is primarily a storage tool for use by the system administrators / registrars. These users will be able to modify and query the database. Doctors and nurses will be able to alter details related to *their* patients; other staff will not have access to the database.

The database records are able to be exported to a PDF, emailed or relocated when the patient is transferred to another hospital.

The following information will be contained within the database;

Table	Information
Patient_ID *The Patient_ID table includes all administrative data related to the patient.*	An assigned patient identification number (patient_id) The patient's name Date of Birth Nationality Gender Contact Number Address Emergency Contact person
Health_Cover_Details *To allow for private health insurance contributions to be calculated, all private health details will be held in the Health_Cover_Details table.*	Patient ID Medicare Member Medicare card number (for medicare members) Private health insurance details, including provider's name, account number and contribution level (if relevant)
Patient_Billing *This table has been included to assist in calculating the payments required from each patient (the 'gap').*	Patient ID Med_Procedure (the procedures undertaken whilst in hospital) Cost
Staff *The Staff table includes all staff details for the system - including the staff member's username and access level (which determines what the user has access to)*	An assigned staff identification number (staff_id) The staff member's name Role Username (for the system) Access level (for the system) Password (protected)
Patient_Status *The patient_status table has been designed to hold all of the patient's medical details.*	Patient ID The staff identification number of the assigned doctor (doctor_id) Date admitted Condition

	Symptoms Doctor's Notes Nurse's Note
Patient_History *All of the patient's previous medical history is stored in this table. This allows for doctors / nurses to easily search for prior admissions / conditions.*	Patient ID Doctor ID Date Admitted Date Discharged Condition Surgeries Doctor's notes Nurse's notes
Bed *The Bed table has been designed to hold all beds in the hospital*	Bed Number Patient ID Room Number / Room ID
Rooms *Rooms includes and beds and rooms in the hospital and allows users to track where a free bed is in the hospital*	Room ID Number of beds available Location Special capabilities the room may have
Bed_Status *The Bed_Status table indicates whether a particular bed is free*	Room ID Bed Number Whether the bed is in use (in_use)
Testing_Completed *Any tests that have been completed will be kept in the Testing_Completed table. The test results be able to be uploaded to this table.*	Testing Undertaken (test_id) Patient ID Doctor ID (of the doctor who ordered the test) Date the testing was carried out (testing_completed) Results Test status (in progress, completed etc)
Testing_Ordered *The Testing_Ordered table is where any ordered test details will be stored.*	Test ID / Name Patient ID Doctor ID Condition Tests Ordered Doctor's orders / requests
ArchiveSurgery *When surgeries are completed, the details of the undertaken surgery will be moved to this archive table.*	Surgery ID (an assigned reference number for the surgery) Patient ID Condition Surgery date Surgery start and end time Doctor ID Type of surgery Any equipment used Department Room

	Doctor's notes
Completed_testing_request *This table is where completed test details will be sent. This will also determine which doctor is assigned the results, for further analysis.*	Test ID Patient ID Test Date Start time End time Test type Assign to (who is to be assigned the test for further action / diagnosis) Doctor's Notes
Procedure_Details *The details of any procedure is stored in this table. This is where costing details for procedures are also stored.*	Procedure Name Procedure ID (an assigned value which will simplify the way in which the details for a procedure are retrieved) Cost
Surgery *When surgeries are requested, the details of these are held in the surgery table. When complete, they are moved to the surgeryarchive table*	Surgery ID Patient ID Condition Surgery date Surgery start and end time Doctor ID Type of surgery Any equipment used Department Room Doctor's notes
Testing_request *This is the area in which testing is requested*	Test ID Patient ID Test Date Start time End time Test type Assign to (who is to be assigned the test for further action / diagnosis) Doctor's Notes
Test_Result *The test_result table is the table in which the results of any tests carried out will be stored.*	Test Result ID (an assigned value for each result set) Date Time File Location (of uploaded results) Test Notes Patient ID Test ID

Patient and hospital data is entered via the website and then stored on a series of database tables also on the server. This patient information cannot be accessed from the MySQL without a password that only the administrators would have.

5.0 Code Quality Assurance

The team worked with a mixture of javascript, Ajax, PHP, HTML and CSS for programming. PHP files, differing from other types of programming files can only be opened in a dedicated WAMP server (in this case wampserver v2.4) so that the files can be uploaded to the server and viewed. For simpler functions, javascript has been injected into an HTML page. For more complicated functions PHP is inserted into the HTML. All programming languages receive the same commenting and formatting treatment. HTML has been commented by starting each sentence with a "//", and helps explain what each command does, to guide those who are programming and anyone else who may need to work with the files. Different coding styles, such as javascript and CSS use different commenting standards, but due to the documents being HTML with javascript inserted, only HTML commenting is used. In our PHP documents, commenting takes for as "*/commented text */".

To help with the visual simplicity of the programming structure, functions are tabbed according to their sub-functions and to make the mechanics of the programming easier to read. Curly brackets are an essential part of even the most basic programming languages, and are needed to show when a certain function begins and ends. A function is developed as such that a missing curly bracket can lead to incorrect syntax and makes the function bring up errors; therefore it is good habit and a necessity for curly brackets to be correct and easily "read" by a programmer.

```php
// check if username is in the database
if ((authorize($username)) > 0) {
    // check if the password is correct
    if (password_verify($password, $hash)) {
        $_SESSION['signedin'] = true;
        $_SESSION['username'] = $username;
        $sql1 = "insert into login_log (username) VALUES ('$username')";
        $query = query($sql1);
        redirect('index.php'); // a redirect is performed to avoid double e
    }
} else {
    // if there is an error during login.
    $error = true;
}
```

An example of the layout of our programming structure. Notepad++'s excellent colour scheme as well as tabbed layout as shown here make it easy for any user with even a slight understanding of the program to understand and read it. Note that in this section you can easily find the two open and closed curly brackets.

As all our programmers are experienced with the importance of syntax and quality coding, it was easy for all of them to adhere by these standards, edit and read others programmers work without any assistance. This made working at a distance or without contact an easy task when necessary.

6.0 Acceptance Test Plans

We used GUI testing on our website on occasion as it was updated and after it was in complete functioning order. GUI testing has three main goals to confirm the test is successful and worthwhile:

1. The test must be valid, and use a valid and correct plan that will help the operators gain a goal state.
2. The operators must pay attention to order.
3. The operation must be goal orientated.

Team members who were not included in programming were responsible for testing. Our tests were designed and curated based on the user stories developed before the project went underway. From there, each specific user story is created into a task to be carried out by a user in the test website. The test's success is based on if the test was successful, according to criteria such as if the user understands the command, can find the pages and if the test example is able to be carried out. User tests are carried out under categories of administrative rank, any pre-conditions and any problems that are pre-existing within the testing environment (a disability either with the website or with the tester). The website will also be tested on its ability to perform in different web browsing platforms. It will be tested in Internet Explorer, Firefox and Google Chrome in their latest versions. A full list of all user acceptance testing implemented can be found in summary in User Acceptance testing in appendix 9.2.

7.0 Operations documentation

7.1 Introduction

The following will be a short guide to management and troubleshooting with the website, and an introduction into accessing the website independently as is its purpose. The Townsville website has been manufactured as an intranet, only available by a select few, and those two have access to its particular server, and not able to be found over the World Wide Web (for example, over google). Our aim in creating the website this way is to achieve a much more cost-effective solution, one that can be made with less time and effort wasted. This website will be hosted by servers onsite but be available to staff via a network gateway (with password and username access) outside of the hospital (on their own PC or mobile device) A mobile friendly website alternative is open to development in the future after the guaranteed success of its original. The following guide should be sufficient in covering up all possible queries one might have about the accessing, running and troubleshooting of this website.

7.2 Troubleshooting and Outside Forces

A network gateway helps keep non-staff members or admins out, protecting the website from potential risks that normal extranet websites are often prone to. The intranet website will not be immune to potential attacks, such as SQL injection or RFI (remote file includes) command injection. The details of this attack are illustrated particularly well at: http://www.sectheory.com/intranet-hacking.htm.

However there are several ordinary tactics in place (renaming image file uploads, securing against cross site scripting, keeping software up to date and other security measures) to disallow and significantly reduce the risks of attacks like these, making high security data found on the Townsville website safe from attack or deletion.

The Townsville website database, hosted by MySQL can be downloaded and backed up in hard copy at any time for safe storage in a secure location on the servers. The website itself is hosted by PHPadmin, and able to be accessed live by any members who are on the server. Members who are using the website via an internet connection will not be able to access the website if this connection fails; however due to the reduced need for the Townsville website to be available to staff members when off-site (for example, not at the hospital) there is no need at this time for time-stamping or other offline access to be developed. Having the website hosted online also has the added benefit of allowing it to be edited, files uploaded and deleted all via the website (accessible by any computer with the correct log-on details) rather than having it secured to one location where it can only be reached.

In case of any errors found on the website, staff can contact the administrators or programmers at any time via the 'contact' link found on the website in case of sign-in or page errors, where they can fill out a report or send an email to us.

8.0 User Guides

The following user guide will describe the step-by-step processes that will be commonly used by admins and end-users of all tiers within the website. It will also give a first time user an understanding of the website's configuration. Sub-sections include Admins, doctors, medical technicians and Public personnel. The following list acts in a cascading effect; ergo admins having the largest level of autonomy will be able to do everything listed under doctors and med tech., and doctors and med tech. will be able to do everything listed under public personnel.

Admins

A1 Logging in

Purpose
The purpose of this guide is to provide users appropriate steps in order to successfully log in to the intranet.

Audience
This is for internal distribution only. All users with an account can carry out this action.

Assumptions & Abbreviations
The following assumptions / abbreviations are used;

- All users have working accounts
- All users have access to the intranet and are using Qld Health devices.

Steps
1. Access the Townsville Hospital Intranet,
2. Enter username and password in the fields provided

The user will either be granted access, or an error indicating failure will appear.

The entered username and/or password was invalid.

If the incorrect credentials are used, the system will return the above error and the user will need to re-enter their details.

References

Written by:	Alex Bray
Authorized by:	Isabella Hunt
Date Published:	20/5/2014
Date for Revision:	27/5/2014

A2 Staff Search

Purpose
The purpose is to give users the appropriate steps to find the staff search page and use it to search

Audience
This guide is for internal use only and can be used by all tiers of staff members.

Assumptions & Abbreviations
The following assumptions / abbreviations are used;

- All users have working accounts
- All users have access to the intranet and are using Qld Health devices.
- All staff members have working and active accounts within the QLD health database.
- All staff member data has been uploaded from the MySQL database.

Steps
1. Log into Townsville Children's Hospital Website (see A1 for guide)

2.

Click the "staff" table on the home page

3. Once the page has loaded, click the bar under the header "Staff Search" to find a specific staff member.

References

Written by:	Isabella Hunt
Authorized by:	Alex Bray
Date Published:	2/6/2014
Date for Revision:	6/6/2014

A3 Print to PDF

Purpose
The purpose of this guide is to provide users appropriate steps in order to successfully export a patient's details to PDF, in case of a transfer / discharge.

Audience
This is for internal distribution only. This user guide is for the use or Receptionists and Administrators.

Assumptions & Abbreviations
The following assumptions / abbreviations are used;

- All users have working accounts
- All users have access to the intranet and are using Qld Health devices.
- Any user trying to carry out this operation are assumed to have sufficient security access.

Steps

1. Log into Townsville Children's Hospital Website (see A1 for guide)
2. Select the patient whose records are being exported. This is done by selecting the Patients tab, then clicking on the *Search for Patients* tab.
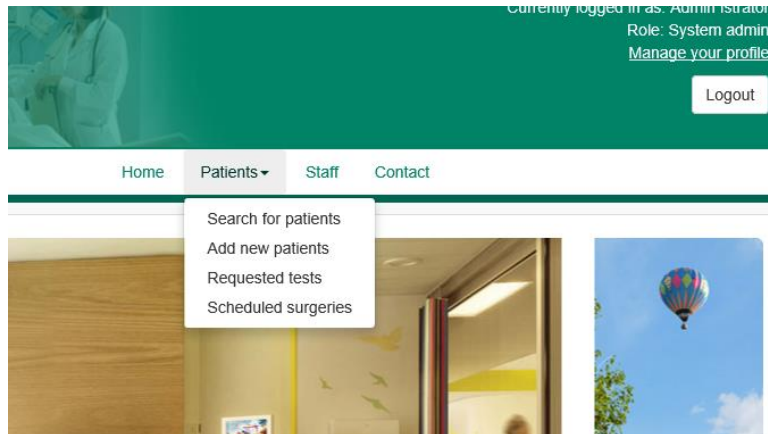
3. Selecting this option will allow the user to search for a patient's records. After the correct patient is selected (by pressing the view/edit button), the patient's profile is returned (this is covered in better detail in guide A5).
4. Once an account has been selected, the **Print to PDF** button is to be selected from the very bottom of the page
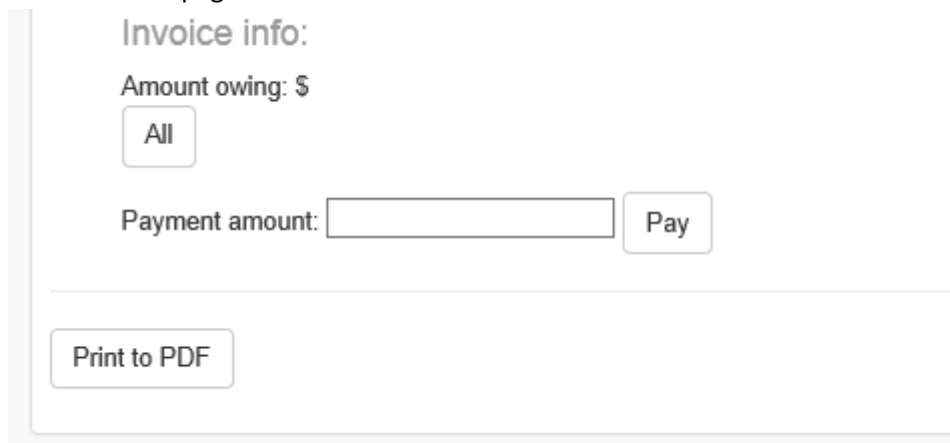
5. The PDF file is then generated, allowing it to be saved and / or printed.

References

Written by:	Alex Bray
Authorized by:	Isabella Hunt

Date Published:	20/5/2014
Date for Revision:	27/5/2014

A4 Adding Patients

Purpose
The purpose of this guide is to provide users appropriate steps in order to successfully add new patients into the database.

Audience
This is for internal distribution only. This user guide is for the use or Receptionists and Administrators.

Assumptions & Abbreviations
The following assumptions / abbreviations are used;

- All users have working accounts
- All users have access to the intranet and are using Qld Health devices.
- Any user trying to carry out this operation are assumed to have sufficient security access.

Steps
3. Access and log into the Townsville Hospital Intranet.
4. Once logged into, hover over the **"Patients"** tab. Under this tab, select **'Add new patients'**
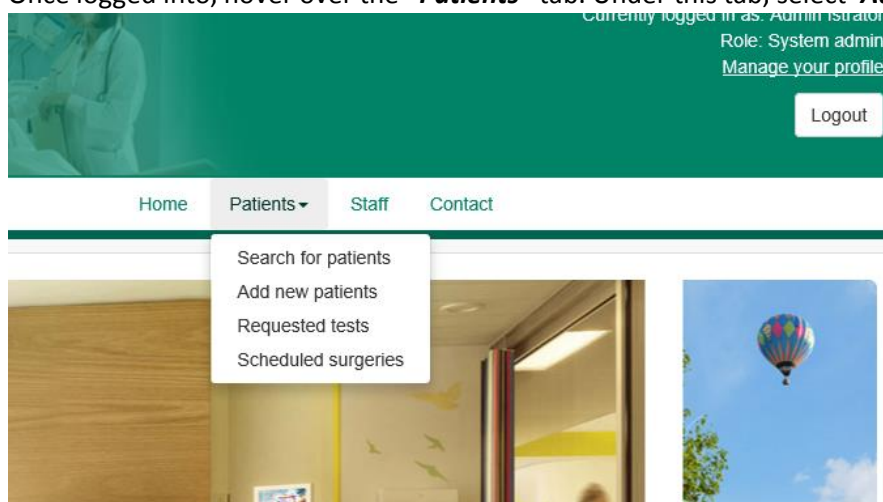
5. The patient's details are to be entered in to the form provided. Once completed, the patient's details will be added to the database.

References

Written by:	Alex Bray
Authorized by:	Isabella Hunt
Date Published:	20/5/2014
Date for Revision:	27/5/2014

A5 Public patient Search

Purpose
The purpose of this guide is to provide users appropriate steps in order to search for patients in the database and view / edit their records.

Audience
This is for internal distribution only. This user guide is for the use of Receptionists and Administrators.

Assumptions & Abbreviations
The following assumptions / abbreviations are used;

- All users have working accounts
- All users have access to the intranet and are using Qld Health devices.
- Any user trying to carry out this operation are assumed to have sufficient security access.

Steps
6. Access and log into the Townsville Hospital Intranet.
7. Once logged into, hover over the *"Patients"* tab. Under this tab, select *'Search for patients'*
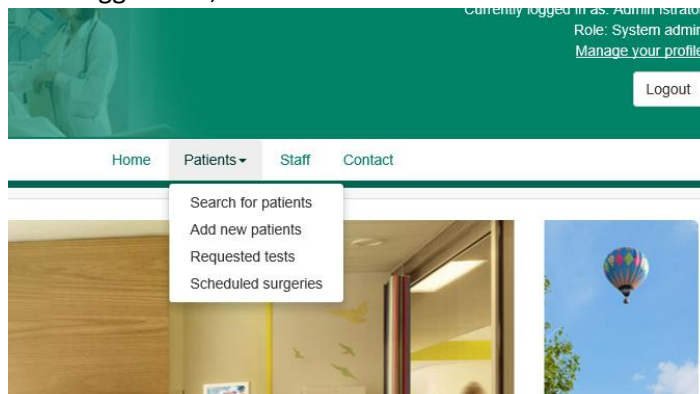
8. Enter in a key word / letter into the field provided. Pressing enter will then search for the patients who meet the entered criteria.

9. Beside each match, the user will have two options (View/Edit), this will allow the user to either view the patient's details, or edit them if required (in the case of a change of address, phone number etc).

Any changes made to this information will be reflected in the database.

References

Written by:	Alex Bray
Authorized by:	Isabella Hunt
Date Published:	20/5/2014
Date for Revision:	27/5/2014

A6 Patient History Entry

Purpose

The purpose of this guide is to provide users appropriate steps in order to add new data or history to a patient's page.

Audience

This is for internal distribution only. This user guide is for the use of Receptionists and Administrators.

Assumptions & Abbreviations

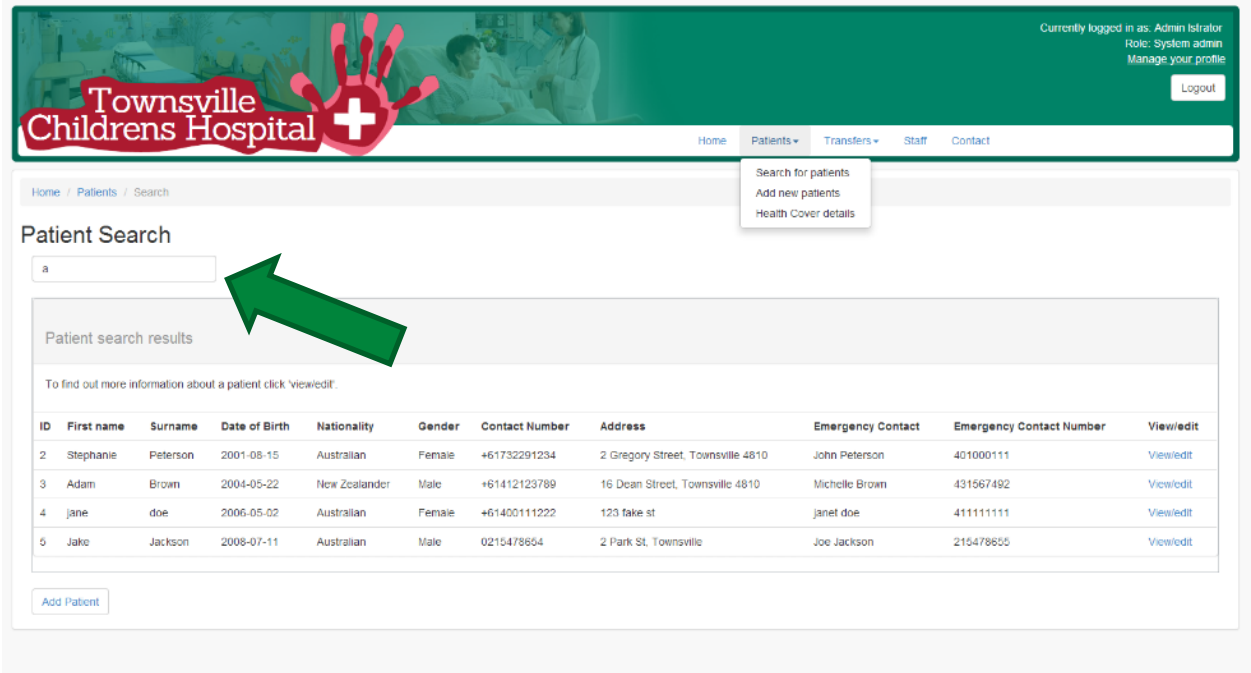The following assumptions / abbreviations are used;

- All users have working accounts
- All users have access to the intranet and are using Qld Health devices.
- Any user trying to carry out this operation are assumed to have sufficient security access.

Steps

1. Access and log into the Townsville Hospital Intranet.
2. Once logged into, click on "Room Status" found under the header image on the home page.

| Patient Search | Staff | Room Status |

3. Room Status will generate currently used rooms.

Department	Block	Room	Patient Info
Burn Center	Z	602	View/edit

4. Click on"View/edit" to see Patient history in full.
5. Scroll to the bottom of the page until you see a button called "New History Entry"

Charge procedure to patient:

Bill number: [   ]   Procedure: Stitches ▼   Submit

Invoice info:

Amount owing: $

[All]

Payment amount: [   ]   Pay

_____

[New history entry]

References

Written by:	Isabella Hunt
Authorized by:	Alex Bray
Date Published:	24/5/2014
Date for Revision:	6/6/2014

A7 Adding Staff

Purpose
The purpose of this guide is to provide users appropriate steps in order to add new data or history to a patient's page.

Audience
This is for internal distribution only, and this user guide is for use by administrators only.

Assumptions & Abbreviations
The following assumptions / abbreviations are used;

- All users have working accounts
- All users have access to the intranet and are using Qld Health devices.
- Any user trying to carry out this operation are assumed to have sufficient security access.

Steps
1. Access and log into the Townsville Hospital Intranet.
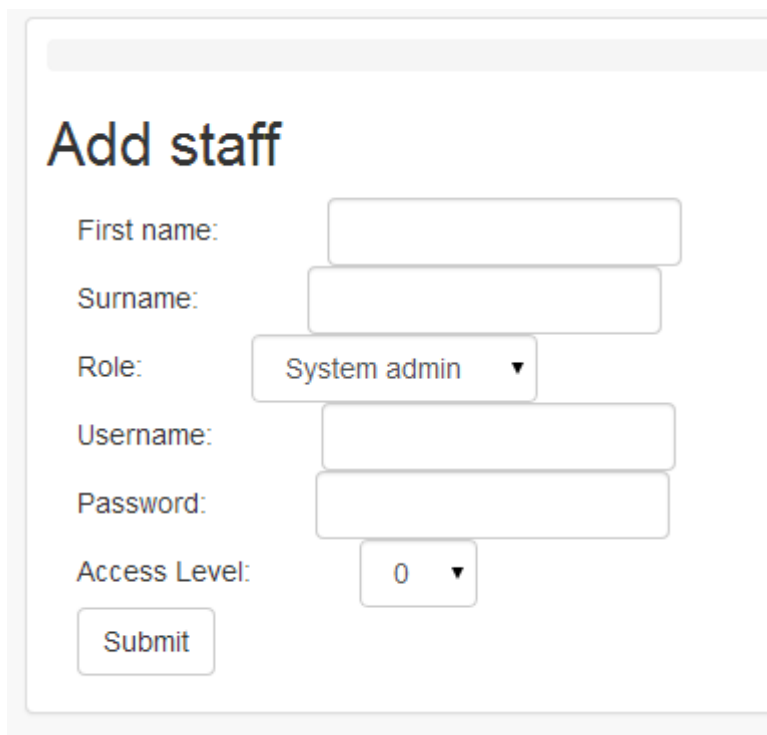
2. Once logged in, Click on the button "Staff" found in the main task bar.

3. Click "Add New Staff" button which will appear automatically for administrators use only,
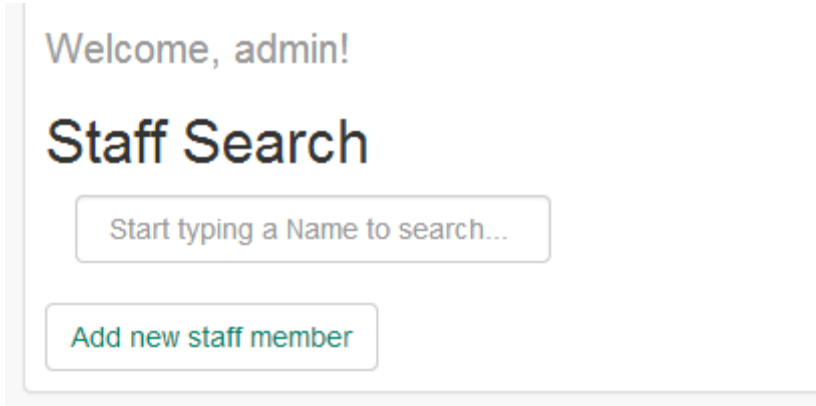
4. Fill in the form and Submit.

5. A notification telling you that you have submitted successfully will appear if done correctly.
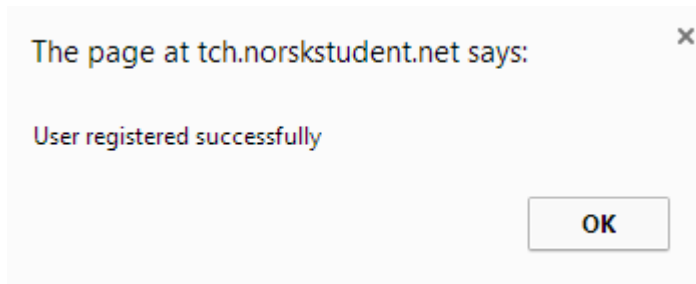
The page at tch.norskstudent.net says:

User registered successfully

OK

References

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9.0 Appendices

9.1 User Stories

Access Level	User Story	ID
Level 1	As an administrator, I need to see all edits that have recently been made	1
Level 1	As an administrator, I need to add and delete new tables	2
Level 1	As an admin, I need to see what data had been changed and looked at	3
Level 1	As an admin, I need to generate and receive reports on patient data	4
Level 4	As a nurse, I need to know and let others know when a surgery is finished	5
Level 4	As a nurse, I want patient history so I can give them their preferential treatment	6
Level 4	As a nurse, I need to know when my patients need their medication	7
Level 4	As a nurse, I need to see my doctor's orders, including calls for surgery and check ups	8
Level 4	As a nurse, I want to know when I will be on shift and who will be on shift with me	9
Level 2	As a doctor, I need to know when I have a scheduled surgery or check up	10
Level 2	As a doctor, I need a timetable of my schedule and alerts for when I am needed	11
Level 3	As a medical technician I want to upload x-rays that have been	12

Level 3	taken	
Level 3	As a medical technician I need to know when I have a patient to xray	13
Level 1	As an executive / CEO, I need access to reporting so I can view statistics on the Hospital	14
Level 5	As a receptionist I need the authority to change appointments If need be	15
Level 5	As a receptionist I need to transfer patients to different hospitals and enter new patients into the database	16
Level 2	As a doctor, I need to see x-rays and be able to print them	17
Level 2	As a doctor, I want to know who will be on shift with me	18
Level 1	As an admin I need authority to change schedules and add new employees	19
Level 2	As a doctor, I want to notify the receptionist If I cannot make an appointment	20
Level 1	As an admin, I would like to be able to send notices to all users when modifying the system.	21
Level 4	As a nurse, I want to know when a patient's medication is available.	22
Level 4	As a nurse, I would like to know who is rostered the next shift	23
Level 2	As a doctor, I want to know when a patients friends and family are coming in	25
Level 2	As a doctor, I want to know the availabilities of my nurses.	26
Level 5	As a receptionist, I would like to know when patients can have friends and family invited.	27
Level 2	As a doctor, I want to know when a specialist is available	28
Level 5	As a user, I want to access what patient is in what room and department	29
Level 5	As a user, I want to manage my own password and account	30

9.2 User Acceptance Testing

The following guides are forms completed during and after testing of the finalised system took place. All User Acceptance testing happened under these circumstances: the user responsible for testing had little contact with the website and was only told what it was their responsibility to do. In this case, the user is not expecting any errors or outlying circumstances which may occur.

User Acceptance Test #4

Test Sheet No.	1	Test Status	Complete
Tested By	Isabella Hunt	Test Date	4/6/2014
Test "User Case" Number	4	Assumed Knowledge	The mySQL data has been pulled from patient data to the page

User story	As an admin, I need to generate and receive reports on patient data

User Role	Admin

Test Steps	1. Click "Patients" tab at top of website 2. Search for a patient 3. Scroll down to bottom of page and click "print to PDF" 4. If a PDF generates the test has been successful
Test Successful	1. Patient tab exists 2. Patients successfully appear when searched for 3. Print to PDF appeared 4. Generated PFD successfully

User Acceptance Test #5

Test Sheet No.	2	Test Status	Incomplete
Tested By	Isabella Hunt	Test Date	4/6/2014
Test "User Case" Number	5	Assumed Knowledge	The mySQL data has been pulled from scheduled surgeries to the page

User story	As a nurse, I need to know and let others know when a surgery is finished
User Role	Nurse, Doctor

Test Steps	1. Click the "Patients" tab at top of website 2. Click "Scheduled Surgeries" 3. Click "Complete surgery" 4. Notification of deleted surgery 5. Check if that surgery has been deleted from the table
Test Successful	1. Patients tab exists 2. "Scheduled surgery" exists 3. "Complete surgery" button exists 4. "Complete surgery does not delete the test TEST FAILED – RETRIED. SEE USER ACCEPTANCE TEST #20

User Acceptance Test #6

Test Sheet No.	3	Test Status	Complete
Tested By	Isabella Hunt	Test Date	4/6/2014
Test "User Case" Number	4	Assumed Knowledge	The mySQL data has been pulled from patient data to the page

User story	As a nurse, I want patient history so I can give them their preferential treatment
User Role	Nurses, Doctors and Admins

Test Steps	1. Click "Patients" tab at top of website
	2. Search for that patient
	3. Click "view/edit" link after patient name
	4. If patient data is available the test is successful
Test Successful	1. Patients tab exists
	2. Search for patient yields results
	3. View/Edit is available

User Acceptance Test #7

Test Sheet No.	4	Test Status	Complete
Tested By	Isabella Hunt	Test Date	4/6/2014
Test "User Case" Number	7	Assumed Knowledge	That the MySQL data has been connected to the page

User story	As a nurse, I need to see my doctor's orders, including calls for surgery and check ups
User Role	Admin, Doctor, Nurse

Test Steps	1. Click "Staff" tab at top of window
	2. Click "Requested Tests"
	3. If "requested Tests" appear the test has been successful
Test Successful	1. Staff tab exists
	2. Requested tab exists and data has been pulled from the database

User Acceptance Test #9

Test Sheet No.	5	Test Status	Complete
Tested By	Isabella Hunt	Test Date	4/6/2014
Test "User Case" Number	9	Assumed Knowledge	The doctor's orders have been available for nurses to read

User story	As a nurse, I want to confirm when I have completed doctor's orders
User Role	Admin, Doctor, Nurse

Test Steps	1. Click "Staff" tab at top of window
	2. Click "Requested Tests"
	3. Click "Submit test results"
	4. Fill in form
	5. If form submits after at least one form has been filled, the test has been successful.
Test Successful	1. "Staff" tab exists
	2. "Requested Tests" tab exists
	3. The "submit test results" button links to form

	4. Form confirms submission

User Acceptance Test #10

Test Sheet No.	6	Test Status	Complete
Tested By	Isabella Hunt	Test Date	4/6/2014
Test "User Case" Number	10	Assumed Knowledge	Surgeries have been added to the database on time by staff

User story	
	As a doctor, I need to know when I have a scheduled surgery or check up
User Role	Doctor

Test Steps	1. Click "Patients" tab 2. Click on "Scheduled Surgeries" 3. If surgeries for that doctor appear, test has been successful.
Test Successful	1. Patients tab exists 2. Scheduled surgeries tab exists 3. Surgeries for doctor appear

User Acceptance Test #11

Test Sheet No.	8	Test Status	Complete
Tested By	Isabella Hunt	Test Date	4/6/2014
Test "User Case" Number	12	Assumed Knowledge	That the MySQL data has been connected to the page

User story	As a medical technician I want to upload x-rays that have been taken
User Role	Medical Technician

Test Steps	1. Click "Staff" tab at top of window 2. Click "Requested Tests" 3. Click "Submit test results" 4. Fill in form 5. If form submits after at least one form has been filled, the test has been successful.
Test Successful	1. "Staff" tab exists 2. "Rosters" tab exists 3. The "submit test results" button links to form 4. Form confirms submission

User Acceptance Test #14

Test Sheet No.	11	Test Status	Complete
Tested By	Isabella Hunt	Test Date	4/6/2014
Test "User Case" Number	16	Assumed Knowledge	That the MySQL database is connected to the website

User story	As a receptionist I need to enter new patients into the database
User Role	All Users

Test Steps	1. Click "Patients" tab at top of window 2. Click "Add Patients" tab 3. Fill out Add Patient form 4. If the form confirms and the patient has been added, the test is successful
Test Successful	1. "Patient" tab exists 2. "Add Patient" tab exists 3. Add patient form confirms patient has been added 4. The patient appears in the database

User Acceptance Test #15

Test Sheet No.	12	Test Status	Complete
Tested By	Isabella Hunt	Test Date	4/6/2014
Test "User Case" Number	17	Assumed Knowledge	That the medical technician has uploaded their x-rays

User story	As a doctor, I need to see x-rays and be able to print them
User Role	Doctor, Medical Technician

Test Steps	1. Click "Patients" tab 2. Click "Search for Patients" 3. Search for a patient 4. Click "view/edit" **5.** View any x-rays and print
Test Successful	1. "Patient" tab exists 2. "Search for Patients" tab exists 3. "View/ edit" link yields results 4. X-rays are viewable and printable

User Acceptance Test #16

Test Sheet No.	13	Test Status	Complete

Tested By	Isabella Hunt	Test Date	2/6/2014
Test "User Case" Number	19	Assumed Knowledge	That a database is connected to the website

User story	As an admin I need to add new employees
User Role	Administrator

Test Steps	1. Go to "Search Staff" link at top of website 2. Click link "add Staff" at bottom of page 3. Fill out necessary parts of form 4. Submit the form 5. Staff search to make sure the form has been added, if so the test is successful
Test Successful	1. "Search Staff" exists 2. "add Staff" page exists 3. Form submits 4. The form appears when searching the staff database

User Acceptance Test #17

Test Sheet No.	14	Test Status	Complete
Tested By	Isabella Hunt	Test Date	4/6/2014
Test "User Case" Number	29	Assumed Knowledge	N/A

User story	As a user, I want to access what patient is in what room and department
User Role	All users

Test Steps	1. Go to home page after logging in 2. Click "Room Status" after header image 3. If Patient Room status yields results, the test is successful
Test Successful	1. "Room status" exists 2. Patient room shows patient room status

User Acceptance Test #18

Test Sheet No.	15	Test Status	Complete
Tested By	Isabella Hunt	Test Date	4/6/2014
Test "User Case" Number	22	Assumed Knowledge	Data exists to be added to the database

User story	As a receptionist, I need to add new patient data and history.
User Role	All Users

Test Steps	1. Once at a Patients profile, click "New History Entry" 2. Add data to form 3. If data validation goes through, the test is successful
Test Successful	1. "New History Entry" exists 2. Data will add to form and validate once submitted

User Acceptance Test #19

Test Sheet No.	2	Test Status	Complete
Tested By	Isabella Hunt	Test Date	4/6/2014
Test "User Case" Number	4	Assumed Knowledge	The mySQL data has been pulled from scheduled surgeries to the page

User story	As a nurse, I need to know and let others know when a surgery is finished
User story #	5

Test Steps	1. Click the "Patients" tab at top of website 2. Click "Scheduled Surgeries" 3. Click "Complete surgery" 4. Notification of deleted surgery 5. Check if that surgery has been deleted from the table
Test Successful	1. Patients tab exists 2. "Scheduled surgery" exists 3. "Complete surgery" button exists 4. "Complete surgery" deletes surgery 5. Table no longer shows that surgery upon check

User Acceptance Test #20

Test Sheet No.	16	Test Status	Complete
Tested By	Isabella Hunt	Test Date	4/6/2014
Test "User Case" Number	23	Assumed Knowledge	N/A

User story	As a user, I want to manage my own password and account
User Role	All Users

Test Steps	1. Click "Manage your profile" at top of page 2. Make necessary changes 3. Once the form validates and you can sign in again with the new password, the test has been successful.
Test Successful	1. "Manage your profile" exists 2. Form validates and updates profile

Platform user Testing

Test Sheet No.	20	Test Status	Complete
Tested By	Isabella Hunt	Test Date	27/05/2014
Test "User Case" Number	N/A	Reviewed by	Alex Bray

Test Steps	Ensuring the website works to the best of its functionality in the web browser platform *Google Chrome v34.0.1847.137.* Based on formatting, user scalability and functionality.
Summary	As the website was tested since its creation in Google Chrome we were aware that it worked to the best of its ability. Final testing of the website before its publication took place in this browser, and all functions performed well. The website conformed to the browser's format structure. Chrome functionality has passed the User Acceptance Test.

Test Sheet No.	21	Test Status	Complete
Tested By	Isabella Hunt	Test Date	2/6/2014
Test "User Case" Number	N/A	Reviewed by	Alex Bray

Test Steps	Ensuring the website works to the best of its functionality in the web browser platform *Firefox v29.0.1.* Based on formatting, user scalability and functionality.
Summary	The website conformed to the browser's structure and all tasks were functional. CSS tables in the add patients web page were smaller but readable. Firefox functionality has passed the User Acceptance Test.

Test Sheet No.	22	Test Status	Complete
Tested By	Isabella Hunt	Test Date	2/6/2014
Test "User Case" Number	N/A	Reviewed by	Alex Bray

Test Steps	Ensuring the website works to the best of its functionality in the web browser platform *Internet Explorer 11.0.7.* Based on formatting, user scalability and functionality.
Summary	The website conformed to the browser's format structure.

9.3 Database Relationship Diagram