Gynaecological Patient Information management System:

User Manual

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Abstract

This document is the Software User Manual (SUM) for the Patient Information Management System project and was made according to the software engineering standard described in the tender proposal provided by Professor Snyman. The Software User Manual (SUM) instructs how to install and use the Patient Information Management System software. This project is part of the Software Engineering Project course (COS301) at the University of Pretoria.

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1 Introduction

1.1 Change Log

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1.2 Intended readership

This document covers the use for the following users of the PIMS system:

the system administrator

the project administrators

the medical staff

the usability test subjects

1.3 Applicability

This Software User Manual (SUM) applies to the PIMS software, version 0.1.

1.4 Purpose

The purpose of the SUM is to assist the user in installing and using the PIMS software.

1.5 How to use this document

How it is to be used:

- Title page - System name and the names and/or affiliation of all stakeholders.
- Introduction - Introduction to the System
- Overview - Purpose of the system
- Configuration - Configuration used by the system
- Installation - Detailed description of where to find the software and how to install it.
- Getting Starting - Walk through of the system
- Using the System - Description of the systems functions
- Troubleshooting - Procedures to take in case of errors

1.5.1 Problem Reporting

Since the Pentec team will be dissolved after completion of the PIMS project, the issue of problem reporting is left to the Administrator, Professor Snyman.

2 Overview

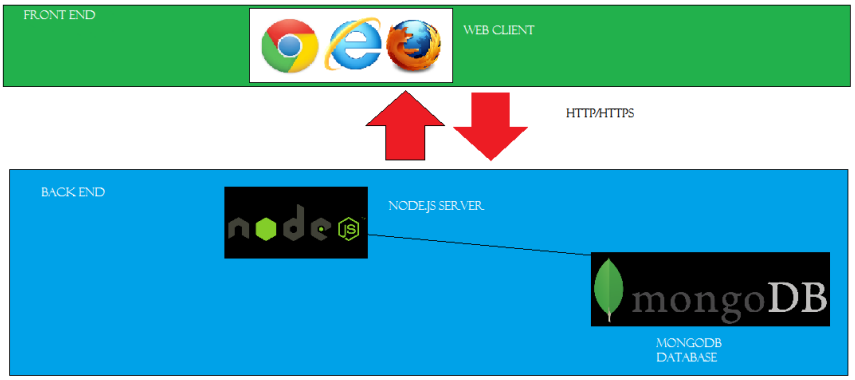
The purpose of this software is to be used by doctors and medical staff. It allows the administrative users to electronically fill in medical forms and be able to query for statistics for those forms and eventually receive a prediction that could assist in the functionality of the Kalafong Hospital. Regular users are allowed to fill in medical forms.

3 Configuration

4 System Configuration

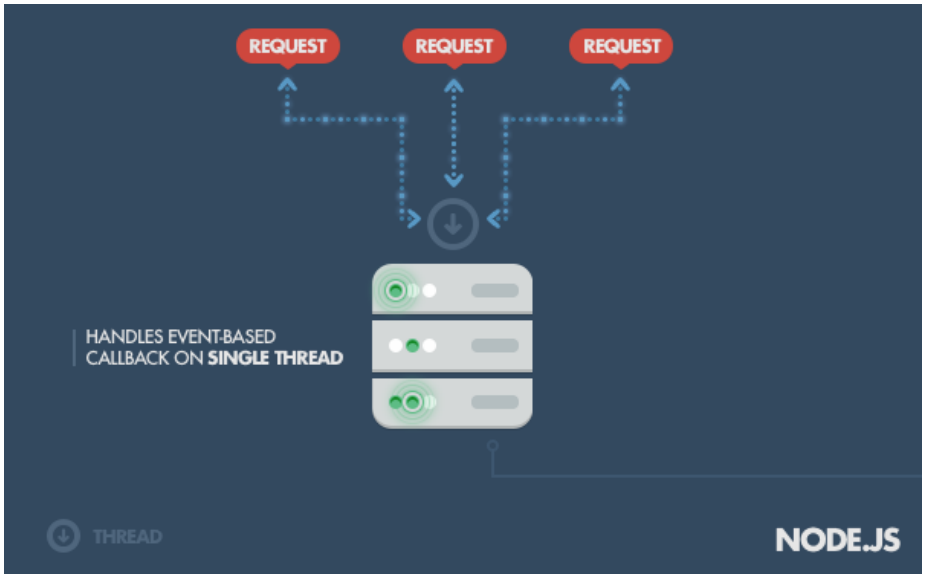
4.1 Basic System Structure

The current system that is in place makes use of a Node.js server that interacts with any web client. The server is hosted through a PaaS named Heroku. The system delivers compiled jade files to the users that are stylized using CSS. The jade files are controlled and animated by Javascript and jQuery. The node.js server accesses MongoDB database hosted on the DaaS, mongolab. This is illustrated below:



4.2 Node.js Architecture

Node.js is an asynchronous langauge and its basic client-server communication is illlustrated below:



4.3 Communication Protocols Used

This is the current list of all communication protocols used by PIMS:

- HTTP/HTTPS
- SMTP

5 Installation

5.1 Running the Software

1. Website page
   (a) Establish an internet connection
   (b) Search for website in web browser
   (c) Log into PIMS system with given authentication codes
2. Mobile Application
   (a) Establish an internet connection
   (b) Search for website in web browser
   (c) Log into PIMS system with given authentication codes
3. Tablet or other
   (a) Establish an internet connection
   (b) Search for website in web browser
   (c) Log into PIMS system with given authentication codes

   ...

5.2 Shutting down the website

Contact your service provider(hosting site) to pull down the software

6 Getting Started

6.1 Systems Procedure Order

This section describes a brief overview of how a user can access the system, it shows perspectives from an adminstrative user as well as normal users. The sections that are discussed can be found in more detail in the next section.

6.2 Splash Page

6.3 Login

6.4 Navbar

6.5 Home Icons

6.6 Fill Forms

6.7 Statistics

6.8 Add User

6.9 Update Profile

6.10 Logout

7 Using the System

The login, forms, user and statistics operations are described in this chapter.

7.1 User

7.1.1 add user

Functional Description This operation adds a user to the PENTEC-PIMS database.

Formal Description

- Syntax: add user (username,surname,password,staff type,department,email address,user right) as [Users] [A schema to save the details of all medical staff that can access the system]

- Parameters:

schema (Required when chosen) : Users Schema

pentec_pims (Required) : This is the name of the database in mongoose that we are using

details (Required):All the above mentioned details in syntax are important to add a user

Examples

- add user John Doe, Medical Intern, User right 2, Gynaecologist
- add user url:http://kalafongpims.herokuapp.com/addUser
- URL : :http://kalafongpims.herokuapp.com as Medical Staff This is a medical research dataset PENTEC Software User Manual 0.1.0 14

Possible errors

- You do not have the login creditials
- A user with name [username]already exists
- You don't have the role of admin

Solutions

- Go to admin(Dr Snyman) and request he add you to the database of users.
- Register with your already given details. No duplicates allowed.
- Go to admin(Dr Snyman) and request he make you admin.

Related operations remove user

7.1.2 edit profile

Functional Description This operation edits a users profile and saves it to the PENTEC-PIMS database.

Formal description

- Syntax: edit user (username,surname,password,confirm password,staff type,department,email address,user right) as [Users] [A schema to save the details of all medical staff that can access the system]

- Parameters:

schema	(Required when chosen) : Users Schema
pentec_pims	(Required) : This is the name of the database in mongoose that we are using.
details	(Required) :All the above mentioned details in syntax are important to complete edit profile.

Examples

- edit user John Doe, Medical Intern, User right 2, Gynaecologist
- edit user url:http://kalafongpims.herokuapp.com/editProfile
- URL : :http://kalafongpims.herokuapp.com as Medical Staff This is a medical research dataset PENTEC Software User Manual 0.1.0 14

Possible errors

- You do not have the login creditials to log into the system
- Passwords don't match
- You don't have the role of admin
- You do not appear on the system

Solutions

- Go to admin(Dr Snyman) and request he add you to the database of users.
- Register with your already given details sent to your email. No duplicates allowed.
- Re-enter your password
- Go to admin(Dr Snyman) and request he make you admin.

Related operations add user

7.1.3 password

Functional description This operation changes your password on the PENTEC-PIMS database.

Formal description

- Syntax:password (confirm password, password) as [Users] [A schema to save the details of all medical staff that can access the system]

- Parameters:

schema (Required when chosen) : Users Schema

pentec_pims (Required) : This is the name of the database in mongoose that we are using.

details (Required) :All the above mentioned details in syntax are important to complete password.

Examples

- password mysecretpassword, mysecretpassword
- add user url:http://kalafongpims.herokuapp.com/editProfile
- URL : :http://kalafongpims.herokuapp.com as Medical Staff This is a medical research dataset PENTEC Software User Manual 0.1.0 14

Possible errors

- You do not have the login creditials
- You don't have the role of admin
- Passwords dont match

Solutions

- Go to admin(Dr Snyman) and request he add you to the database of users.
- Go to admin(Dr Snyman) and request he make you admin.
- Re-enter your password carefully.

Related operations none

7.1.4 list for

Functional description This operation list all the available forms in the PENTEC-PIMS database.

Formal description

- Syntax: list form (form name) as [Forms] [A schema to save the details of all medical forms in the system]

- Parameters:

schema (Required when chosen) : Forms Schema

pentec_pims (Required) : This is the name of the database in mongoose that we are using.

details (Required) :All the above mentioned details in syntax are important to complete list form.

Examples

- list form Gynaecology Form
- list form url:http://kalafongpims.herokuapp.com/forms
- URL : :http://kalafongpims.herokuapp.com as Medical Staff This is a medical research dataset PENTEC Software User Manual 0.1.0 14

Possible errors

- You do not have the login creditials
- The form you are looking for does not exist

Solutions

- Go to admin(Dr Snyman) and request he add you to the database of users.
- Go to admin(Dr Snyman) and request he create the form.

Related operations none

7.1.5 save form

Functional description This operation allows you to save a form to the PENTEC-PIMS database.

Formal description

- Syntax: save form (data, form name) as [Forms] [A schema to save the details of all forms created in the system]

- Parameters:

schema	(Required when chosen) : Forms Schema
pentec_pims	(Required) : This is the name of the database in mongoose that we are using.
details	(Required) :All the above mentioned details in syntax are important to complete save form.

Examples

- save form discharge form, JSON Object
- save form url:http://kalafongpims.herokuapp.com/formbuilder
- URL : :http://kalafongpims.herokuapp.com as Medical Staff This is a medical research dataset PENTEC Software User Manual 0.1.0 14

Possible errors none

Solutions none

Related operations list form, add form

7.1.6 send notification

Functional description This operation allows you to notify a patient of their follow up via email.

Formal description

- Syntax: add notification (username, email, message, date) as [Users] [A schema to save the details of all medical staff that can access the system]

- Parameters:

schema (Required when chosen) : Users Schema

pentec_pims (Required) : This is the name of the database in mongoose that we are using.

details (Required) :All the above mentioned details in syntax are important to complete send notification.

Examples

- add notification John Doe,john@gmail.com, "John Please come for your checkup",2015
- add notification url:http://kalafongpims.herokuapp.com/sendNotification
- URL : :http://kalafongpims.herokuapp.com as Medical Staff This is a medical research dataset PENTEC Software User Manual 0.1.0 14

Possible errors

- You cant find the users name
- User does not have an email address

Solutions

- Patient does not exist in the system
- Notification cannot be sent to user

Related operations remove user

7.1.7 list department

Functional description This operation lists all the departments on the splash screen from the PENTEC-PIMS database.

Formal description

- Syntax: list department (name of department, link) as [Departments] [A schema to save the details of all departments in the system and display them on the splash screen]

- Parameters:

schema (Required when chosen) : Departments Schema

pentec_pims (Required) : This is the name of the database in mongoose that we are using.

details (Required) :All the above mentioned details in syntax are important to complete list user.

Examples

- list department Gynaecology, www/d/
- list department url:http://kalafongpims.herokuapp.com/splash
- URL : :http://kalafongpims.herokuapp.com as Medical Staff This is a medical research dataset PENTEC Software User Manual 0.1.0 14

Possible errors None

Solutions None

Related operations none

7.1.8 exit

Functional description This operation adds a user to the PENTEC-PIMS database.

Formal description

- Syntax: add user (none) as [none] [none]

- Parameters:

schema (Required when chosen) : Users Schema

pentec_pims (Required) : This is the name of the database in mongoose that we are using.

details (Required) :All the above mentioned details in syntax are important to complete exit.

Examples

- exit [press logout button]
- exit url:http://kalafongpims.herokuapp.com/home
- URL : :http://kalafongpims.herokuapp.com as Medical Staff This is a medical research dataset PENTEC Software User Manual 0.1.0 14

Possible errors none

Solutions none

Related operations login

7.2 Login

7.2.1 authenticate

Functional Description This function authenticates a user and logs them into the system.

Formal Description

- Syntax: authenticate([username], [password], [callback])

- Parameters:

username (Required): This is the username of the user, it will usually be the user's name or a unique number assigned to them.

password (Required): This is the password of the user and is used to authenticate the user.

callback (Opitional): This is the callback function and is used to keep the processes synchronous.

Examples

- authenticate("John", 1234)
- authenticate("john", 1234, thisIsAFunction())

Possible Errors & Solutions

- Problem: Your login does not exist.
- Solution: Contact supervisor.
- Problem: Your password is incorrect.
- Solution: Contact supervisor.
- Problem: You are trying to access an admin page but it takes you to a regular user page.
- Solution: Request supervisor to change your rank.

Related operations checkAdmin

7.2.2 check admin

Functional Description Determines if the user is an administrator.

Formal Description

- Syntax: checkAdmin([username], [password], [callback])

- Parameters:

username (Required): This is the username of the user, it will usually be the user's name or a unique number assigned to them.

password (Required): This is the password of the user and is used to authenticate the user.

callback (Opitional): This is the callback function and is used to keep the processes synchronous.

Examples

- checkAdmin("John", 1234)
- checkAdmin("john", 1234, thisIsAFunction())

Possible Errors & Solutions

- Problem: You are trying to access an admin page but takes you to a regular user page.
- Solution: Request supervisor to change your rank.

Related operations authenticate

7.2.3 recaptcha

Functional Description This function is a security feature to ensure the user is not an automated bot or machine.

Formal Description

- Syntax: recapture([action], [callback])

- Parameters:

action (Required): This is the action taken by the user in the form of a check on the checkbox.

callback (Opitional): This is the callback function and invoked by the click event and allows the user to log into the system.

Examples

- recaptcha(event(Click), thisIsACallbackFunction()//allow user to log in)

Possible Errors & Solutions

- Problem: Error message "Please check the recaptcha box before logging in"
- Solution: Locate the recaptcha box at the bottom of the log in box and click it.

Related operations authenticate

7.3 Statistics

7.3.1 get daterange

Functional Description This function allows the user to select a time period that he would like his data to reflect.

Formal Description /hfill

- Syntax: getDatarange([startDate], [endDate], [callback])

- Parameters:

startDate (Required) This is the start date that has been selected.

endDate (Required) This is the end date that has been selected.

callback (Optional) This is the callback function and is used to keep the processes synchronous.

Examples

- getDatarange(startDate : "10/10/2014", endDate: "10/10/2015")
- getDatarange(startDate : "10/10/2014", endDate: "10/10/2015", callback)

Possible Errors & Solutions

- Problem: No date selected
- Solution: Reselect the date on the date time picker and click apply then select other procedures and click query.
- Problem: No procedures in the dates selected
- Solution: Graph will show user there are no procedures in that period.

Related operations

- get interval
- get graph

7.3.2 get interval

Functional Description This function gets the interval based data in the dropdownlist and certain selectors and uses it to query the database.

Formal Description /hfill

- Syntax: getInterval([selectors], [callback])

- Parameters:

interval [statistics],[selectors](Required) These are the selectors put in place to customize the procedures that are selected.

callback (Required) This is the callback function and is used to keep the processes synchronous.

Examples

- getInterval(Weekly,Average Age,startDate : "10/10/2014", age: 25, endDate: "10/10/2015")
- getInterval(Yearly, Average Age,startDate : "10/10/2014", age: 25, endDate: "10/10/2015", callback)

Possible Errors & Solutions

- Problem: Invalid selectors
- Solution: Choose a valid selector.
- Problem: No operations during that selector
- Solution: Graph will correctly depict the scenario.

Related operations

- get daterange
- get graph

7.3.3 get graph

Functional Description This function gets data selected from the input boxes and after querying the database returns them in a format which can be converted into a graph.

Formal Description /hfill

- Syntax: getGraph([startDate],[endDate],[interval],[statistic], [callback])

- Parameters:

startDate	(Required) This is the start date that has been selected.
endDate	(Required) This is the end date that has been selected.
interval	(Required) This is the interval that has been selected.
statistic	(Required) This is the statistic that has been selected.
callback	(Optional) This is the callback function and is used to keep the processes synchronous.

Examples

- getGraph(startDate : "10/10/2014", procedure: "all", endDate: "10/10/2015","Weekly", "Average Age",)
- getGraph(startDate : "10/10/2014", procedure: "all" ,endDate: "10/10/2015", callback)

Possible Errors & Solutions

- Problem: Data does not exist
- Solution: Graph shows the appropriate message.
- Problem: Invalid selectors
- Solution: Choose a valid selector.

Related operations

- get interval
- get datarange

7.3.4 get statistics

Functional Description This function allows the user to select a specific statistic he would like his data to reflect.

Formal Description /hfill

- Syntax: getStatistics([stats], [callback])

- Parameters:

stats	(Required) This is the statistics that has been selected.
callback	(Optional) This is the callback function and is used to keep the processes synchronous.

Examples

- getStatistics(stats:"Elective Procedures")

Possible Errors & Solutions

- Problem: No statistic value selected
- Solution: Error message asking you to select a statistic value will show.
- Problem: No procedures in the dates selected
- Solution: Graph will show user there are no procedures in that period and ask you to select dates.

Related operations

- get interval
- get graph
- get daterange

8 Troubleshooting

8.1 Introduction

This section contains a series of tables that describe possible solutions to problems that may occur when using your PC. Each table contains:

- Symptoms that describe the sign or warning message for the type of problem.
- Possible solutions that describe what you should do to try to solve the problem.

Troubleshooting	
Symptoms	Possible solution
You press the login button and nothing happens	1. You entered the wrong username/password combination. 1.1 Click show password to see what you have typed. 1.2 Recheck your email from admin to ensure you are using the correct username/password combination. 1.3 You have not clicked the recaptcha box.
Aland Islands	AX. 1.4 You have not entered a username or password.
Cannot add new user	2. You have to fill all the textboxes
Cannot edit profile	Make sure you have internet connection
Cannot query statistics	Make sure you have selected an option for each dropdownlist. Ensure you have clicked the query button.