Kalafong Provincial Tertiary Hospital

Gynaecological Patient Information Management System:

Software Test Documentation

Team Pentec:

Ruth Ojo 12042804
Liz Joseph 10075268
Trevor Austin 11310856
Maria Qumayo 29461775
Lindelo Mapumulo 12002862

Final Version

October 29, 2015

Contents

1 INTRODUCTION

1.1 Objectives

The following doucment contains the detailed outline of the PIMS testing process and results. Bellow are the main modules that were tested.

- User Login

- PIMS Artificial Intelligence

- PIMS Statistics

- PIMS Notifications

- PIMS Space

Testing was done on the system mainly for the following 5 reasons:

- To ensure that the system meets both functional and non functional requirements arroding to the given spesifications

- System stress, that is to make sure that the system does not fail with multiple users or any other factors because it is expensive to resolve and fix at a later stage.

- To handle and resolve System failures and bugs appropriatly and in good time.

- To point out the defects and errors that were made during and after the development phases.

- To ensure that the final product is of top, professiona, software engineering standards.

1.2 Testing Strategy

Our approach

Different strategies were conducted for the different kinds of testing. All strategies were decided upon according to according to the level of the test

Mechanism

1. Strategy:

   - Open-source resources: using open source resources to minimize our individual costs.

   - Iterative development and regular reviews: This will help us improve system quality so we were able to change and update any errors upon first encounter.

   - Documentation and tracking: The relevant documentation to keep track of our findings.

2 FEATURES TO BE TESTED (Functional Requirements)

2.1 PIMS Login

It is a priority that a user logs into the system for security reasons to be able to interact with it. When testing the login use case we tested for the user?s authentication and rights. We tested weather or not he has admin or normal user rights.

The local login page

Successfu.l login unit tests

Conditions

The following pre and post conditions are defined for adding a new user.

Pre conditions

- User must not be logged in
- User must have valid credentials, a valid username and password.

- User credentials must be found in the Mongo database.

Post conditions

- User successfully logged in according to his user rights

Code snippets for user login use case, with test data ?a? . Testing that a valid username is entered

Code snippets for user login use case, with test data ?g? . Testing that a valid password is entered

Code snippets for user login use case. Testing that the user is logged in after valid authentication

Remark

Login ensures security and access control. Testing regarding the logging in all pass, thus the PIMS system is secure.

2.2 PIMS Notifications

Send notification is a feature that is not in the requirement documentation but was asked to be added in by our client. It allows him to send notifications to remind patience of their next follow up. The send notification use case unit tests failed because the schema could not be found, see figure bellow.

Test failure causes

The following pre and post conditions for the send notification must hold true.

Conditions

The following pre and post conditions are defined for adding a new user.

Pre conditions

- User must be logged in as administrator.
- Patient must exist in the system database.
- Patient must have an active email account.

Post conditions

- A notification informing patient about their next appointment is sent to the users email account.

Code snippets for send notification use case that looks for a patient email address in the database to send a notification to.
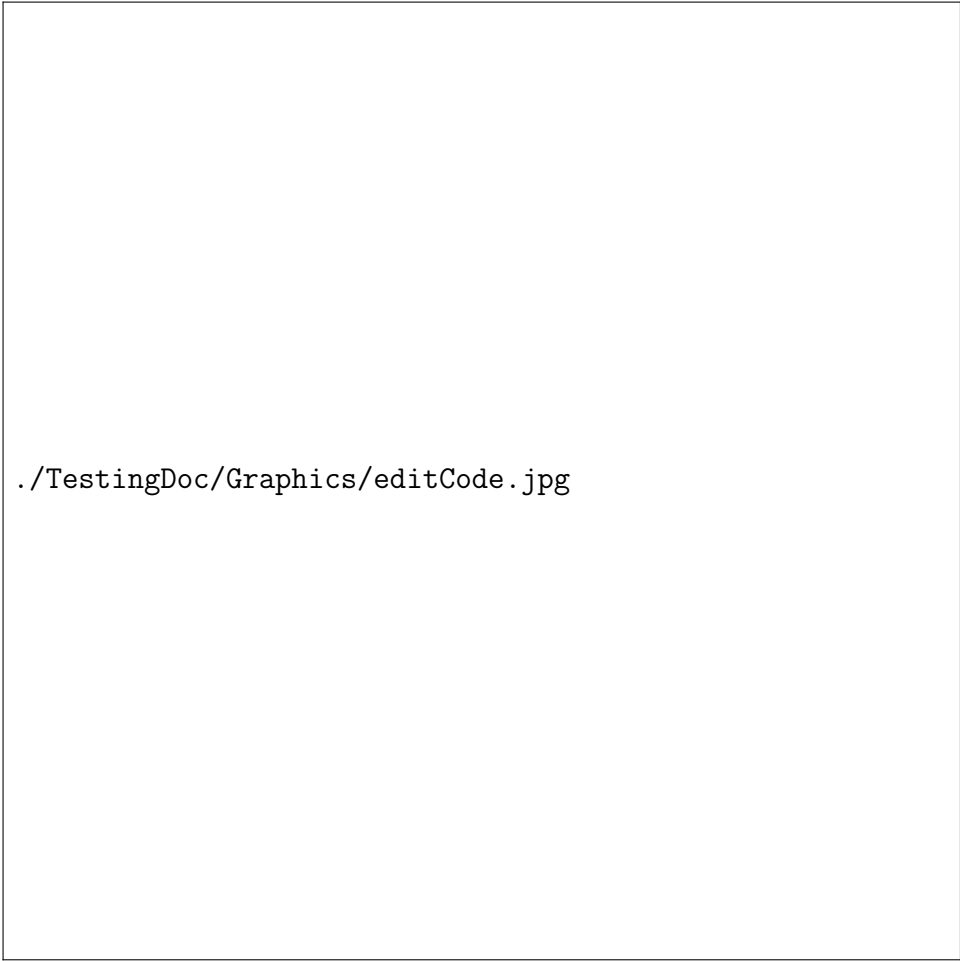
Remark

Since Send notification fails unit testing, the module needs to be revised and tested again.

2.3   PIMS Edit Profile

2.3.1   Pims Login

Pims edit user profile should be able to allow the admin user to update his profile and edit his information accordingly.

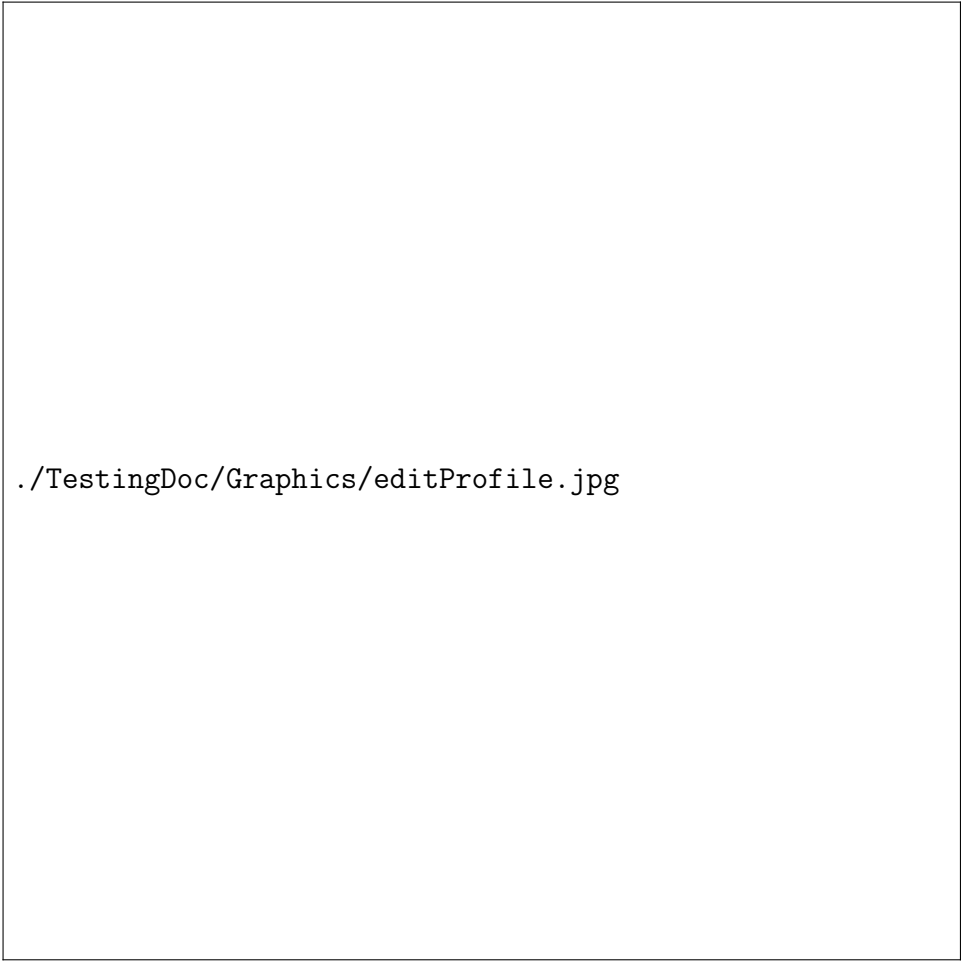The Code bellow demonstrates the update of the user name after retrienving it.

./TestingDoc/Graphics/editCode.jpg

Edit profile was tested for the following conditions

- Retrieve data
- Modify profile details

The figure bellow depics the successful testing of the UpdateAuthentication and checkAdmin functions.

```
./TestingDoc/Graphics/editProfile.jpg
```

2.4 PIMS Add User

Adding a user, is a feature only available for the admin user and is a crucial use-case needed for saving a new users to the system.

The add user case passed unit testing successfully as seen in the figure bellow

Conditions

The following pre and post conditions are defined for adding a new user.

Pre conditions

- User must be logged in as admin.
- User to be added must not already exist in the database.
- User must be a medical personnel.

Post conditions

- New user is added and can interact with the system.

The code bellow shows the testing for adding a new user with sample data

Remark

Add User unit test successfully passes.

2.5 PIMS Statistics

PIMS statistics is another feature for admin user only. For the statistics use case we tested for four different cases. All passed unit test and succeeded..

The add user case passed unit testing successfully as seen in the figure bellow

Conditions

The following conditions had to be met for the statistics tests to pass.

Pre conditions

- User must be logged in as admin.
- Object type has to be a digit.

Post conditions

- Statistical results are returned.

Unit test code to validate the number of elective procedures is indeed a number.

Unit test codes to validate the average age and stay in hospitals are indeed numbers.

Remark

Statistics is the heaviest module the PIMS. More unit testing will be done to ensure accuracy, reliability and currency. For now all tests succeeded and passed.