ONLINE DIAGNOSTIC LAB REPORTING SYSTEM

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1 INTRODUCTION

1.1 PURPOSE

The purpose of the project is to design an online diagnostic lab manager application that brings up various diagnoses that are working online. Its main aim is to bring together various diagnostic working, researches on one single platform that is also online (so that it is accessible for everyone).This website turns manual tasks automatic to save recourses. Automatic works is considered more trustful, reliable, accurate etc. The proposed system is an online system which is preferably a website and management system together. The purpose of this project is to provide a faster and a reliable service as compared to manual system. This system may increase the profit for diagnosis labs. The user friendly and interactive interface makes using this application easy for everyone. Users/patients register themselves online providing their basic details and select the tests that they want to perform under that lab. The system is usable, reliable and maintainable in nature. It serves the needs of Pathology, Biochemistry, Serology, Haematology etc department in a lab. It is a multi-tasking system.

1.2 SCOPE

The scope of the project is to generate the test reports and notify it to the patient as soon as it is made. There are four participating members in the system one is the-Super admin, Lab admin, Patient and Doctor. The patients are first allowed to register on the site and also login using registered details (email and password). Once registered with their address and contact details, the patients may now see a variety of tests conducted by the lab along with their costs. The system allows for CBC, Blood glucose, KFT, LFT tests to be booked by patient. The tests also consist of parameters like Haemoglobin, WBC, etc. Now the system allows users to pay online. After payment the patient test is booked & the confirmation mail is sent to the registered email address and the lab may now collect samples from patients registered address on the mentioned sample collection date.After successful testing the user now gets a notification

about the test's result through an email. The system allows admin to attach the report details into the system and automatically sent a notification email it to the intended patient so that he/she can view the report after logging into the system. The objective of the system is to provide a diagnostic lab working online. The goal of the system is to provide user-friendly and interactive software that allows easy booking of tests by the patients. The system allows automate diagnosis system. It provides faster service and allows increased sales and profits for diagnostic labs.

1.3 DEFINITIONS AND ABBREVIATIONS

SQL-Structured query language

PHP-Hypertext pre-processor

SRS-Software requirements specification (Description of a Software system to be developed)

CBC-Complete blood count (Measures the cells that make up the blood)

LFT-Liver function test (It is a blood test which measures the

Levels of several substances (enzymes & proteins) that are excreted by the liver)

KFT-Kidney function test

WBC-White blood cells (One of the cells the body makes to help fight infections)

1.4 REFERENCES

Online Diagnostic Lab Reporting System-nevonprojects.com

1.5 OVERVIEW

The overview of the system is to book various tests/packages online from a selected lab and generate test reports. The system allows automate diagnosis system. One of the major disadvantages of such a system is that it reduces employment as the human efforts are being automated by this system. The proposed system is built by using PHP and SQL database is used to store all data online. There is almost zero percent chance of

report swapping or missing which has quite fair chances in manual system. In this existing diagnostic lab reporting system, the reports are generated manually or by using computer software in which the details itself needs to be fitted by the employees of the organization. Existing system has greater tendency of having more errors as compared to the automation system. The system is flexible in nature.

2 OVERALL DESCRIPTIONS

2.1 PRODUCT PERSPECTIVE

The following are the main features that are included in the system:-

1) User Account: The system allows creating an account for the new patient (Sign in) and provides log in facility for old patients.
2) Number of users supported by the system: Though the number is precisely not mentioned but the system is able to support a large number of online users at a time.
3) Search: Search is simply local search engine based on key words for any tests offered by a particular lab.

® 4)Technologies used: 1) MYSQL 2) HTML 3) PHP 4) JavaScript 5) Bootstrap 6) XAMPP(Open source cross platform web server)

2.2 PRODUCT FUNCTIONS

This is the online diagnostic lab report generation system. Users can see variety of tests/packages offered by the selected lab along with cost and all. Without costs the system allows users to look any tests as needed. After the successful booking the system calculates the total cost and allows users to pay online. The system allows admin to store the report details into the system and automatically email to the intended patient. The following project is divided into three parts where one website is designed with respect to the patient/user's viewpoint, another is designed with respect to the lab admin's and doctor's viewpoint and the last one is designed with respect to the Super admin's viewpoint.

- Thus, the functions that are involved with respect to the Super admin's viewpoint are:-

1) Login:-Using Login function the Super Admin is allowed to enter into the Diagnostic Lab Manager Application with his/her associated Id & Password which in turn verified further for successful login.

® 2) Add/Delete Lab:-The function allows Super Admin to Insert, Delete the details of Labs.

® 3) Add Test:-The function allows Super Admin to Insert, Tests provided by Labs.

® 4) Add Test Parameter :-The function allows Super Admin to Insert Test Parameters of the tests.

5) Logout:-The Super Admin should log out from the system after the completion of their intended work.

- Thus, the functions that are involved with respect to the Labs admin's and doctor's viewpoint are:-

1) Login:-Using Login function the Lab Admin is allowed to enter into the Diagnostic Lab Manager Application with his/her associated Id(name) & Password which in turn verified further for successful login.

2) View Test Samples:-Collected test samples are verified by the Doctors.

3) Generate Report:-The system allows admin to generate report after validating a payment and notify the Patients regarding the report generation. The generated report is signed by the Doctors.

4) Logout:-The Lab Admin should log out from the system after the completion of his/her intended work.

- Thus, the functions that are involved with respect to the Patient's viewpoint are:-

1) Login:-Using Login function the patient is allowed to enter into the Diagnostic Lab Manager Application with his/her associated Id(email) & Password which in turn verified further for successful login.

2) Registration:-The function allows Patients to register on the site with their name, address, contact, dob if the patients are intended to be new users so that the patients can see a variety of tests conducted by the lab along with their costs.

® 3) Book Test/Package: - The function allows Patients to book any required test /packages (if available) from the selected Lab of their choice. After successful booking, system calculates costs and allows users to pay online and the confirmation email is sent to the registered email address.

4) View Report: - Patients can view the test report/ search previous test reports online and download the test report if required.

5) Logout:-The patient/user should log out from the system after completion of their intended work.

2.3 USER CHARACTERISTICS

It is considered that the patients/users to have the basic knowledge of operating the system and admin's are expected to be familiar with the interface of the Online Diagnostic System with different tests and their parameters etc.

There are types of users related to the system:-

1) Super Admin
2) Lab Admin
3) Patient

1) Super Admin:-

1) There is only one super admin in the system.

® 2) When the super admin logs into the system using his/her id and password , he/she is displayed several options like ‘Add lab details’, ‘Delete lab details’, ‘Add test details’, ‘Add test parameter details’ and ‘Logout’ .

3) When he/she clicks on the ‘Add lab details’ he/she should enter the lab name, registration number, address, contact, email, opening time, closing time etc. The lab id is automatically generated by the system. After clicking on the submit button the details are stored in the database.

® 4)When he/she clicks on the ‘Delete lab details’, the lab registration number and the lab name and after clicking the submit button the details of that lab will be deleted from the database.

® 5)When he/she clicks on the ‘Add test details’ the test id will be automatically generated. Admin should specify the lab which offers the test along with test name, sample type, department and the cost and the doctor name associated with the test and also the discount . The packages which offer that test must be selected(if any). Once he/she clicks the submit button the details are stored in the database.

® 6) When he/she clicks on the ‘Add parameter details’ he/she should specify the test and admin should specify the parameter name and minimum and maximum value of the parameter and also unit for that test. Once he/she clicks the submit button these are stored in the database.

7) When the super admin clicks on the Logout button the super admin is logged out from the system.

2) Lab Admin: -

1) Each lab has their own lab admin and the lab admins are allowed to login in the system by their id(name) and password.

Ⓓ ~~2) When a lab admin logs into the system he/she is displayed several options like 'View patient appointment details', 'Patient test details', 'Report module'.~~

Ⓓ ~~3)When he/she clicks on the 'View patient appointment details' then he/she can see the patient appointment details by specifying the patient id which are already listed~~.

Ⓓ ~~4)When he/she clicks on the 'Patient test details', he/she must specify the test details of that particular patient by selecting the patient id. Once he/she clicks on the patient id, the test id is automatically generated by the system. He/she should specify the test type. He/she should specify the test name and the present value of the particular patient. Once the submit button is clicked, the information is stored in the database.~~

Ⓡ 5) Reports will be generated by the lab admin. When he/she clicks on the 'Report module', admin should select the book id and he/she will get particulars for the patient and enters the report details . Once he/she clicks on the submit button the report details are stored in the database and automatically a notification email is sent to the registered email address of the patient.

6) After clicking on the logout button the admin is logged out from the system.

3) Patient:

1) If the patient is a new member he/she will register himself/herself by clicking on the sign-in button .The patient id is automatically generated by the system.

Ⓡ 2) The patient should specify their name, address, password, contact, address, email, dob for the sign in.

3) Then he/she uses the id(email address) and password to login into the system.

Ⓡ 4) Once the patient logs in he/she is displayed 'Book Test', 'Book Package','View report' ,'Logout' buttons.

Ⓡ 5) When he/she clicks on the 'Book Test'/ 'Book Package' then the Book_id is automatically generated by the system. The patient selects the lab, test/package , test date, time slot and then clicks on the submit button. After that he/she must specify the credit card number, CVV, validation date and then only the test/package is booked.

Ⓓ ~~6)After clicking on the 'View appointment details ' patients view appointment details by specifying the appointment id .He/she can view the test details, date and time slots.~~

6) Patients can view report by clicking on the 'View report' option and entering the book_id.

7) By using 'Logout' option, the patient is logged out from the system.

2.4 CONSTRAINTS

1) There no cart system present in the Online Diagnostic Lab reporting system.
2) There is no referring doctor present as such in the system.
3) Only online payments are allowed in the system. The total payment needs to be done at the time of booking.

4) The system does not generate any OTP password to the user while booking a test/package.

5) The previous history reports of a patient can be checked by the patient/user by entering their book_id of the respective report.

6) The password of the patient and lab admin are getting stored in the database.

7) The password entered by the user should not be more than 15 characters in length.

Ⓝ 8)The test report is generated a day after the sample collection date

2.5 ASSUMPTIONS AND DEPENDENCIES

1) The system allows only full payment while booking a test / a package.

2) The system does not allow users to add tests/packages in a cart. The test/packages need to be selected while booking a test & payment needs to be done immediately.

3) Doctor's role is not that much mandatory. Doctors can only sample the tests and sign on the report.

4) There is one super admin who controls all the lab admin's.

5) Different labs have their own lab admin's placed in different branches.

6) The test and test parameters are already predetermined in the system.

Ⓝ7) All tests and packages available in the system are offered by all labs.

3 SPECIFIC REQUIREMENTS

3.1 FUNCTIONAL REQUIREMENTS

3.1.1 SOFTWARE REQUIREMENTS:-

1. MS SQL Server
2. Xampp
3. Windows 7 or above

3.1.2 HARDWARE REQUIREMENTS:-

1. Hard Disk-2GB
2. RAM-1 GB
3. Processor-Dual core or above
4. Monitor
5. Keyboard
6. Mouse

3.1.3 INTERFACE REQUIREMENTS:-

1. System shall allow its users to update their personal information.
2. Fixed Data Fields-should include standard attributes.
3. The programming part is written using PHP and JavaScript.
4. The system should run under windows 7(or above).
5. The patient's username is the 'email' of the patient by which he can login into the system along with his/her password.
6. Reports can be best viewed on Google Chrome and Mozilla.

7. Ensure pop-Ups are allowed and compatibility mode is on to be able to open the reports.

8. The system limits access to authorized users only.

9. User login shall be controlled by the operating system.

10. The patients can view their previous history reports also, if they desire to.

11. The patients can either download or 'view online' their reports.

3.2 NON-FUNCTIONAL REQUIREMENTS

3.2.1 PERFORMANCE REQUIREMENTS:-

The maximum response time for the submission of request for any task will be 1 minute (maximum). The performance of the Internet connection cannot be guaranteed, but with a time-out mechanism.

3.2.2 SAFETY REQUIREMENTS:-

There are no such requirements identified yet.

3.2.3 SECURITY REQUIREMENTS:-

At least secure all Internet Access or Data Exchange with the Secured Socket Layer (SSL).For data protection and privacy issues, the system shall not store Credit Card Number of the Patient.

3.2.4 SOFTWARE QUALITY ATTRIBUTES:-

The system is robust enough that an operational interrupt to the system shall not corrupt database easily.

In case the database corrupts for some reason; the data could be recovered easily from the backup copy.