

Offline Appointments Management System

Project report

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**Submitted By:**

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ABSTRACT

Jan Elaaj Offline Appointment Management System is an application which does the following operations:

* Allow operators to register new patients.
* Allow registrations of Doctors, Pathlabs and Pharmacy.
* Allow operators to Compare Consultancy Fee of Doctors.
* Allow operators to compare prices of different pathlabs price for particular test.
* Allow operators to list different pathlabs and compare discounts.
* Reports generations for Doctor, Pathlabs and For Pharmacy.
* Send SMS to patients and doctors about appointment with appointment details.
* Simple Interface with minimal user Interaction with the system.
* Intelligent Search for Test alias.
* Easy modification of the data for Admin.

About Organization



We are a healthcare startup at IIM Lucknow, Noida campus, focussing on quality and affordable primary healthcare. Our clinics go with the brandname of ‘Jan Elaaj’ and are based in Delhi.

Close to 45 per cent of hospitalization could have been prevented by more responsible and early attention to routine morbidity. Jan Elaaj is empowering doctors/clinics to facilitate early detection and cure.

We facilitate Jan Elaaj clinics with innovative diagnostic kits that will enable early diagnosis and hence, bring down the cost of primary treatment.

Jan Elaaj also serves as an aggregation platform, bringing doctors, pathlabs, radiology labs and chemists under one platform and passing maximum discounts to patients, who take the aggregation services.

If you want to include;

Jan Elaaj has conducted health camps supported by [Hamdard Institute of Medical Sciences and Research (HIMSR)](http://www.himsr.org/), Agragami, Ephra, [Discipleship Centre](http://discipleshipcentre.in/contact_us.aspx), Sakshi etc to name a few.

The main difference between Jan Elaaj camps and other healthcamps is the continuum of medical services to the patients even after the camp is over, through our network of aggregation partners, who offer maximum discounts to patients and even offer free services to EWS patients.

Introduction

Desktop applications are far more powerful than either mobile apps and web apps. You use a genealogy program for its genealogy features, and desktop genealogy programs have way more genealogy features than mobile apps or web apps, and that is not likely to change any time.  
Many desktop genealogy applications offer significant features such as powerful search, consistency checks, citation templates, wall charts, custom reporting, multimedia support, geo-mapping, To-Do List and Research Log, DropBox support and so on, all complemented by generally pretty good GEDCOM support, while quite a web apps still offer little beyond the most basic features and only limited GEDCOM support.

Reasons for selection of Web Development Project:

## Privacy

You will want to keep parts of your research private, maybe because you are not ready to share it yet, but also because you should not publish information about living people without their consent.  
The only sure way to keep something private on the web is to keep it off the web. This is an major reason why you really shouldn't any web app as your main program; entering the private information of living people on a third-party web site is big no-no, it violates the trust those people put in you when they provided their information.  
Desktop applications offer privacy filters, so when you do want to publish some research to the web, you keep can private notes and living people private, just as you intended.

## Security

Keep in mind that have no idea how good or bad the security of a web server is. Take privacy seriously, and do not upload any private notes or data on living persons to any website.

## Availability

A desktop application is always available, a web app is only available when your Internet connection is up. You may not be able to do much research without an Internet connection, but with a desktop application you still have access to your application and your data, and there are many other useful things you can do, such as duplicate search or report generation. With a web app, the moment the Internet is down, you loose all access to your data and applications, and cannot do a thing.  
If your desktop crashes, you can reinstall and restore from backup, and continue. If a web site crashes, you have to wait for the owners to fix things, and that might take a long time.

## Large Databases

Those with large genealogy databases know that many genealogy programs can only handle small or medium size databases. That's an issue that transcends platforms. Only well-engineered applications can handle truly large databases with ease. No platform is a magic panancea for poor software engineering.  
Although typical web servers have considerably more processing power and memory than typical a desktop, desktop genealogy applications tend to be more capable than web genealogy apps. Some reasons for this can be found in the different way that desktop applications and web applications are written, they way they work. One particular reason is that your desktop application can claim as much processing power and memory as your desktop can offer, while a web app must balance processing power and memory usage between multiple concurrent users, and is therefore likely to limit individual usage - and thus limit the size of the database it can handle.

Even if a web site can handle a large database, you are still likely to run into a performance issue; a larger database implies longer selection lists, larger reports and so on, and thus more data that needs to be transferred over the network to make the user interface work.

## Responsive User Interface

Desktop apps have a responsive user interface, often showing dialogs, lists and edits boxes almost as soon as you make a choice. A desktop can let you browse through thousands of profiles and hundreds of photos in mere seconds, a web site cannot. However, even if you have an high-bandwidth Internet connection that can download entire high-resolution movies in seconds, performance will still suffer because of the network latency - the time needed to get your command to the server, and its response back to you.  
Many web apps tend to be slow, often make you wait multiple seconds every time you try to do any little thing, and few things are as annoying as sluggish user interface that makes you wait all the time. A sluggish user interface can quickly suck the joy out of whatever you're doing.

## Usability

There are exceptions, but desktop applications generally have a much richer user interface than web apps. Many web apps look clean and simple, and can make desktop applications look cluttered in comparison, but that is often simply because the web app offers few features. Desktop applications usually default to your desktop-wide settings, and often let you change the fonts, colours, text styles and more, to customise the application to your liking, in support of the way you work. Many web apps offer no customisation options at all.

## Cost

There are free programs to be had, but when it comes to paid programs, there's an important difference between desktop applications and web apps.  
Desktop applications can be had for a one-time license fee, web apps require a subscription, and these tend to be relatively pricey. Worst of all, if you stop paying the subscription, you not only loose access to the genealogy app, you may even loose access to your data...  
Desktop genealogy applications are not only considerably cheaper than web genealogy apps, they also keep working if you do not buy the latest upgrade. You can keep using the version you are familiar by and save money by skipping a few upgrades if you like. Only rarely does some major change (such as a new operating system) necessitate buying an upgrade. Desktop software vendors entice you into buying upgrades buy offering desirable new features.

## Data Safety

With a desktop program, you are in control of your data. You have full access to all of your data, and you know where your backups are.  
If you mess up, accidentally delete or overwrite something, or even corrupt your database, you can restore a recent version and continue. You know that you are keeping you data safe.

With a web app, you give away control of your data. The web site owner may limit access to your data at any time, and - despite whatever they claim - you don't know whether they make any backups at all. If you mess up and want to restore some data, you have to ask them to do to. They may be unwilling or unable to do so, and if they are able and willing, you will have to wait for them to do it in their good time. If they accidentally mess up your database, you've probably lost that database for ever, and have to start over from scratch...  
You have no idea how safe or unsafe your data is. If you use a web app as your main app, you are literally gambling with your research, risking all the work you put into it.

PROBLEM DESCRIPTION AND SPECIFICATION

Problem Definition : **-**

Goal of software requirement analysis is the detail understanding of the system and produce software requirement specifications document. This is done after obtaining a clear understanding of the need of the client of the users. What exactly is desired from the software and what the constraints on the solutions are?

The two major activities performed in this phase are:-

## 1. Detailed Investigation

Discussion with the IT department in order to identify and document exact requirement for the system:-

* The basic source of information that was required to develop a new system where the outputs obtained by the interactive with the end users and existing documents about the current mode of operation of the system.
* The working **ACADEMIC KNOWLEDGE BASE SYSTEM** project was a standalone application. That was not able to handle the requirement of spreading network of center. So the department decided to have client-server based application to handle the information.

## 2. Analysis & Determination of System Requirements

* **System Design:** The possible numbers of modules was identified that should be in the system. The interaction with each module to produce the desired result was decided.
* **Detailed Design:** The internal logic of each module specified in the system design was decided.
* **Major Data Structures :** The database tables etc. are decided.

Development Process

## Analysis:

At this point discussing about the Application look and feel, the functions of the Application, Application contents, targeted clients and time get done. Suggestions and sharing experience of team members helps in documentation. Understand a free and open discussion needed to move forward and expect the same.

## Specification:

Based on the discussions and analysis, prepare a draft specification of Application Screens to be developed including the sitemap, process charts, estimated time. This development specification will be reviewed and revised if needed.

## Design & Development:

Design and development plays an important role in Application development. Graphical look and feel will begin to take shape after we get the graphical elements. Graphical elements required for design are client logo, product photographs, ISO and other certification logos, brand identity, and others. Usually our clients provide the graphical elements. If needed we also [design logos](http://www.shriasys.com/logo_design.html), prepare charts, graphs, draw illustrations and arrange photographers and other creative professionals for content development.

Use colors and images that are in tune with your products, brands and services. Provide Application Screens for clients for review and incorporate the changes.

## Content Writing:

Content writing is an important aspect of Application development and plays an important understanding the environment. A clear and concise content is absolutely necessary to communicate with users. A professionally written content can make a difference in getting your message across to the targeted clients. Help clients to bring out all the required text contents like product details, service details, contact address, product specifications, certifications, brand info, FAQ, client comments, case studies, service plans, commercial information like billing, shipping and packing terms, graphs, charts and diagrams.

## Coding:

Start coding of Application in vb and other [technologies](http://www.shriasys.com/technology.html) after getting the text and graphic contents. We ensure all the coded pages look consistently same as the application design. Properly coded application load faster. We ensure every screen carries a unique title, meta data like description and keywords. We constantly improve the quality of code by using many tools and proven techniques to ensure the aplication meets the standards. As a developer we know the importance of maintainable, dependable and well-written code.

## Testing:

Entire Application is tested for broken links, compatibility, slow loading, and slow loading data. We also do code validation, spell check and make changes to correct the errors. We carryout tests on Application processes like registration, sms, etc and Load tests according to the requirements.

Technology Used: VB



**Visual Basic** is a [third-generation](https://en.wikipedia.org/wiki/Third-generation_programming_language) [event-driven programming language](https://en.wikipedia.org/wiki/Event-driven_programming) and [integrated development environment](https://en.wikipedia.org/wiki/Integrated_development_environment) (IDE) from [Microsoft](https://en.wikipedia.org/wiki/Microsoft) for its [Component Object Model](https://en.wikipedia.org/wiki/Component_Object_Model) (COM) programming model first released in 1991 and declared [legacy](https://en.wikipedia.org/wiki/Legacy_system) during 2008. Microsoft intended Visual Basic to be relatively easy to learn and use. Visual Basic was derived from [BASIC](https://en.wikipedia.org/wiki/BASIC), a user-friendly programming language designed for beginners, and it enables the [rapid application development (RAD)](https://en.wikipedia.org/wiki/Rapid_application_development) of [graphical user interface (GUI)](https://en.wikipedia.org/wiki/Graphical_user_interface) applications, access to [databases](https://en.wikipedia.org/wiki/Database) using [Data Access Objects](https://en.wikipedia.org/wiki/Data_Access_Object), [Remote Data Objects](https://en.wikipedia.org/wiki/Remote_Data_Objects), or [ActiveX Data Objects](https://en.wikipedia.org/wiki/ActiveX_Data_Object), and creation of [ActiveX](https://en.wikipedia.org/wiki/ActiveX) controls and objects.

A programmer can create an application using the [components](https://en.wikipedia.org/wiki/Component-based_software_engineering) provided by the Visual Basic program itself. Over time the community of programmers developed third-party components. Programs written in Visual Basic can also use the [Windows API](https://en.wikipedia.org/wiki/Windows_API), which requires external function declarations.

The final release was version 6 in 1998 (now known simply as Visual Basic). On April 8, 2008, Microsoft stopped supporting Visual Basic 6.0 [IDE](https://en.wikipedia.org/wiki/Integrated_development_environment). The Microsoft Visual Basic team still maintains compatibility for Visual Basic 6.0 applications on [Windows Vista](https://en.wikipedia.org/wiki/Windows_Vista), [Windows Server 2008](https://en.wikipedia.org/wiki/Windows_Server_2008) including R2, [Windows 7](https://en.wikipedia.org/wiki/Windows_7), [Windows 8](https://en.wikipedia.org/wiki/Windows_8), [Windows 8.1](https://en.wikipedia.org/wiki/Windows_8.1), [Windows Server 2012](https://en.wikipedia.org/wiki/Windows_Server_2012) and [Windows 10](https://en.wikipedia.org/wiki/Windows_10) through its "It Just Works" program. In 2014, some [software developers](https://en.wikipedia.org/wiki/Software_developer) still preferred Visual Basic 6.0 over its successor, [Visual Basic .NET](https://en.wikipedia.org/wiki/Visual_Basic_.NET). In 2014 some developers lobbied for a new version of Visual Basic 6.0. In 2016, Visual Basic 6.0 won the technical impact award. A dialect of Visual Basic, [Visual Basic for Applications](https://en.wikipedia.org/wiki/Visual_Basic_for_Applications) (VBA), is used as a macro or scripting language within several Microsoft applications, including [Microsoft Office](https://en.wikipedia.org/wiki/Microsoft_Office).

Technology Used: Ms-Access



**Microsoft Access** is a [database management system](https://en.wikipedia.org/wiki/Database_management_system) (DBMS) from [Microsoft](https://en.wikipedia.org/wiki/Microsoft) that combines the [relational](https://en.wikipedia.org/wiki/Relational_database) [Microsoft Jet Database Engine](https://en.wikipedia.org/wiki/Microsoft_Jet_Database_Engine) with a [graphical user interface](https://en.wikipedia.org/wiki/Graphical_user_interface) and software-development tools. It is a member of the [Microsoft Office](https://en.wikipedia.org/wiki/Microsoft_Office) suite of applications, included in the Professional and higher editions or sold separately.

Microsoft Access stores data in its own format based on the Access Jet Database Engine. It can also import or link directly to [data](https://en.wikipedia.org/wiki/Data) stored in other applications and databases.

[Software developers](https://en.wikipedia.org/wiki/Software_developer), [data architects](https://en.wikipedia.org/wiki/Data_architect) and [power users](https://en.wikipedia.org/wiki/Power_user) can use Microsoft Access to develop [application software](https://en.wikipedia.org/wiki/Application_software). Like other Microsoft Office applications, Access is supported by [Visual Basic for Applications](https://en.wikipedia.org/wiki/Visual_Basic_for_Applications)(VBA), an [object-based](https://en.wikipedia.org/wiki/Object-based) programming language that can reference a variety of objects including DAO (Data Access Objects), [ActiveX](https://en.wikipedia.org/wiki/ActiveX) Data Objects, and many other ActiveX components. Visual objects used in forms and reports expose their methods and properties in the VBA programming environment, and VBA code modules may declare and call Windows [operating system](https://en.wikipedia.org/wiki/Operating_system) operations.

Requirement Analysis

Application requirement analysis can be defined as a series of steps using which the needs of a application are determined. Whenever you are in contact with a client or any other party, there are certain lists of expectations or specifications that he has in his mind. From perspective of a person looking forward to a new website the basic questions that he has in his mind include how will my website look? How will it work?

Target audience and many more. The process of gathering such information and details are known as ‘website requirement Analysis’. The person engaged in these operations is addressed as ‘Requirement Analyst’.

It is after the concise format of the website requirement analysis, a software strategy is defined and the process of development proceeds accordingly. Many consider the process of website requirement analysis to be stringent and hectic but on the contrary to it, if the process is followed in the best possible manner, can prove to be a saviour from major changes, iterations & alterations at the time of first releases for testing. Within the process of website requirement analysis, an analyst just not only understand requirement but also define how the website will categorize its users and based on their role offer them the tools to avail services respective to their domain of operation

Process Flow

Operator tells patient about different pathlabs and prices for searched tests

Operator tells patient about different pathlabs and prices for searched tests

Operator tells patient about different pathlabs and prices for searched tests

Operator asks for Test name

Patient choose Pharmacy

Patient choose Pathlab

Patient choose Doctor

Operator asks for service type

Operator open Application and ask patient details for registration

Patient Calls JanElaaj Operator

Patient visits Doctor/Pathlab/Pharmacy with generated SM S

Patient choose from available options to confirm appointment

SM S with OTP get send to both patient and doctor/pathlab/pharmacy with appointment details

|  |  |  |
| --- | --- | --- |
| ADP | Admin Control | The admin panel should have the feature of inserting / deleting and updating the records. The updates should be possible to be done in a tabular format |
| 1001 | The Master tables have to be updated via the admin panel | Clinic\_Master Doctor\_Master Doctor\_Clinic\_Master  Code\_Master Patient\_Doctor\_Master  Pathlab\_Master  Pathlab\_Test\_Offering Test\_Keywords Pathlab\_Test\_Master Patient\_Pathlab\_Shortlist\_Master The columns for each table can be obtained from the Database Tab |

SRS

|  |  |  |
| --- | --- | --- |
| CCD | Create Clinic Details | There has to be a form to Create/Delete/Update Clinic Data (This is a part of the Admin Panel) |
| 1002 | Clinic\_Master | >The Clinic ID has to be auto\_generated >Clinic Name >Clinic Owner Name >Clinic Phone Contact >etc |

|  |  |  |
| --- | --- | --- |
| CDD | Create Doctor Details | There has to be a form to Create/Delete/Update Doctor Data (This is a part of the Admin Panel) |
| 1003 | Doctor\_Master | >The Doctor ID has to be auto\_generated >Doctor Name >Doctor Phone Contact >Doctor Speciality >etc |

|  |  |  |
| --- | --- | --- |
| CDA | Clinic Doctor Association | Create the Association between the Clinic and the Doctor |
| 1004 |  | >Store Doctor -clinic relationship, i.e, which doctors come to >which clinic and what are their timings : >Doctor Consultancy fee, >Doctor Timings >Discount, >EWS\_Patients  >etc |

|  |  |  |
| --- | --- | --- |
| PDM | Patient Detail Master | The Patient details are scored |
| 1005 |  | Details like the Patient Name,  Contact Number,  Gender Address will be stored etc. |

|  |  |  |
| --- | --- | --- |
| STO | Service type Option | Patient can be able to choose which service he/she required like Doctor, Pathlab, Pharmacy |
| 1006 |  | > If Patient Chooses Doctors/Pathlab/Pharmacy then registered Doctors/pathlab/pharmacy details get shows up |

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| --- | --- | --- |
| PDS | Patient Doctor Shortlist | The patient shortlists one doctor from the queried list of doctors |
| 1007 |  | > Hightlight the Doctor shortlisted >Generate OTP code (SMS code and details to both, Doctor and Patient) >Necessary Entries are made in the transaction tables |

|  |  |  |
| --- | --- | --- |
| DRS | Doctor Reports Section | Have a Report Section from which operator can summarize monthly/weakely reports of their patients or bussiness |
| 1008 |  | > Can select from different types of reports like number of patients, total earning,etc. > can select date range for reports |

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| --- | --- | --- |
| CPD | Create Pathlab Details | There must be a form that can Create/Delete/Update Pathlabs information |
| 1009 |  | > Pathlabs Name and contact details > Pathlab unique Id (Auto Generated) > Pathlab Arrceditation > etc. |

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| --- | --- | --- |
| CTD | Create Tests Details | A form that can Create/Delete/Update a list of all possible pathlab tests |
| 1010 |  | > Test Id(Auto Generated) > Test Standerized Name > Test Keywords > etc. |

|  |  |  |
| --- | --- | --- |
| PTC | Pathlab Tests Combination | The system should be capable of showing prices of the same test between different pathlabs |
| 1011 |  | The system should uniquely identify  >Pathlab ID/Name >Test ID/Name >Price > EWS patients will served by pathlab in specific period(like in one month etc.) |

|  |  |  |
| --- | --- | --- |
| QFT | Query for Test | Operator can search for Test. The output should contain the prices of all the labs offering the test |
| 1012 |  | > Test Name > Price Catogaries > Labs Accreditation > Pathlab Ratings(like 4 stars etc.) > etc. |

|  |  |  |
| --- | --- | --- |
| PPS | Patient Pathlab shortlists | The operator should be able to shortlist individual tests / group tests. Depending on the different pathlab vendors, appropriate appointments have to be considered. |
| 1013 |  | > Patient can select pathlab from its queried List. > OTP get generated and send to both patient and pathlab with other details like address and contact etc. > System stores all approperiate information |

|  |  |  |
| --- | --- | --- |
| PLD | Patient Pathlabs Details | Stores and tracks all pathabs Appointment |
| 1014 |  | > Patient-Pathlab details get stored > OTP, Booking date, Processed date get stored > Patient Processed Flag  > etc. |

|  |  |  |
| --- | --- | --- |
| CPD | Create Pharmacy Details | There must be a form that can Create/Delete/Update Pathlabs information |
| 1015 |  | > Pharmacy Name and contact details > Pharmacy unique Id (Auto Generated) > Pharmacy Arrceditation > etc. |

|  |  |  |
| --- | --- | --- |
| PDS | Patient Pharmacy Shortlist | The patient shortlists one Pharmacy from the queried list of Pharmacies |
| 1016 |  | > Hightlight the Pharmacy shortlisted >Generate OTP code (SMS code and details to both, Doctor and Pharmacy) >Necessary Entries are made in the transaction tables |

|  |  |  |
| --- | --- | --- |
| ARG | Appointments Reports Generation | Reports of all the appointments must be generated |
| 1017 |  | >Reports of Doctor’s Appointment  >Reports of Pathlab’s Appointments  >Reports of Pharmacy Appointments  >Reports of patients  >etc. |