A Hospital Management System

Scope

The main objective of this project is to develop a website for a medical clinic to provide an efficient and economical way of making appointments and help in all the related task: clinic and doctor time table management, queue management, and patient appointments exportation. It evident that patients want a fast and easy access to the clinic's services and administering of all the appointments made.

Meanwhile, it is also required that doctors can easily see all the upcoming appointments and give the results to these appointments to the patients.

The high level of competence in the medical field makes it hard to get new customers and make a relatively new clinic stand out from the rest. In order to attract attention to those new clinics we should analyze other successful clinics and see how exactly they became the now worldwide known hospitals and clinics. This analysis will be conducted from the perspective of a user's using the different functionalities of those websites. We will analyze their application in comparison to ours and will make a decision on what functionalities we should also make use of.

Requirements

As a basis, an article on all the different requirements for software development was taken into account during this process.

We divide the requirements in 2 types: functional and nonfunctional requirements.

Functional Requirements

• The user should be able to register and manage his appointments online at any time.
• Database has to store all the information efficiently without any information

loss.
- The user shall be able to search for the doctors by specialty, name, working time and/or gender.
- The user can change his profile info at any time
- Doctors can manage all appointments made with him on his account.

Non-Functional Requirements

• Portability requirements:
A website has to be compatible with different popular web browsers (Google Chrome, Mozilla Firefox, Opera, Safari and Internet Explorer 8+)

• Reliability requirements:
The probability of failure less than 0.01%
Uptime of at least 99%
Less than 30 minutes needed to recover from system failure.

• Usability requirements:
Interface elements (e.g. menus) should be easy to understand
The user should be able to learn to use a system in less than 30 minutes.
Time required for registration less than 5 minutes.
Error messages should explain how to recover from the error
Actions which cannot be undone should ask for confirmation
Responsive design should be implemented

• Space requirements:
User needs only enough disk space and RAM for web browser

• Performance requirements:
All of the operations carried out in the system must respond within 5 seconds
The system has to support 100 concurrent users

• Implementation requirements:
All the plugins and components should be free of charge.

All the plugins should work correctly and satisfy the performance and reliability requirements.

• Standards requirements:
The system should be as close as possible to ISO/IEC 9126 [3] quality standard.

• Ethic requirements:
Users should be informed of their rights and obligations when they come to a visit.
All the risks of services should be told to the patients

• Interoperability requirements:
The system should properly interoperate with the database (MySQL)

• Security requirements:
The password should be at least 8 characters, 1 Upper case, 1 lower case and 1 number.
Website should use different techniques in order to have secure transfer of data to database

• Privacy requirements:
All the user's data can't be sold or distributed to other entities without their previous approval.

• Organizational requirements
Company will have a developed business plan
Company will have to have all the necessary personnel needed for its functioning.
There have to be meeting each week to analyze how business is going.
Everything has to be documented.

• Scalability requirements:
In case of needing more bandwidth or disk space, the system should be prepared to those situations.
When increasing the resources of the website, there can't be any penalty to response time or having more errors than usual.

System Users and Their Involvement at The System

• Guests:

Those are the users that are not registered and access our website. We can say

that they are our potential clients so we have to let them see all the information they

might be interested in about services provided by a clinic

o Display information about clinic including services, specializations, company

description

o Display doctors' profiles with their specializations and working schedule

o Search for a doctor based on some criterions like working day or gender

o Contact form with a clinic

o Register/login form

o Access social media of the clinic

o Make guest appointments

• Patients:

This user group is the one that created an account in our website and had logged in. They have all the functionality provided to Guest user group (except register/login form and make guest appointments) in addition to the following ones:

o Make online appointment form with one of the doctors searched previously by some criterions

o View all the upcoming appointments

o View the results of the past visits

o Login and logout from account

o Cancel any of the upcoming appointments

o See and change their own profile

o Export iCal of the appointments

• Doctors:

This user group are the ones logged in with a credentials provided to them by a company. They have Guest functionality (except Register/login form and make guest appointments) and the following:

o Display upcoming appointments in a calendar format

o Give result to a visit

o See the medical file of the patients (all the appointments they made with this doctor up until now).

o Add his/her holiday day

o See today's appointments.

• Receptionist:

This group will be logged in with credentials given by a company. They have all the functionality provided to Guest user group (except register/login form and make guest appointments) in addition to the following ones:

o Display today's appointments

o Check if a patient came to appointment or not

o Display and change any patient's profiles

o Put holidays and non-working days and notify patients if there is some problem.

o Make an appointment for another patient Online Medical Appointment Scheduling System 24

o Show medical files of any registered patient

o Add a holiday day of the clinic or a doctor

o Create a new doctor account

o Create a new patient account

o Cancel or edit any of the upcoming appointments

o Send a message to some patient

o Show clinic's holidays and delete them if needed

Saloon Management System

A beauty salon or beauty parlor is an establishment dealing with cosmetic treatments for men and women. Other variations of this type of business include hair salons and spas.

Objectives of The Project

Objectives of doing this project are to;

- Eliminate the paper-based work use at the Salon premise such as, usage of diaries to note down appointment details, writing manual invoices for the payments done by the Customers etc.
- Eliminate the data redundancy; keeping appointment details at several places (Diary, mobile etc.) by several people (Owner, Employees, Customers etc.).
- Abolish the wastage of time, resources, efforts and money of the Employer, Employees and Customers (Stakeholders).
- Improve the efficient and effectiveness of the Salon management activities, services and processes like maintaining Customers, Employees, Appointments and Payments etc.
- Ease the management and decision making while improving Salons' good name.
- Improve the Client satisfaction and Employee satisfaction.
- Enhance the Stakeholder integration.

Scope of The Project

- Providing the facility to registering Salon staff and maintaining their details.
- Providing the facility to registering regular Customers and maintaining their details.
- Facilitate appointment handling.
- View appointments leaves and holidays through an event calendar.

- Handling Salon Services along with their respective prices, hours etc.
- Providing Customer Payment handling option.
- Generating invoices through the system.
- Generating reports to support the higher managerial decisions.
- Maintaining an information center (dashboard).
- Reminder generating facility through emails

Requirements

- Basically, Non-functional requirements describe 'how the system works', while functional requirements describe 'what the system should do'. Observations and Interviews were conducted as facts gathering methods at the requirement gathering phase in order to gather requirements.

Functional Requirements

A functional requirement document defines the functionality of a system or one of its subsystems. It also depends upon the type of software, expected users and the type of system where the software is used.

Functional user requirements may be high-level statements of what the system should do but functional system requirements should also describe clearly about the system services in detail.

- Create salon staff and maintaining (Update/ Inactive) their details.
- Create regular customers and maintaining (Update/ Inactive) their details.
- Create salon services and maintaining (Update/ Delete) their details such as prices, hours etc.
- Maintain resources (Create/Update/ Delete) at the salon premise.
- Reminder generating facility provide through the system and send via mails for all the respective stakeholders.
- Maintain holidays and staff leaves.

- Facilitate appointment handling through an event calendar by the system.
- Providing customer payment handling option.

o Enter payment details for the system.

o View customers' payment balance details.

o View customers' gross payment details.

- Generating invoices through the system.
- Generating reports to support the higher managerial decisions.
- Maintaining an information center to display crucial data charts.

Non-Functional Requirement

Basically, non-functional requirements relate to qualities of the system that cut across
user facing features, such as security, reliability, and performance.

- Accessibility – The system is able to be access anywhere at any time by the
  authorized users.
- Accuracy – The correctness of data inputs to the system was ensured.
- Availability – System is available within working hours. But can be used at
  special occasions also. E.g.: - At a bridal dressing
- Efficiency – Users were given the facility to perform the salon management
  processes correctly through the salon sales record management system.
- Effectiveness – Users were given the facility to perform correct salon
  management processes via the suggesting system.

- Maintainability – This is a considerable factor especially for a non-technical
  user. Maintainability of the system is not more complex.
- Privacy – The confidentiality of the data inputs to the system has been assured.
- Reliability - Ability of the suggested system to function under stated
  conditions for a specified period of time has been assured.
- Robustness – When handling payments this function was considered.
- Security – The data feeds to the system has been protected by controlling the
  user access privileges.

System Users and Their Involvement at The System

Mainly there are three system users who need to access the system. They are as
follows:
1. System administrator
2. Stylist/ Employee
3. Cashier

System Administrator
- Allow creating Employees/ System Users.
- Allow creating regular Clients.
- Allow maintaining reference data.
- Allow allocating leaves for the staff members.
- Allow generating crucial Reports.
- Allow viewing crucial Reports.
- Allow viewing Information Centre.
- Allow viewing payment information.
- Allow viewing appointments, leaves and holidays calendar.

Stylist/ Other Employee
- Allow creating appointments.
- Allow maintain appointment details.

- Allow maintaining appointment statuses.
- Allow viewing appointments, leaves and holidays calendar.

Cashier
- Allow doing payments.
- Allow printing the invoices.
- Allow viewing appointments, leaves and holidays calendar.