Introduction

Document Overview

This document introduce HEALTH-TECH product study plan. It introduce general and technical description, development plan, operation plan, cost analysis and marketing study.

Business Objectives

- Offer easy and efficient way to connect patients with their doctors.
- An innovative and new way to book appointments for doctors clinics
- Allow doctors to effectively follow up their patients health conditions in real time.
- Provide a complete, detailed timeline for patient medical history.
- Offer the patient a quick, easy way to find suitable doctors.
- Offer free and self growing service to everyone in the healthcare field.

Background

Introduction

In the world of today, the healthcare field is becoming an important, fundamental and basic part of everyone's and every family life. People everywhere and in every age, from time to another, need continuous, high quality and sustainable care of their health. Families and Patients might struggle to find a good doctor and a suitable, high quality but low cost service. Studies showed that people, who search for doctors online, want to instantly find all they need about the doctor that they will book an appointment with. Here in HEALTH-TECH we understand and appreciate users' needs, hence we offer you our unique system. With Health-Tech, we guarantee you a free, high quality service to instantly get into your doctors, book your appointments, organize both doctors and patient appointments thereby save their time, search for clinics and doctors in organized way and according to their fields, update your medical history to make it easy for doctors, allow doctors to give patients medical prescriptions easily and efficiently and provide an efficient method to follow up with doctors after the clinic appointments. With all these features, we guarantee you the most efficient, well organized solutions to your health life, so that you cannot worry about it anymore.

System Overview

- **Doctor Account**

    Doctors get account of their type, that account contains the complete information including, but not limited to, his personal information, contacts, and his medical career information and a rate given to him by his patients.

    The doctor accounts also enables him to: create a personal profile, create a clinic page for clinics that he manages or works in, get in touch with his patients, access the clinic appointments anytime he wants, see updates from his patients, easily write medical prescriptions to his patients and follow up with them after clinic appointments.

- **Patient Account**

    Patients get their accounts. A patient profile contains complete information about him, including his personal information that doctors need, his contacts, and medical history including all the previous appointments he made, and health conditions he previously suffered from. The patient account also allows the patient user to search for doctors and clinics, once he finds the suitable doctor he can easily get an appointment at his clinic, after the appointment, the patient usually needs care after the appointment and follow up meetings with his doctor.

- **Clinic Page**

    Each doctor can create or join a page for a clinic he runs or works at, a typical clinic page contains contact information, address, doctors that work on it, time slots of medical appointments, Patient can directly reserve an appointment from the clinic page, patient can also know the available slots or the number of appointments right before his one in real time to save his time.

- **Appointment Management system**

    Our website offers a system for managing the appointments, as the patient gets his doctor appointment. Doctor can instantly access patient information and all previous medical records to help him give the right and accurate diagnosis. During the appointment, doctor can add the diagnosis to the patient profile, write prescriptions for the patient that he easily can print out, prescriptions also will be added directly to his profile. When having a new appointment, it will be added to the clinic time slots, and to the doctor and patient calender to be able to avoid any time conflicts.

Health-tech:

Health-tech is a complete health care platform built to make it easy, smart and efficient for doctors and patients. Both doctors and patients have profiles on Health-tech, it allows patients to know the best doctors in the field they need, easily make clinic appointment and easily order medicines from pharmacies as they got their prescriptions online. For Doctors, they can follow up with their patients, looking carefully at their medical history or their previous records and write prescriptions online directly to the patient Profile.

Reserving clinic appointment

Patients now can easily reserve and schedule their doctor appointments, know their turn in the clinics so that no need to waste time waiting and follow up with their doctors with all privacy guaranteed.
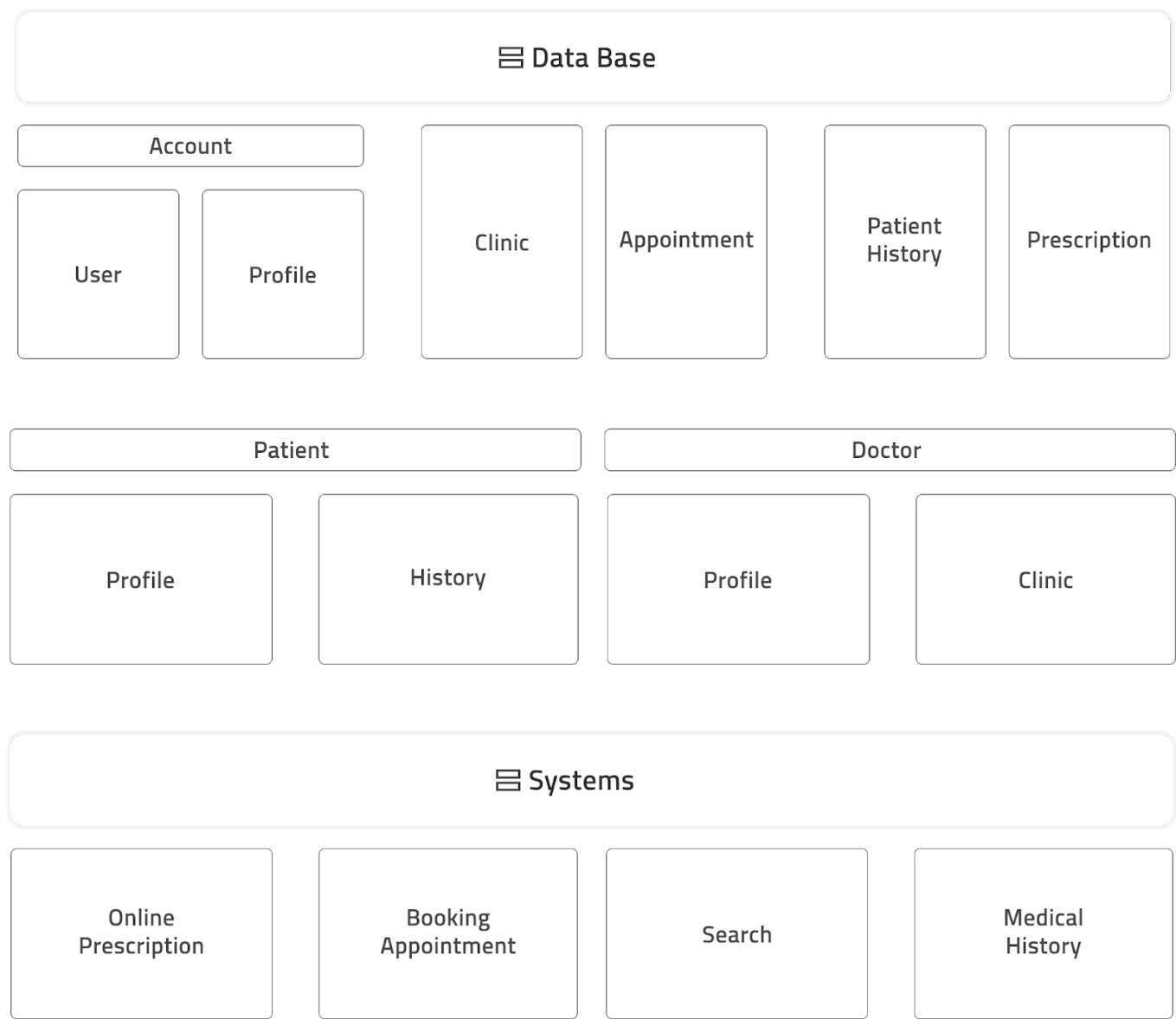
Smart Prescriptions

After getting online medicine prescription, Patients can easily order medicine from pharmacies, organize their medications timing easily to guarantee they never forget to take medicine on time and to get an alert if the medicine is about to finish to get another One.

Easy follow-up

Almost all the patients need to follow up with their doctors to be sure they are being healthy. Health-tech presents an efficient communication channel between doctors and their patients, schedules check-ups appointments upon doctors request and simply changes the doctor-patient relationship.

System Architecture

Data Base

Account

- User
- Profile

- Clinic
- Appointment
- Patient History
- Prescription

Patient

- Profile
- History

Doctor

- Profile
- Clinic

Systems

- Online Prescription
- Booking Appointment
- Search
- Medical History

System Features

Types Of Accounts

When the user gets into the website, there is 2 types of accounts he can choose of:

A. Patient account

Each patient will have a private account which will give him full access to all services in the website, Just by filling some basics information, the patient will be able to create his own account which is necessary so that we can guarantee a complete privacy to the patient and also guarantee him a simple and easy experience with our website

So for a patient to create his account, He has to enter these basics information :

- Username
- Password
- Gender
- Full name
- Date of birth
- Age
- An active email
- Phone number
- Address

by filling all these information correctly, the process of creating an account will be done and the patient will be ready to start his/her experience with the website.

Doctor Account

Each doctor will create his own private account which will contain all his public information that the patient should know about, It will also help the doctor to create an account for his clinic and put it on the website so that it will be easy to reach by anyone and that will make the process of reservation very simple and easy to everyone.

So the doctor has to do is filling a simple form which has some basics information as shown :

- Username
- Password
- Gender
- Full name
- Date of birth
- Age
- An active email
- Phone number
- Address
- Medical Major

This information must be entered correctly and accurately as the patient will see them and know about the doctor so it is important to be sure before entering any piece of information.

Profiles

After creating an account on the website, each account whether it is for a patient or a doctor will have a profile that contains specific data about this account and it will be different if it was a patient or a doctor and by providing these data, It will make the relationship between doctors and patients easier and more efficient .
And the two types of profiles are:

Patient profile

After creating an account, Each patient will have a profile which contains the data that he/she already entered when creating an account and some other data about some medical information.
And the type of data in the profile are :

- Normal profile data (Name, Age, City, Gender,…….).
- List of appointments: This will contain all the appointment that he/she already reserved.
- List of prescription: This will contain all the Previous prescriptions that the patient had from previous examinations.

Doctor profile

After creating an account, Each doctor will have a profile which contains the data that he/she already entered when creating an account, It will be a little different from the patient's profile, It will contain basics information and some other medical information. And the type of data in the profile are :

- Normal profile data (Name, Age, City, Gender,…….).
- List of patients: This list has all patient that this doctor is dealing with.
- Access to prescription.

Create online prescription

HEALTH-TECH web app gives Doctors a way to write online perceptions to his patients instead of hand-written perceptions. The doctor can add a description of his patient health status, list of required medicines. The doctor can specify the times of taking medication for each medicine. and specify consultation date.

Medical History

Each patient has a medical history connected to his profile. It creates a timeline with patient diseases, prescriptions, notes to help doctors to know more about the patient.

Whenever a new prescription is created, a new history record is added to timeline and a reference to this prescription, doctor diagnoses and notes. Doctors can access this patient profile to add some notes for him.

Search

A patient user can easily look up for a suitable doctor or an good near clinic by our searching system. The search system allows patient to find doctor by looking up for them by their names, their medical specialization, their place. And they can look up for clinics by the clinic medical department, doctors work at it or the clinic address.

Online Booking system

Our Booking system offers the following:

- An innovative and new way to book appointments for doctors clinics
- A Simple and an easy way to manage and schedule appointments by accounts
- Dates of consultation and second medical opinion
- Available time slots for the doctors.
- Set up a following up sessions with doctor after the examination and remind the patient of them.
- Reminding the patient of the appointment

System Development and Operation

Overview

The system development is performed using Agile methodology. Initial R&D activity should be applied to experiment tools and techniques. Later continuous R&D activity will run beside the system development activities. The first version of the system should take two months. After release, the system will enter an initial operation phase for four months. During that phase the whole development team will communicate directly with the operation and business team. Later the system will enter the final operation and maintenance phase. During that phase a minor development team will provide an indirect technical support.

Development Plan

	1	2	3	4
Study Requirements	■			
Management Planning	■			
Preparation	■			
Test Planning	■			
Implementation		■	■	
Research		■	■	
Testing		■	■	
System Testing		■	■	■
Final Release				■

Team

Team	Role	#
Management team	Project Manager	1
Development Team	Team leader	1
	UI/UX developers	3
	Backend Developers	5

Tools

Health-Tech will be developed using open source tools, languages and servers. Commercial tools will be used in case there is no open source alternative. This will decrease the cost especially for long term operation. While development only online tools will be used for management, tracking, testing and source control. This will increase the collaboration between team members even they are not located at the same place. Also, this will allow external teams and members to participate.

Operation	Recommended tool
Source Control and Versioning	Git/GitHub
Tasks	Slack
Tasks and Issues Tracking	Github
Team Communications	Hangouts, Slack
Structured Database	SQLite
Programming Languages	Python (Django)
Operating Systems	Windows / Linux(Ubuntu)
Documents	GitHub (wiki) / Google Docs
Host Management	Heroku
Planning	ProjectLibre
UX Design	Photoshop

Technologies

Frontend	HTML5/CSS3	JavaScript/jQuery
Backend	Python (3.6)/Django (2.1)	SQlite

Infrastructure

Type	Name	#
Development and Testing Infrastructure	Laptops, Mobiles and Tablets	10
	Online Development Server (Virtual)	1 Server
	Local Backup Server	1 Server
Initial Production Infrastructure	Laptops, Mobiles and Tablets	10
	Online Server	1

Assumptions

- The system completely depends on existing of patients and doctors on it.
- The system completely depends on free open source tools and languages.
- Patients should approve to share all their information and medical history with doctors.

Risks

In the case of absence or delay of dates:

Our system must warn the patient if any of his appointments is cancelled or postponed and set him for an alternative appointment upon his desire.

In the case of users who didn't show up for the appointment

Our system must send warnings to users if they set a fake appointment, if it's repeated more than 3 times, The system shuts the user account down.