

Software Requirements Specification

Of

SaveLife

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Chapter 01

Introduction

1.1 Purpose

One of the biggest breakthroughs of medical science in the twenty-first century is organ transplantation. It is a therapy that can save a person's life. Organ transplantation has given persons with organ failure a better quality of life, allowing them to live a normal or near-normal life. Improved technology, a better knowledge of rejection, the discovery of newer immunosuppressive medicines, and advancements in medical treatment have all contributed to the progress in organ transplantation over time. However, the biggest problem of organ transplantation is the shortage of donated organs. The purpose of this app is to find donors for the patients who are in need of organs for transplantation and arrange a formal meeting between them so that they can reach their decision.

1.2 Intended Audience

This document is for anyone involved with the creation, development, and management of this software. In other words, anyone involved with the development and management can access this document.

1.3 Intended Use

This document can be used to get an overall idea about the software. Intended audience can access this document to learn about the purpose or goal, functional & non-functional requirements, risk definition, user classes, user needs, assumptions, operating environment, constraints of the software. In simple words, this document gives an overview of what, why and how we are going to develop.

1.4 Product Scope

The main objective or goal of this product is to provide organs to patients with organ failure. This product will give the patient an opportunity to live again and the donor an opportunity to earn money in exchange for their donation. By using our app, a donor gets to choose between "live donation" and "after death donation". The donor can ask for money for their organ in case of live donation. After death donations will be free of cost. If all the requirements of transplantation of a certain patient match with any donor listed in the database of our product, we will notify both parties and arrange a formal meeting in person. The patient and donor can discuss this in the meeting and finalize their decision. After confirming from both parties, our business goal is to take a certain

percentage of the amount that both parties agreed upon. The percentage will differ considering the financial condition & the donated organ of the donor. Our priority is to ensure that the donor gets a fair share of the money. However, 15% is the maximum percentage that will be charged. There will be a "payment" feature in our product through which our share of the money can be paid. Our product will also have features like "fund rising" (to raise funds for the poor patients), "Transplant Centers" (information about the doctors and hospitals where the transplantation takes place), and "Volunteering" (volunteer in raising funds and other necessary works), etc. As the demand for organ is much greater than the number of donations, A black market of organ creates on its own which also involve crimes. Our product might act as an alternate legal market of organs which will eventually force these black organ markets to vanish.

1.5 Risk Definitions

We are creating software that may act as a legal market for organs. Donors will donate their organs in exchange for money or someone might donate their organs after death which will be free from money exchange. In Bangladesh live donation is allowed only by close relatives and any sort of money exchange is forbidden. So, there is a high chance that our app will not get government approval for the live donation option. In that case, we will only be able to offer the "Afterlife donation" feature and our business goal will turn into a complete failure. We look forward to a near future when donating organs for money will be legalized in all the developed countries so that we can reach our goal.

Chapter 02

Overall Description

2.1 User Classes and Characteristics

2.1.1 User Classes

- Patient Class
- Donor Class
- Volunteer Class

2.1.2 Characteristics

- User can identify himself as patient, donor, or volunteer while registering
- User can request for an organ that is not available in the current database

2.2 User Needs

- Register
- Request for Organ

2.3 Operating Environment

The operating environment for our software is listed below:

Operating System: Our software is a web-based app. Therefore, any operating system which allows web browsing can run the app.

Programming Language: Python, CSS, HTML

Database: MySQL

Framework: Django

2.4 Constraints

- All the information of users will be stored in a database
- The system will be available 24 hours a day
- Users must put their correct username & password to login in order to use the services of the system.
- The system can be accessed from any device that supports web browsing
- The system will work on our existing technology infrastructure. New technology might be introduced in the future.

2.5 Assumptions

- User is familiar with basic terminologies like "Login / Logout", "Register", "Form fill up" etc.

- User has a good command of English
- User knows how to browse in web and can operate a web application
- User has internet access and a device that supports web browsing

Chapter 03

Requirements

3.1 Functional Requirements

- a. As a user I want to register myself as a donor or patient or volunteer so that I can create an account and login to the system.

Confirmation/Acceptance:

1. Users must provide a valid email address.
2. Users must verify their email address
3. Users must choose a strong password (At Least one uppercase letter, one symbol & one number, minimum length of the password is 8 characters)
4. Users must identify themselves as donor, patient, or volunteer.
5. Users must provide all the relevant information while registering.

- b. As a user I want to request for an organ so that I can get the organ that is not available right now.

Confirmation/Acceptance:

- Users can make a request for an unavailable organ.
- Users will get notified when their requested organ becomes available again.

3.2 Non-Functional Requirements

3.2.1 Performance Requirements

The following must be clearly specified in order to assess the performance of a system:

1. **Response Time:** The application should always load in less than 0.1second.

2. **Workload:** The system should be able to handle 80,000 users.
3. **Platform:** Support for a Variety of Devices.

3.2.2 Safety Requirements

All data of the main database will be stored in a secondary database as backup. If server failure or any other catastrophic failure causes damage to the main database, all the data can be recovered from the backup.

3.2.3 Security Requirements

Our software will ensure the maximum privacy of users' data. It will also take care of other security options such as Authentication, Authorization, Error management, Session management etc.