Problem Statement and Goals
Software Engineering

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Table 1: Revision History

Date	Developer(s)	Change
2023-09-23	Alan Scott	Added goals and stretch goals
2023-09-24	Alan Scott	Added additional stretch goal
2023-09-24	Aamina Hussain	Added problem statement

1 Problem Statement

1.1 Problem

Clinical trials are a great opportunity for people to access alternate forms of treatment when they do not benefit from conventional or readily available treatment options. However, not many of these patients are able to take part in these clinical trials. This is mostly due to there being no direct path or connection between the researchers, patients, and healthcare providers. The lack of connection makes it difficult for patients to learn about possible trials they could qualify for, while also making it difficult for practitioners to find patients to take part in their studies.

1.2 Proposed Solution

[Team name] proposes to solve this problem by developing a web application that will by accessible by both practitioners and patients. The web application will use existing repositories of active research studies which will allow patients to have better access to clinical trials and make it easier for practitioners to find potential participants and match them to studies they are eligible for.

1.3 Inputs and Outputs

Inputs:

- Requirements and constraints about active research studies
- Participants' necessary medical and demographic information

Outputs:

- A match between the participant and the studies they are eligible for, if any
- An analysis of which demographic of patients are more interested in taking part in a clinical trial

1.4 Stakeholders

- People who wish to take part in a clinical trial
- Practitioners/researchers who need to find potential participants to take part in their clinical trial/research studies
- Healthcare providers who would like their patients to have the opportunity to take part in a clinical trial if they are not benefitting from conventional treatment options
- Dr. Terence Ho and Dr. Ciaran Scallan (project supervisors)

1.5 Environment

Software: A web application with a user-friendly interface that can be accessed by both participants and practitioners.

Hardware: A computer or smartphone that the user can use to access the web application.

2 Goals

Goal	Explanation	Reasoning
Data Collection	The system should collect personal and medical information from the client. This data will be stored in a remote repository.	The data will need to be accessible by the system to allow for the matching of patients to studies.
Study Listing	Clinicians should be able to create listings for studies in need of patients containing details of the study.	Clinicians will need a method in which they can recruit appropriate patients for their studies.
Remote Access	Users should be able to access the system through a web application over the internet, regardless of location.	Making the system readily available to the end users over the internet will maximize the accessibility of the system and improves the end user experience.
Security	The system should store user data in a manner such that it is only accessible by the intended parties.	Stored data will pertain to personal and medical data, which is subject to high standards of data security.
Ease of Use	The user interface should be easy to understand by patients and clinicians alike. The interface should be intuitive to the point where users do not need to be taught how to use it.	The interface will be used by end users with a varied range of technical ability. Therefore, the interface should be as easy to use as possible.
Multiple Views	There should be different views for the system interface depending on the user group to which a user belongs. For example, patients seeking studies will have a different interface than clinicians seeking patients.	Patients and clinicians will have different uses for the system, and will therefore need separate views for their differing use cases.

3 Stretch Goals

Goal	Explanation	Reasoning
Expanded Search	The system should allow users to search for studies from multiple repositories.	The system should be scalable to include other repositories to pull studies from additional or external sources.
System Availability	The system should be virtually always available to the end users.	Maximizing uptime will make the system more accessible to users and increase the quality of the end user experience.
Speed	The system should load and react to user input quickly.	Slow loading times will negatively impact the end user experience, potentially to the point of them leaving the site. Fast loading times contribute to positive user experience.