SDGP Team Name

Codex

SDGP Team No.

47

Product Name

UrHeart

Problem Tackling

Heart diseases have been found as the prime source of death in recent years even though they can be controlled and managed effectively, given that the identification happens in an earlier stage. A significant challenge faced by health care organizations is heart disease detection. Although there are instruments that can predict heart disease accurately, the issue lies within the cost and efficiency. Additionally, it is not possible to monitor patients every day in all cases accurately and always consult a patient by a doctor since it requires more sapience, time, and expertise.

Solution

'UrHeart' is a mobile-based application that enables users to self-diagnose and arrive at the predicted result whether they have any heart-related complications or not. The KNN algorithm enables 'UrHeart' to uncover significant knowledge about your heart's underlying conditions.

User Scenarios

Scenario 1

John feels an unusual shortness of breath and a lightheadedness after climbing the flight of stairs to his bedroom. However, since John is aware of these early symptoms of heart diseases, he manages to get the test values and enters the data to 'UrHeart'. The application predicts John is prone to a heart disease and recommends him a list of doctors to choose from.

Scenario 2

Tanya had a long day at work, and on her way home she suddenly feels a mild chest pain like a squeezing in the chest. Tanya quickly rushes to a medical center and gets an ECG report. Tanya then goes home and uploads a png version of her ECG graph to 'UrHeart' and it recognizes an irregularity and recommends her a doctor through the application.

Competitor Analysis and discuss why your product is unique

Feature	Our Product	Healthcare+	Cardiio	PulsePoint
Multi-Platform Support	✔	-	-	✔
Heart Disease Prediction	✔	✔	-	-
ECG Reading	✔	-	-	-
Alerts	✔	✔	✔	✔
Community	+	+	++	+++
Multi Language Support	-	-	✔	✔
Patient Library Maintenance	✔	✔	✔	✔
Cost	$	$	$$$	$

Unlike all the rival products, our application offers users to predict heart disease using manual data entry as well as ECG graph input all at an affordable cost.

Discuss Business Viability and Business Model

This application will initially be released for free on the Appstore. Assuming the succession of the product, the finalized product will be implemented through hospitals where the staff can use our product as a second measure for incoming patients to increase the speed of the process.

Discussion of Data Science Component

We are planning to use machine learning to find pattern of the heart's underlying conditions to arrive at the predicted result. We are using KNN algorithm for this algorithm and for ECG reading we are planning to use image processing.

Technologies/ Resources Used in the Application

React Native	Front-end development
Python – Flask	Back-end development
Google Colab	ML components
Android Studio	Build of the android application
XCode	Build of the iOS application
GitHub	Version controller
Click Up	Work management application
Slack	Communication Platform
Google drive	Storage solution
Google Docs	Collaboration medium for writing

Team Details

	Full Name	Phone Number	Email	NIC Number	UoW ID	IIT ID
Member 1 (Team Leader)	Miuru Abeysirwardana	0762405089	miuru.2019450@iit.ac.lk	200103103738	w1761114	2019450
Member 2	Ojitha Gamage	0776967357	Ojitha.20200188@iit.ac.lk	200031804760	w1809989	20200188
Member 3	Tharushi Yapa	0717408095	Tharushi.20200554@iit.ac.lk	996900991v	w1830243	20200554
Member 4	Mohomed Thariq	0769247881	Seyed.20200758@iit.ac.lk	200134001824	w1833602	20200758
Member 5	Madushani Rodrgo	0762880783	Madushani.2019360@iit.ac.lk	987211016v	w1761300	2019360