HEALTHCARE VOLUNTEERING AND MONITORING SYSTEM

An Engineering Project in Community Service

Phase – II Report

Submitted by

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Bonafide Certificate

Certified that this project report titled **"Human Healthcare Volunteering and Monitoring "** is the bonafide work of "19BCE10152 ARYAN JAIN**"** who carried out the project work BY INDIVIDUAL CONTRIBUTION –

- Helped with the research part, project and functional Ideas.
  Read many of the research papers for the biomarker and the sensors for the functionality. Work of detail designing and Requirement analysis.
- Created the database and Managed the connections.
  To store the data of the patients that is required by the AI model to find the accurate results.
  Store the data of the user of the Android application, their all details and their input for the AI model to fetch the result on the android apk.
  Store the login credentials of the user of android application.
  Android app Connectivity to the Database.
  All encryption (query) for MySQL database.
- Build a "GOFREE" Android App with all the features described above.
  Android app works with user feedback and stores database.
  All coding for Android app.
- Provide Presentation and Editing of Reports.

under my supervision.

This project report (Phase II) is submitted for the Project Viva-Voce examination held on 22nd April, 2022.

Supervisor

Comments & Signature (Reviewer 1)

Comments & Signature (Reviewer 2)

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1.INTRODUCTION

A condition of total mental and physical well-being is referred to as health. The purpose of healthcare is to help people retain their best health.

In today's world, a heart attack could be a significant medical condition.
An obstruction in the gut muscle's blood supply.

A medical emergency could arise as a result of an attack. When a grume prevents blood supply to the stomach, cardiac failure develops. Tissue lacks oxygen and dies without blood.

However, we now face a more hazardous and resilient version of it.

SILENT MYOCARDIAL INFARCTION

Heart failure that goes unnoticed

A silent coronary failure can be defined as a heart attack with few, if any, symptoms or symptoms that you don't identify as signs of heart failure. You could not be in pain or

Shortness of breath is frequently a sign of coronary artery disease.
According to a study conducted in the United States, about half of all heart attacks are silent, causing no discomfort, shortness of breath, or cold sweats.

Overall, silent heart attacks were linked to an approximately threefold greater chance of cardiomyopathy death and a 34% increased risk of death from any cause.

According to a 2018 study, a silent attack increases the chance of cardiomyopathy by 35 percent. People in their early 50s and younger have a significantly higher risk of developing Alzheimer's disease.

Furthermore, according to a study published in 2021 by Trusted Source, those who have had a silent attack are more likely to suffer a stroke later in life.

As we all know, this is frequently a real issue, so we're seeking to find the most effective remedy we can.

We're working on an AI-based biomarker sensor that can detect silent coronary artery disease using a person's saliva and heartbeat.
We also provide an online and app option for a faster and more convenient experience.

2. Objective

- To find a solution to a significant problem silent assault
- Having a better healthcare facility is a priority.
- Fast and remote healthcare monitoring is now possible.
- Create a user-friendly method to ensure that the healthcare system is fair.

3. **Existing Work**

- Aleksandar Kotevski's e-health monitoring system:-

  While reading this research paper, we discovered that they had a difficulty with the hardware, with the primary issue being the system's cost. However, this model is still in use somewhere, albeit inefficiently. However, as compared to our approach, we save money on equipment and ensure a solid hardware-software link.

- M. Saranya conducted a survey using an IOT-based health monitoring system: -

  This smart sensor device is simply used to send the collected data to the doctor and receive a response. However, one big disadvantage is that they must gather data from several systems that are fed into this system, whereas with our technology, we use a single device to collect data and deliver it directly to the hospital and doctor.

- Some related efforts are Ali I. Siam's SEHMS on IoT and Atef Abou Elazm's Smhs cloud computing.

- There are numerous projects that are comparable to this one, however they all have flaws and difficulties such as security, hardware, and user interface.

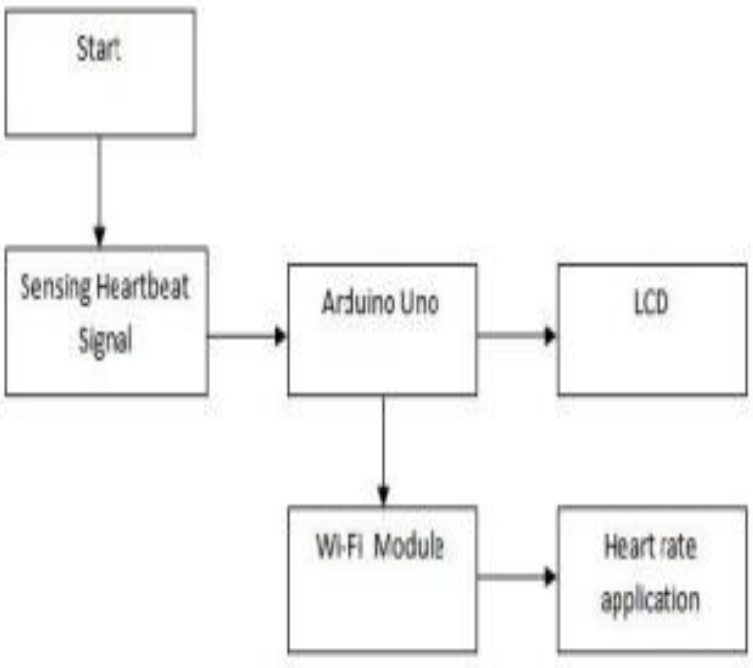
4. Proposed Work

- We're developing an AI model that acts as a biomarker sensor, detecting serious problems such as silent heart attacks via saliva and heart rate.
- For the user, we also have a web and app option that makes it easier and more informative.
- It uses electronics to collect all essential inputs from the user, such as saliva and heartbeat.
- The device then uses biomarker sensors to process the data as needed, and finally provides the measured outputs to the web/app.
- The web/app then analyses these output data using software-defined thresholds for various types of measured quantities.

5. Project Modules (Hardware)

5.1 Heart Beat Sensor

The proposed technology excels in detecting silent heart attacks through the use of heart rate monitoring. A pulse sensor, an Arduino board, and a Wi-Fi module are used in our approach. The pulse sensor will begin sensing heart rate measurements when the system has been set up and will display the person's heartbeat on the LCD screen. It will also transfer data over the internet via a Wi-Fi module. The system has a set point that can be used to determine if a person is healthy or not by comparing his or her heartbeat to the set point. Following the establishment of these parameters, the system will begin monitoring the patient's heart rate and will alert the user if the heart rate rises or falls outside of the established parameters.



Implementation

A.] The Arduino Uno

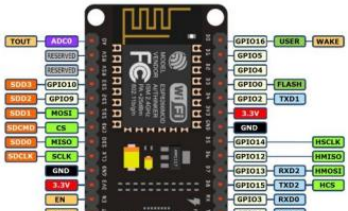
It's a microcontroller board called the Arduino Uno.
It is based on the ATmega328 microcontroller.
There are also 14 digital input and output pins,
with six of them being used as PWM outputs.
For serial communication, the RX and TX pins are used to communicate between Arduino boards, computers, and other devices.
It has a 5V working voltage.
The ATmega 328 features a flash memory of 32KB
for the storage of code. The ICSP is a non-profit organization dedicated to improving the (serial programming in-circuit)
We'll be able to use an outside programmer because of the header to our microcontroller unit and upload software

B. Pulse Sensor

The pulse sensor for Arduino is a plug-and-play heart rate sensor.
It can be used by anyone who just wants to incorporate live heart rate data into their developments.
The sensor shows blood flow and is designed to provide a numerical output of
heart rate.

C. NodeMCU ESP 8266

The Node Microcontroller Unit (NodeMCU) is an open source software and hardware expansion background that can be built anywhere on a low-cost system based on the ESP8266 chip. We used NodeMCU in our system to receive data from Arduino and broadcast it over the internet.



5.2 Salivary Sensor

B-type natriuretic peptide (BNP) and the N-terminal portion of the propeptide of BNP helps us in evaluating patients with suspected Heart Failure (HF).
20% of blood plasma is secreted in our saliva. It has fewer disadvantages when compared to blood samples because it does not clot and the collection is non-invasive resulting in fewer complications.

Study - (From research paper)

The study includes 35 decompensated HF patients who were hospitalised to the hospital and 35 HF patients who came in for a check-up (outpatient group). The control group is made up of 25 people who have never had heart failure.

Measurement -

- Saliva samples while fasting was collected from all participants..
- The sample was then centrifuged.
- This kit had a coefficient of variability (CV) of 10% and a CV of 12% for interassay and intra-assay variation, respectively. The assay range was 5 ng/L to 2000 ng/L, with a stated sensitivity of 2.51 ng/L. A kit calibrator vial with a concentration of 2400 ng/L was available. The concentrations of this solution were serially diluted to 1200 ng/L, 600 ng/L, 300 ng/L, 150 ng/L, and 75 ng/L.
- To the well samples, 40 ng of saliva and 10 ng of BNP antibodies were added.

Results -

Patients with HF had greater salivary BNP levels than the control group, although the values were considerably higher in the admitted HF group.

Outcomes -

- Salivary BNP was found in both the control group and the HF patients.
- In symptomatic HF patients, salivary BNP levels were considerably higher. BNP levels decreased as symptoms improved.

- We were able to distinguish HF patients in the decompensated phase based on the level of BNP in their saliva, and lower levels of BNP were linked to improved symptoms and less congestion.
- Salivary alpha-amylase activity shows potential as a non-invasive indicator of adrenergic activity in HF, according to this study.

Conclusion -

These results show the role of salivary BNP in the diagnosis and follow-up of patients with heart failure. With proper experimentation and trials in the near future, it will be a gift to mankind.

5. Project Modules (Software)

We have trained an AI model for predicting silent heart attack. We have developed Website and android app for the same for making interaction with users simple

5.1 Building the AI model

Sensors are readily available in the market . Nowadays many sensors are integrated in our smartwatches as well. We have used this sensor and their data for training our AI model as well as for prediction of Heart Attack. We have used a sum total of 303 patient details to train our model.

Requirements

- Pandas
- Matploitlib
- NumPy
- Seaborn
- Heart Conditions
- Categorical Data
- Logistic Regression

Details taken to train AI

We have taken the following details:-

- Age of the patient
- Sex of the patient
- Resting blood pressure (in mm Hg)
- Cholesterol in mg/dl
- Fasting blood sugar
- Resting Electrocardiographic results
- Maximum heart rate achieved
- Previous peak
- Chest pain type

Preview of first few rows of data

	age	sex	cp	trtbps	chol	fbs	restecg	thalachh	exng	oldpeak	slp	caa	thall	output
0	63	1	3	145	233	1	0	150	0	2.3	0	0	1	1
1	37	1	2	130	250	0	1	187	0	3.5	0	0	2	1
2	41	0	1	130	204	0	0	172	0	1.4	2	0	2	1
3	56	1	1	120	236	0	1	178	0	0.8	2	0	2	1
4	57	0	0	120	354	0	1	163	1	0.6	2	0	2	1

Models we used to train with their accuracy

- Decision Tree accuracy - 78%(approx)
- Random Forest accuracy - 79%(approx)
- Gradient Boosting Classifiers accuracy - 86%(approx)
- Support Vector Machine accuracy - 87%(approx)
- Linear Regression accuracy - 90%(approx)

Code snippet

Importing packages

]:

```
import pandas as pd
import numpy as np
import matplotlib.pyplot as plt
import seaborn as sns

import warnings
warnings.filterwarnings("ignore")
```

Processing Data

```
# Scaling
from sklearn.preprocessing import RobustScaler

# Train Test Split
from sklearn.model_selection import train_test_split

# Models
import torch
import torch.nn as nn
from sklearn.svm import SVC
from sklearn.linear_model import LogisticRegression
from sklearn.ensemble import RandomForestClassifier
from sklearn.tree import DecisionTreeClassifier
from sklearn.ensemble import GradientBoostingClassifier

# Metrics
from sklearn.metrics import accuracy_score, classification_report, roc_curve

# Cross Validation
from sklearn.model_selection import cross_val_score
from sklearn.model_selection import GridSearchCV
```

Making feature model ready

```
# creating a copy of df
df1 = df

# define the columns to be encoded and scaled
cat_cols = ['sex','exng','caa','cp','fbs','restecg','slp','thall']
con_cols = ["age","trtbps","chol","thalachh","oldpeak"]

# encoding the categorical columns
df1 = pd.get_dummies(df1, columns = cat_cols, drop_first = True)

# defining the features and target
X = df1.drop(['output'],axis=1)
y = df1[['output']]

# instantiating the scaler
scaler = RobustScaler()

# scaling the continuous featuree
X[con_cols] = scaler.fit_transform(X[con_cols])
print("The first 5 rows of X are")
X.head()
```

Train and test split

```
X_train, X_test, y_train, y_test = train_test_split(X,y, test_size = 0.2, random_state = 42)
print("The shape of X_train is      ", X_train.shape)
print("The shape of X_test is       ",X_test.shape)
print("The shape of y_train is      ",y_train.shape)
print("The shape of y_test is       ",y_test.shape)
```

Modeling (Logistic Regression)

Prediction of 61 entries with an accuracy of 90.1639%

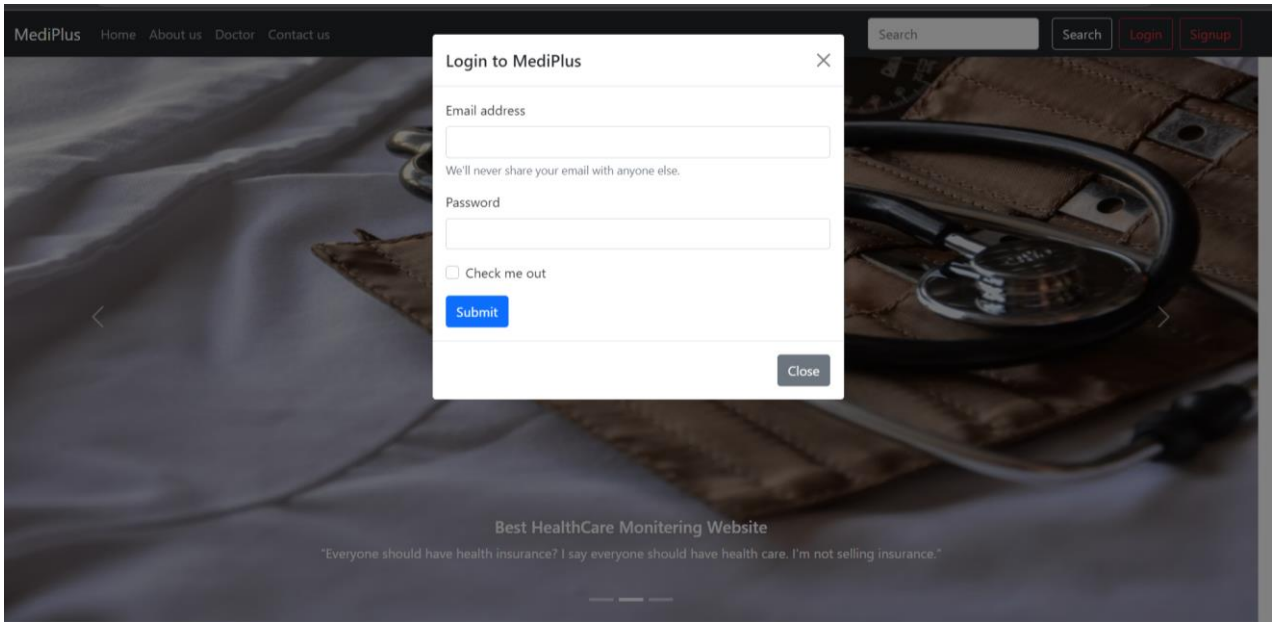
```
# instantiating the object
logreg = LogisticRegression()

# fitting the object
logreg.fit(X_train, y_train)

# calculating the probabilities
y_pred_proba = logreg.predict_proba(X_test)

# finding the predicted valued
y_pred = np.argmax(y_pred_proba,axis=1)
print(y_pred)
# printing the test accuracy
print("The test accuracy score of Logistic Regression is ", accuracy_score(y_test, y_pred))
```

```
[0 0 1 0 1 1 1 0 0 1 1 0 1 0 1 1 1 0 0 0 0 0 0 1 1 1 1 1 0 1 0 0 0 0 1 0 1
 1 1 1 1 1 1 1 1 0 0 1 0 0 0 0 1 1 0 0 0 1 0 0 0]
The test accuracy score of Logistic Regression is  0.9016393442622951
```

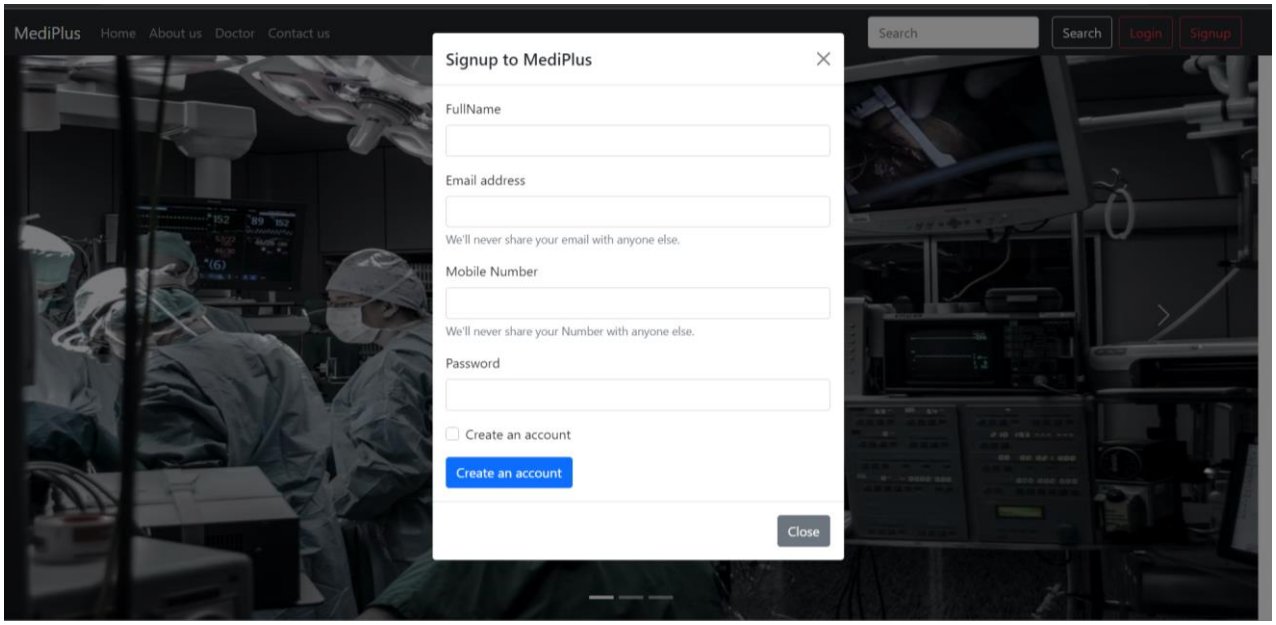
Conclusion

We have tested on numerous models but we found that Logistic Regression is the most accurate of all of them. We have managed to find only 303 patient details with 13 fields. We could build more accurate if the model is fetched with more data. Integration of the new upcoming sensors with AI which detects biomarkers noninvasively remains pending and will be integrated as soon as it launches in the market

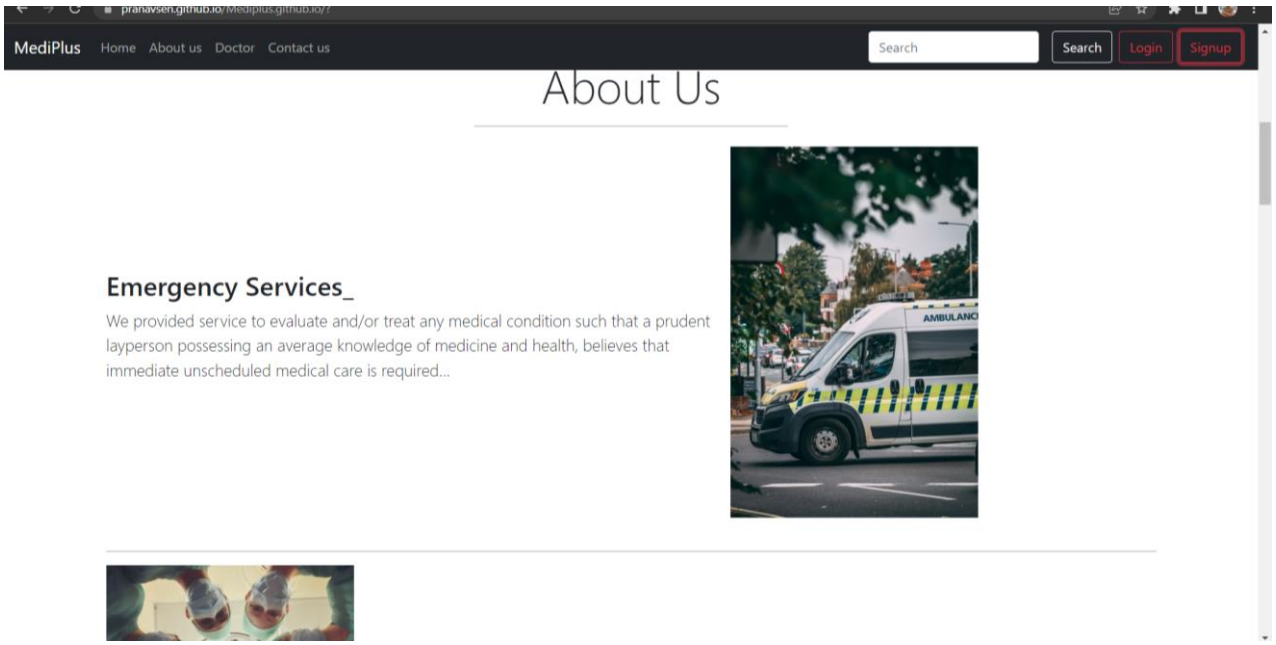
Website part:-



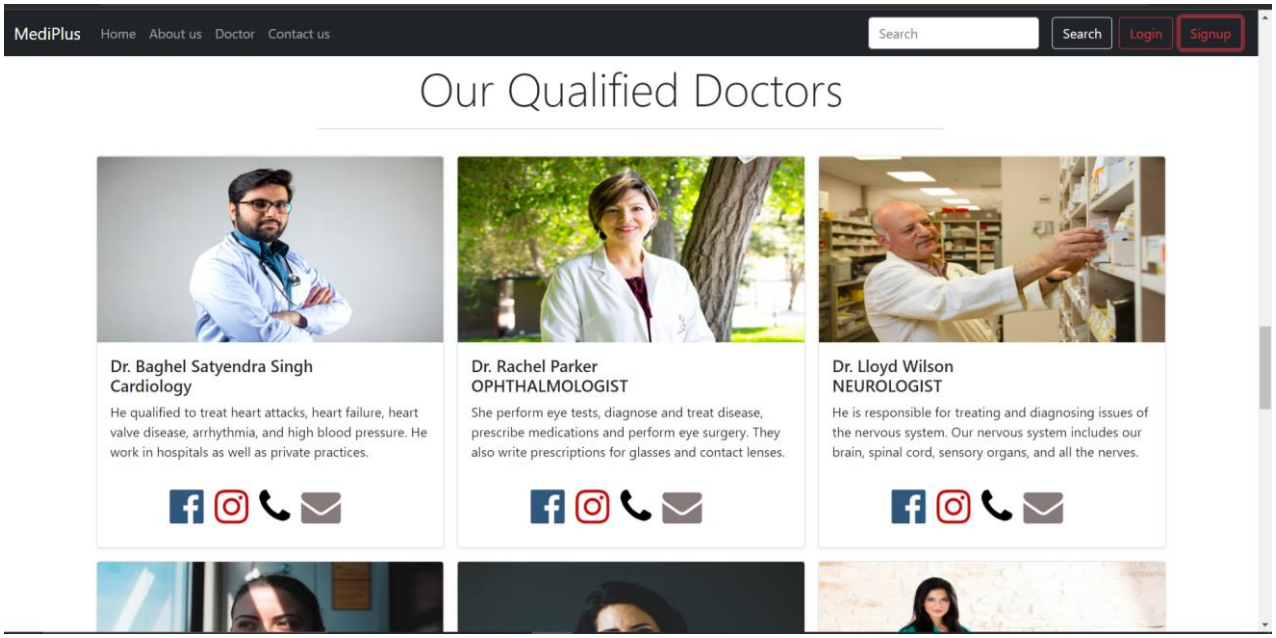
1)When client is as of now existing client of the site at that point they can straightforwardly login through their login qualifications or they can specifically login through their G-Mail ID by fair one click,but these login accreditations have to be be confirmed by our database (i.e. Firebase Database). After the full confirmation handle done by the database client can login into the site.



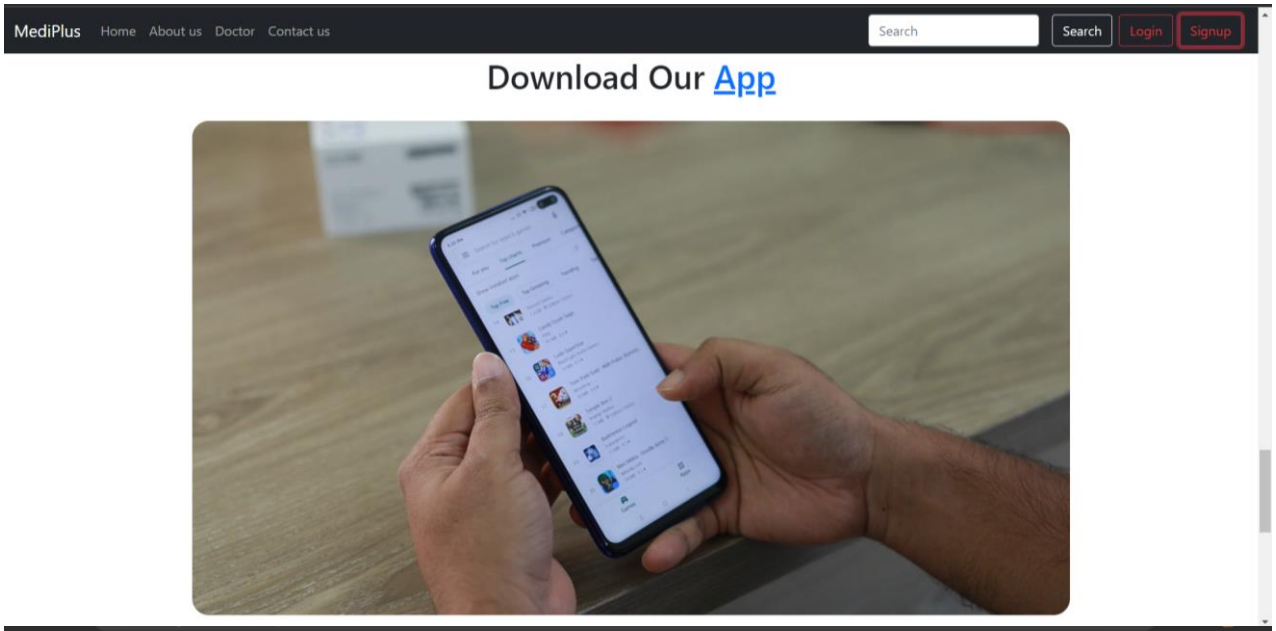
2) As a Modern Client They ought to Enlist their credentials first. This can be the shape where clients have to enter their title , E-mail (Confirmation takes put), password(Which must be of at least 8 letters), Phone no. So clients get Enlisted in Our database.

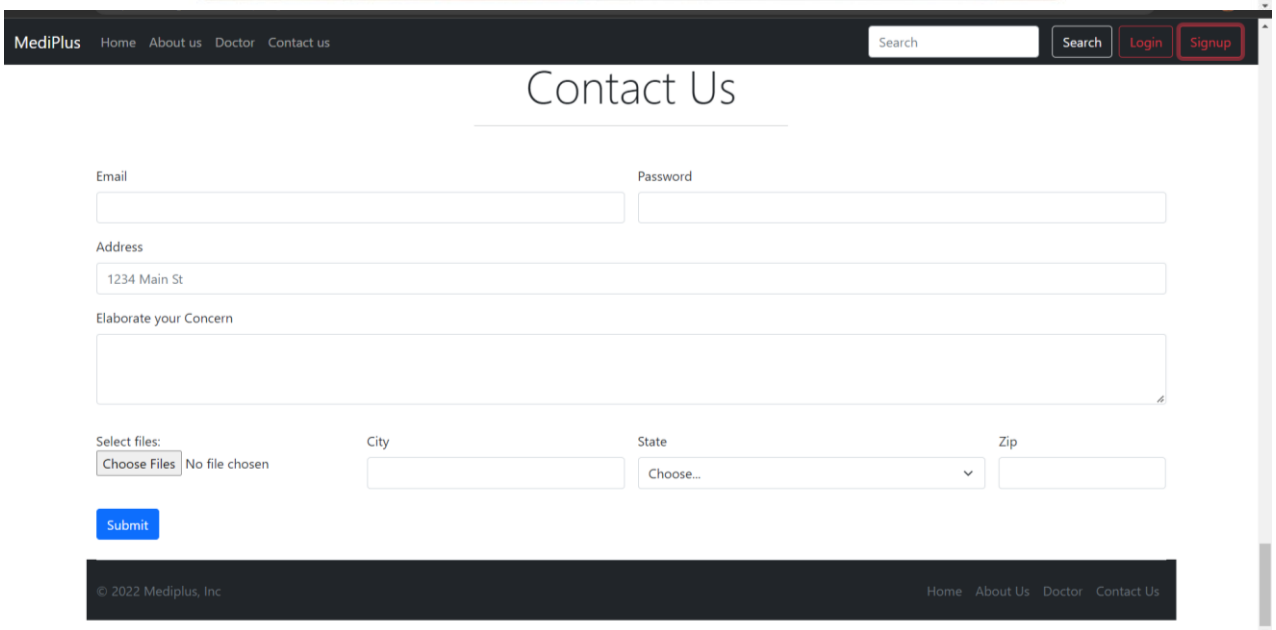


3) About us page where we describe what are the things we provide like- Ambulance for Emergency Time, Group of Doctors ,There is an outdoor treatment zone or section in our Hospital for regular health checkups of different diseases, Health at Homes offers you 24-hour health service. Any matters related to health and we are available for you.



4) You can directly contact our doctors through social media or you can call them directly.





5) If you have any Problem or if you want an appointment then fill this form (Email-id, password, Address,city name, zipCode, or any health related document) and submit it. So, we store your data in the database.

6. Android application

6.1 Introduction

The technology of cell era opens the home windows to the android app. The web sites are vanishing and the cell telephones are emerging. It`s the time to extrade from traditional web sites to apps, which has come to be the a part of our day by day routine. We are introducing, `GoFree.apk` the android software software program which could be Enabling rapid and faraway healthcare monitoring. Our software is thinking about the person as both a affected person or physician. challenge offers a complete approach to anybody primarily based totally at the input. It offers us extra consolation and a higher person interface. It acts as a top level view approximately the fitness & skilled doctors. It acts as a fitness assistant for anybody. Individual account may be created for patients. Patients can proportion the primary statistics approximately their fitness condition. Discuss with the physician suitable. The software gathers your statistics and byskip them to the AI Model and evaluate with the statistics then suggests the output to the person.

6.2 Software requirements specification

Purpose

The purpose of this document is to provide a detailed description of the Android application GoFree.apk. Describes the importance and characteristics of an application, the interface of the application, the tasks of the application, and the constraints that the application must work.

Product ViewPoint

The GoFree.apk app is a new online app based on Android. It is deployed with Android Studio.

Product Functions

The product should have an easy-to-use main menu from which the remaining features or functions can be accessed. The main features listed are: account registration, account login and project website.

Operating Environment

This application is only available on the Android operating system. This application can only be used on compatible Android devices. Users must use this application on Android OS 11.0 (R) (API 32) and later versions of Android OS.

Design and Implementation Constraints

Implementation language restrictions The programming language for the main application is Java. The programming language is SQL for cloud target databases.

Resource limits

The user's device requires a valid data plan or WiFi connection.

The user's device needs enough storage space to install the application.

The user's device must have sufficient battery life to run the application.

Assumptions and Dependencies

Dependencies The software will be used with the idea that the Android API and licensing settlement stays the same. Software Component

Dependencies The software will be used with the idea that the Android OS is 11.0(R) or Higher and The API Level is identical to 30 or Higher and the Screen Resolution is 1080 x 2280.

The software will be used with the idea that the device`s community interface card and motive force are working correctly.

6.3 External interface requirements

User Interfaces

The interface meets the following requirements to meet the needs of the user: It will be simple and easy to understand. The controls that allow the user to interact with the application are clear and represent functionality within the application. The interface contains user input.

Hardware Interfaces

This application is intended for stand-alone single-user systems. This application runs on an Android mobile device or Android emulator. Requires a hardware device (sensor and biomarker) or interface.

Software Interfaces

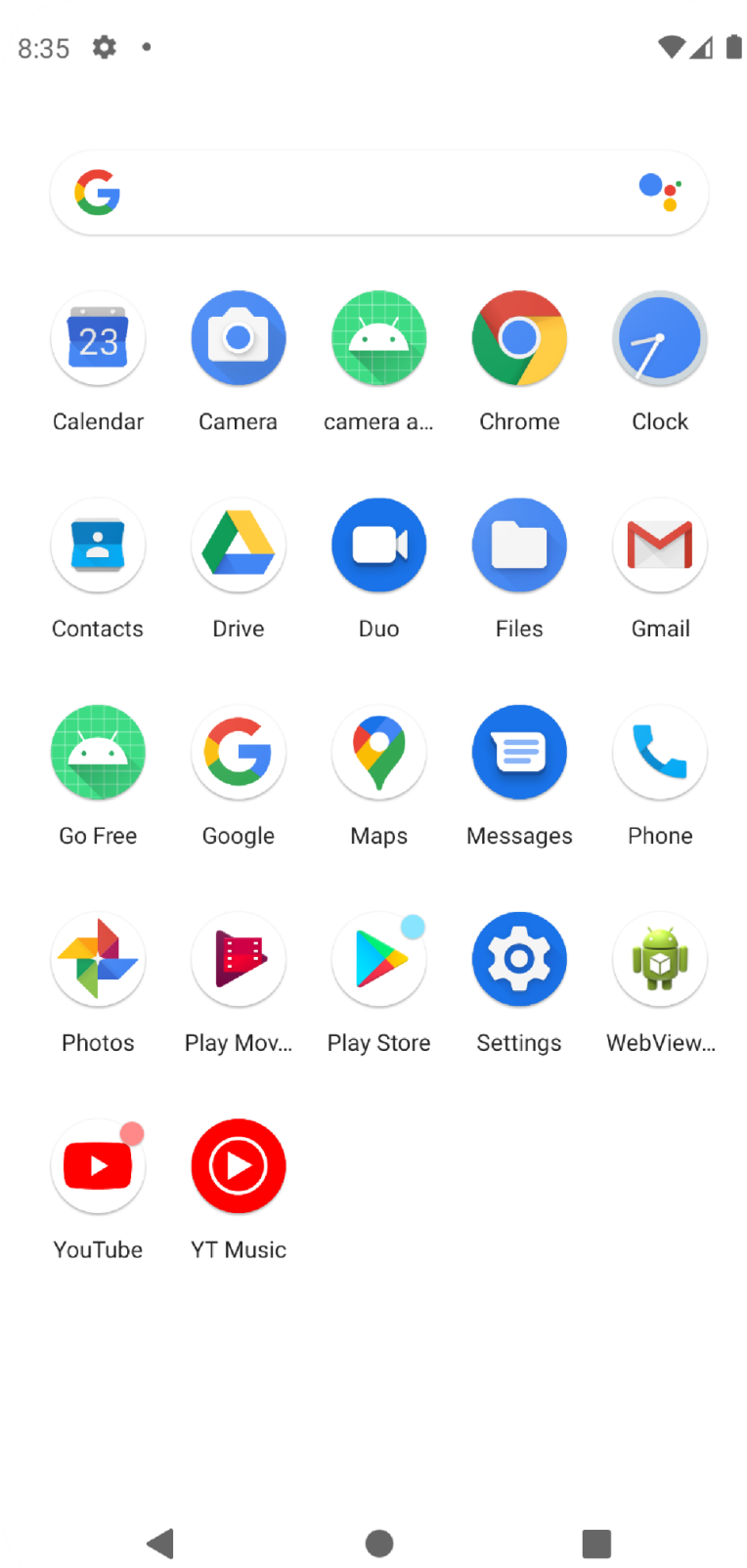
This software works on Android operating systems, especially version 11.0 (Red Velvet Cake) and above.

Communications Interfaces

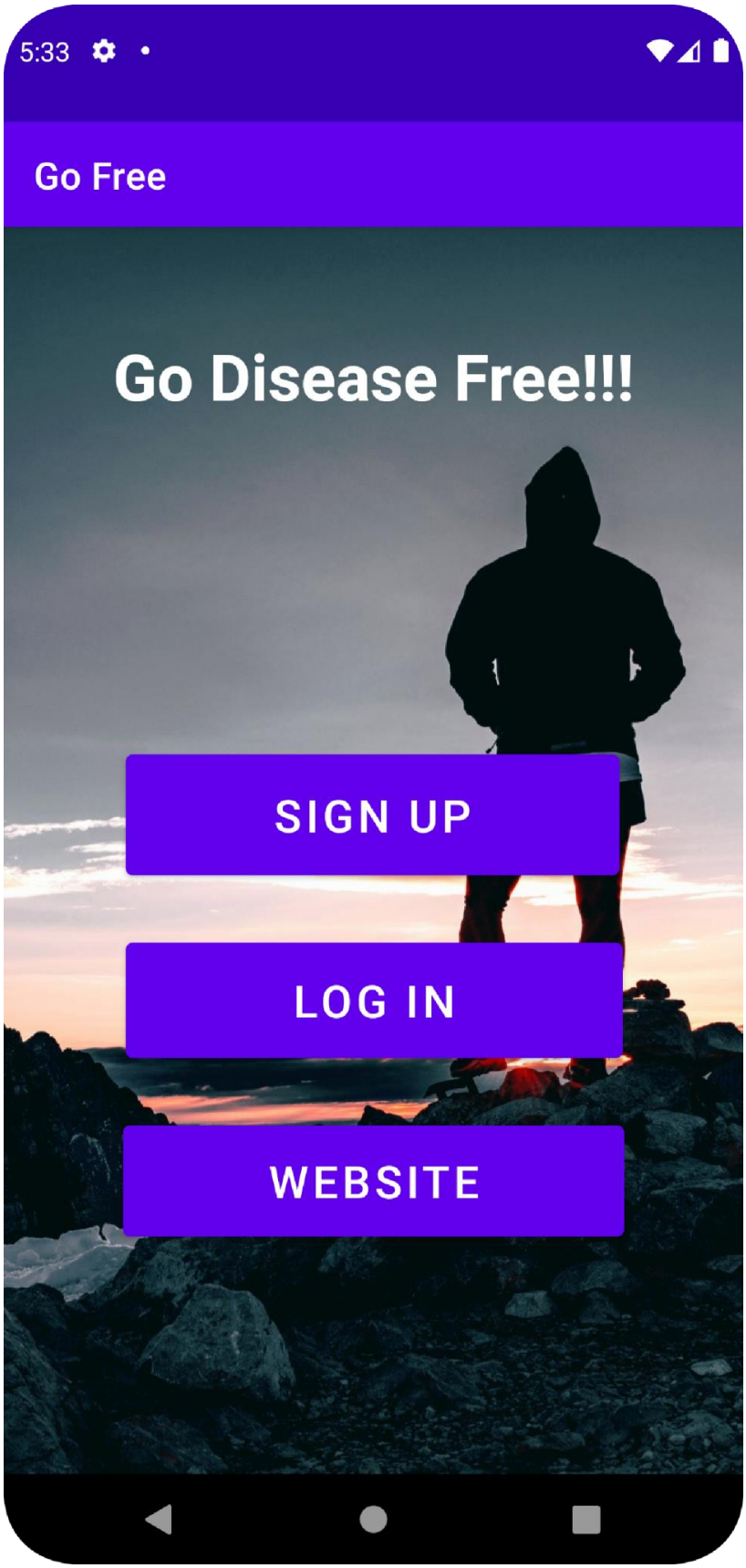
Applications need to communicate with various databases and software services via API function calls. Since the application is written in Java, Java functions make these calls to the API. The exact format and protocol of incoming and outgoing messages needs to be abstracted from the API.

6.4 SYSTEM FEATURES

1) After installing Apk on your Android device, it will appear in the All Apps section. Click the apk with the title "Go Free" to launch it.

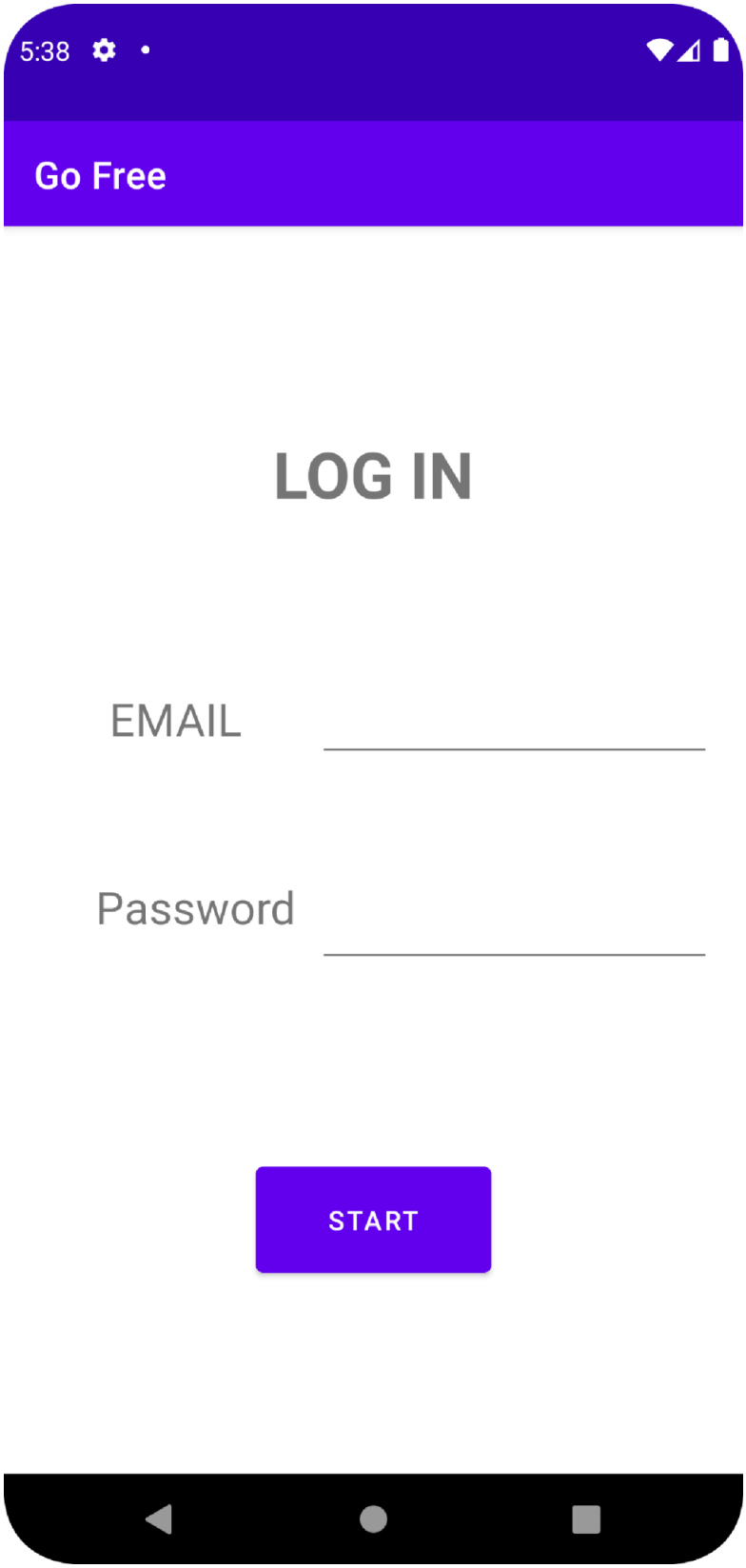


2) The apk will open and the main screen will be displayed with three options to choose from: Login, Sign Up and Web Page.

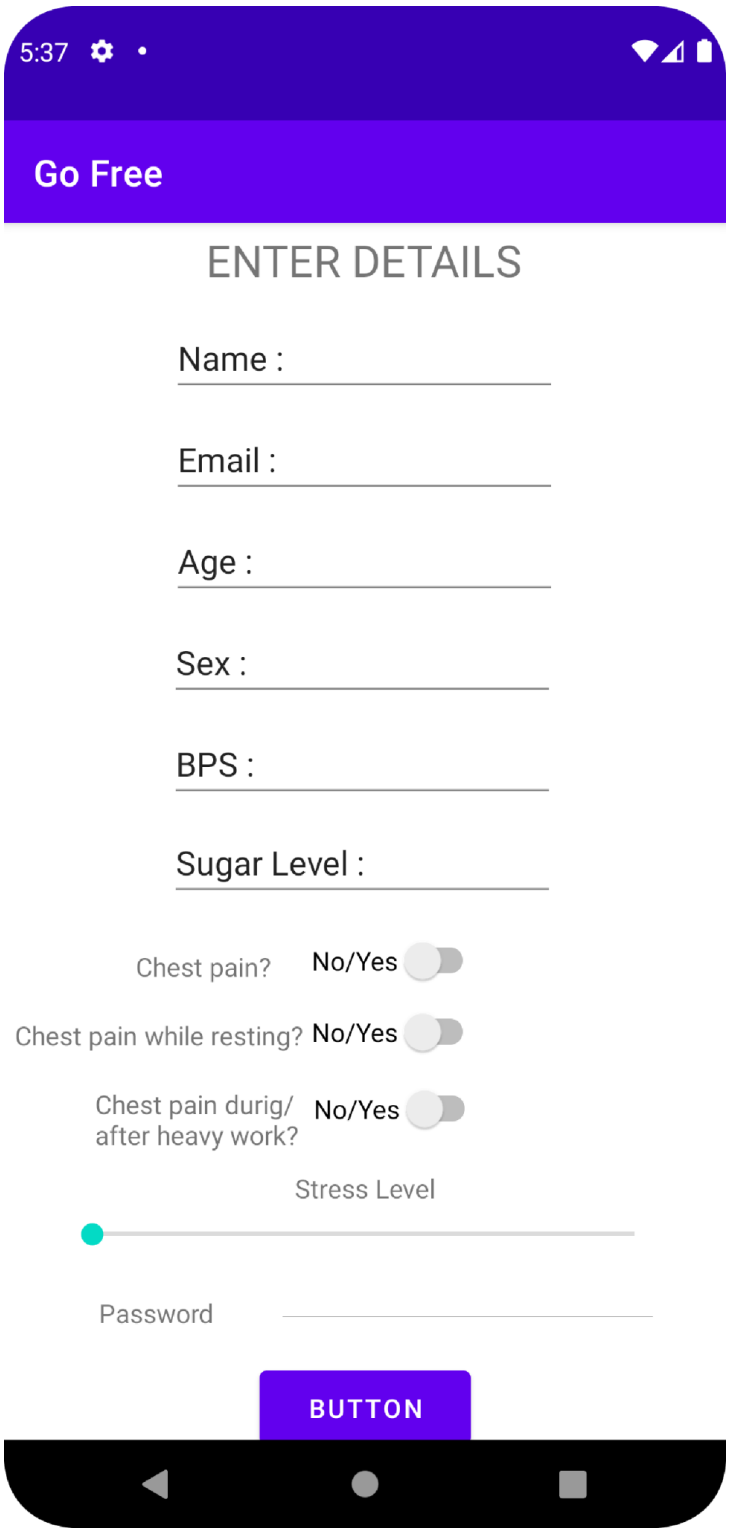


3) Fist we check the web-Page that is connected to our android page…by clicking on it you will be redirected to the website of our project ‘MediPlus’ on the google chrome.

4) LOGIN PAGE - When user is already existing user of the APK then they can directly login through their login credentials, but these login credentials have to be verified by our database (i.e. MySql Database). After the whole verification process done by the database user can login into the website.

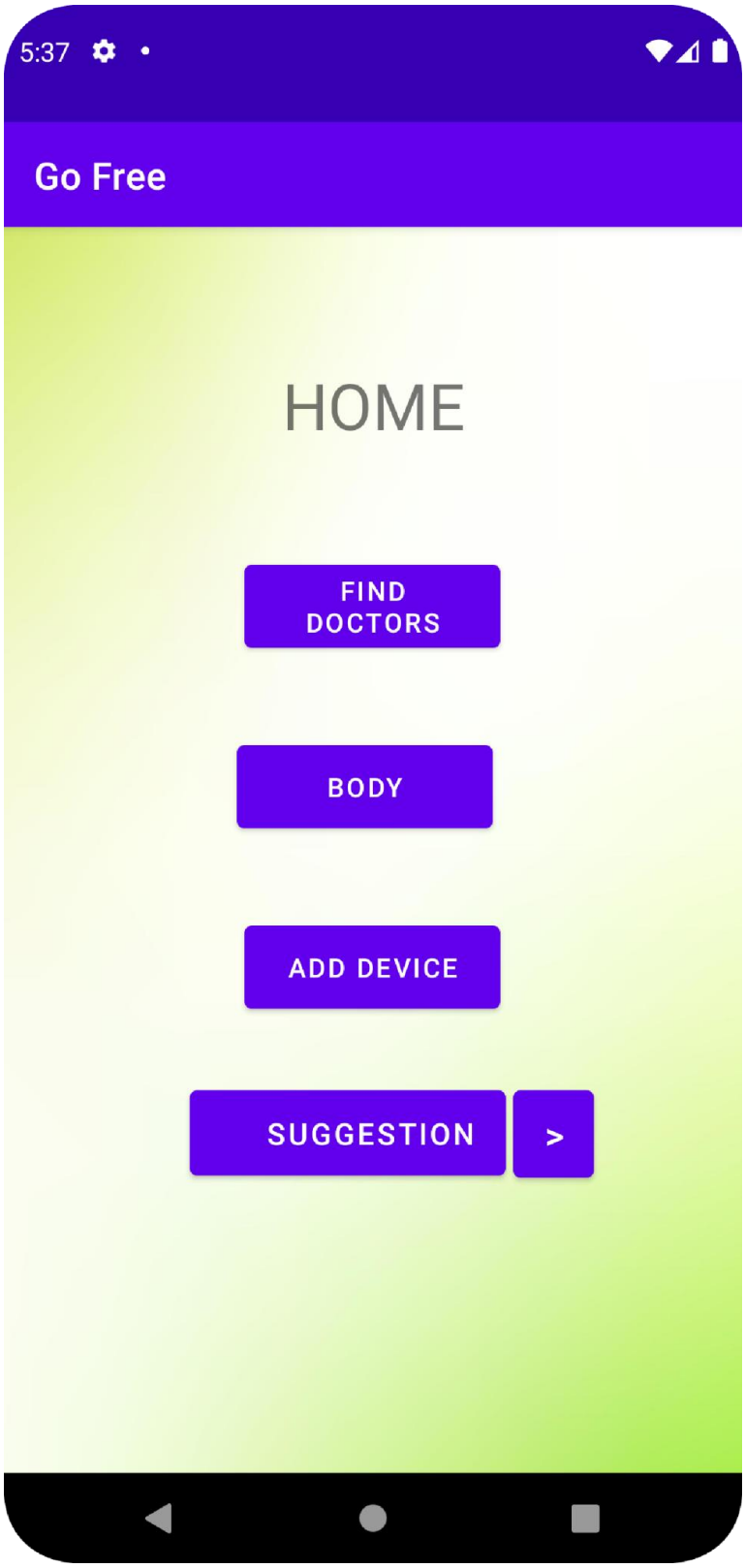


5) SIGNUP PAGE - As a New User They need to Register their credentials first. This is the page where users need to Fill their details like-NAME, EMAIL, AGE, SEX, BPS, SUGAR LEVEL, Output for CHEST PAIN, Output for CHEST PAIN WHILE RESTING, output for CHEST PAIN DURING/AFTER HEAVY WORK, Select the STRESS LEVEL and password(Which must be of at least 8 letters), then all these details get Registered in Our database.

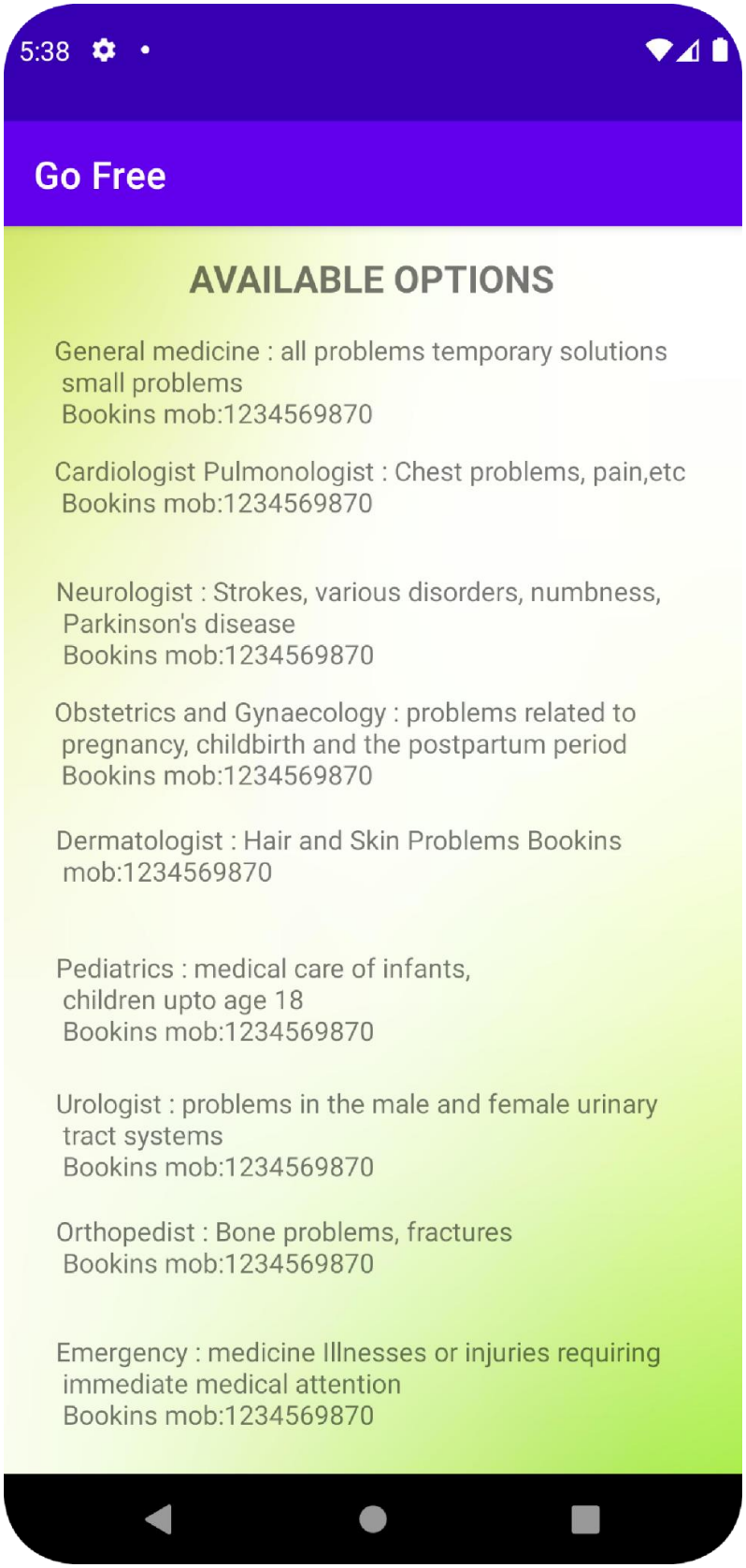


6) HOME PAGE – after submitting the all required details you will be sent to next activity page which is home page and you can reach home page via login activity page too after login in with the credentials you already have.

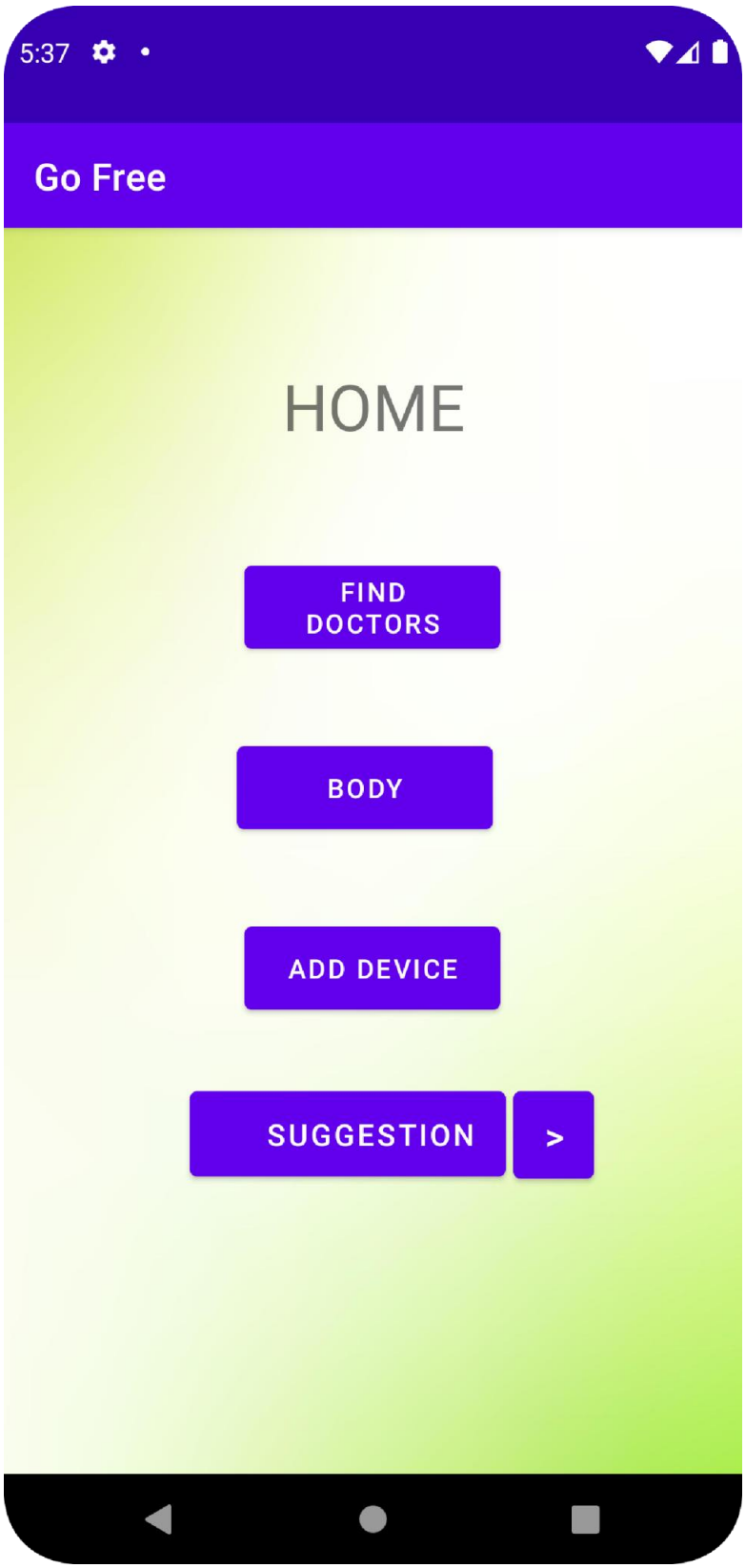
Home page consists of 4 buttons – ‘Find Doctors’, ’Body’, ’Add Device’ and ‘Suggestion’.



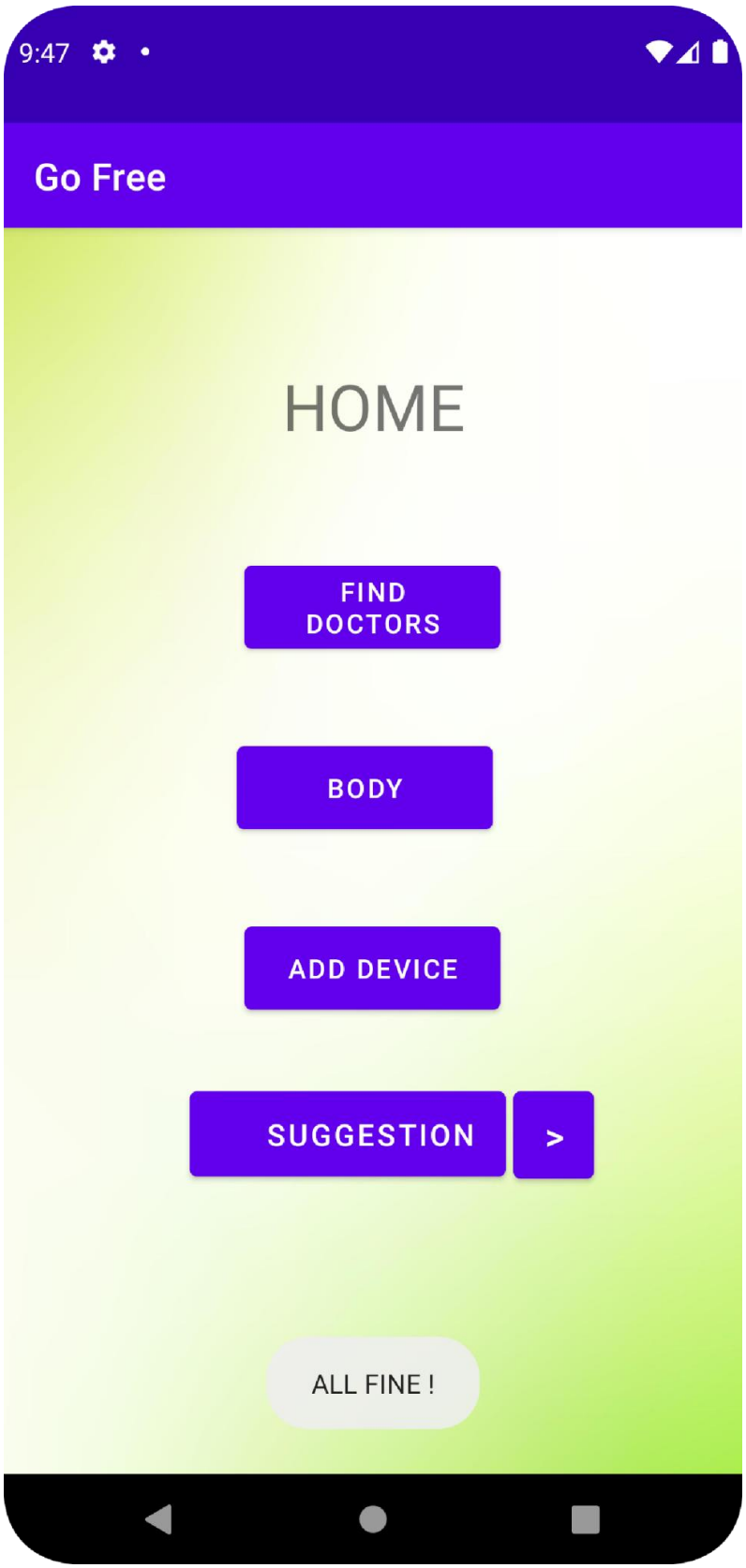
7) Find Doctors – by clicking on this you will be sent to the next activity page which consists of list of all doctors category wise with all the details of doctors and their contact information to get any consultation from them.



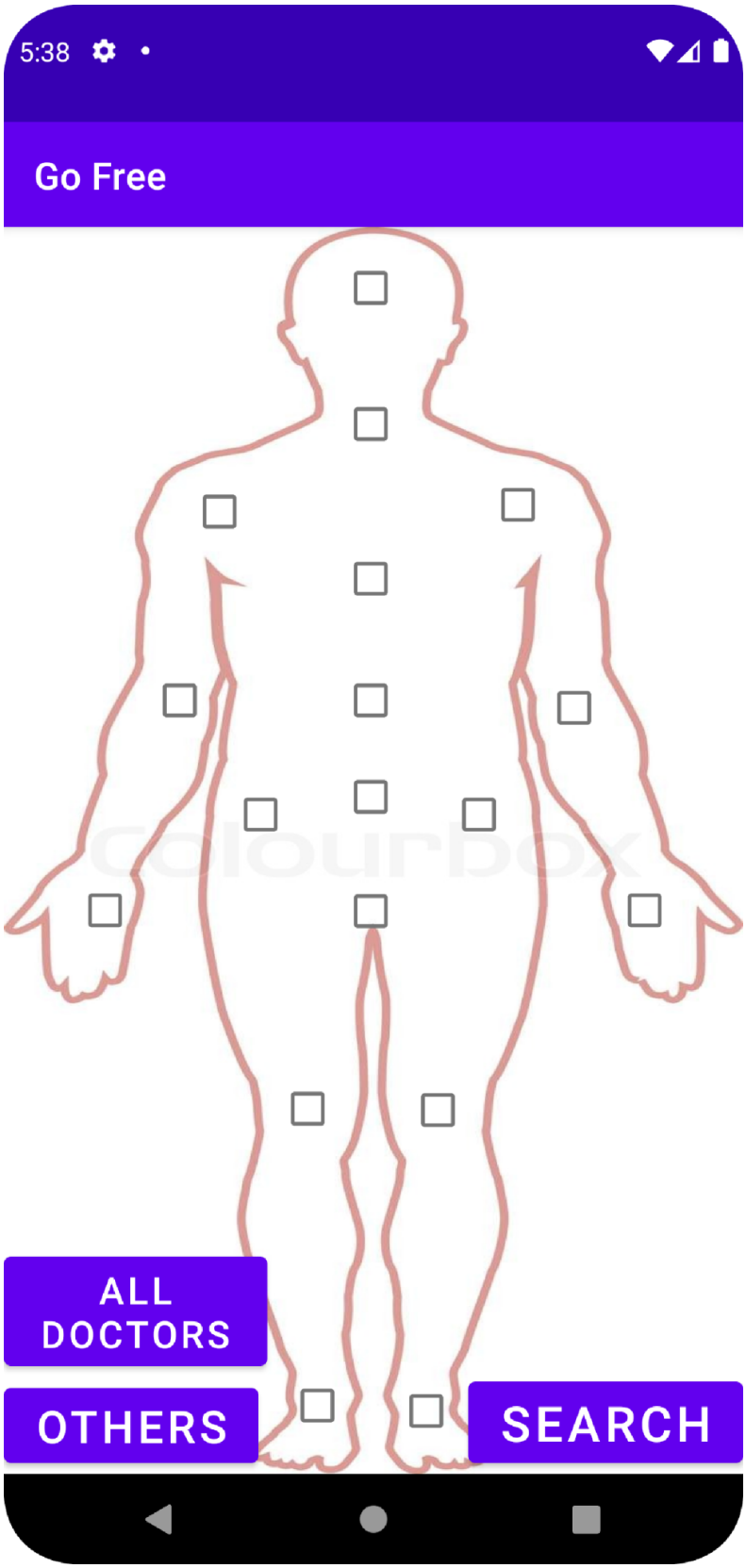
8) ADD DEVICE – This button is used to pair our android app to the smart watches and our built hardware(sensors and biomarkers) and to the AI model to fetch the data from the device and then show the result.



9) SUGGESTION – This button shows the response related to Health from the device connected. If everything is okay then on clicking this button you get a toast message saying "ALL FINE".



10) BODY – This button takes you to the next activity page where you can find a BODY GRAPH WITH SEVERAL checkbox on it and 3 buttons ‘all doctors’, ‘others’ and ‘search’.



11) when you don’t know about the categories of doctor and you have any health problem, this graph can help you to get a doctor related to your search option, simply you have to mark a body part that you are having problem with and click the search button so it will give you a list of doctors which are specialized for that problem.

All doctor button will send you to the all doctor list where you can find all types of doctors available.

Others button is required when your problem doesn’t match in the body graph.

6.5 OTHER NONFUNCTIONAL REQUIREMENTS

6.5.1 Performance Requirements

6.1.1.1 Real-time applications provide current information. You should always see the latest results and notify the user if you are late.

6.1.1.2 System resource consumption The resource consumption of this application must not reach the amount that renders the mobile device unusable. The application must be able to run in the background in case the user wants to use another application.

6.5.2 Safety Requirements

● User needs to sign in with their account to prove their identity before using.

● User shall not use our application while driving or biking.

6.5.3 Security Requirements

The security system has a login for all users to access all the features of the application. Credentials are also used in the system. Therefore, the chances of an application being compromised are very low.

1. Registration requirements.

2. Password requirements.

3. Inactivity timeout.

6.6 Software Quality Attributes

Reliability

The application meets all functional requirements without unexpected behavior. The output of the meter should not display erroneous or outdated information without alerting the user to possible errors.

Availability

The application will always be available on the user's Android device as long as the device is working properly. The functionality of the application depends on all required external services such as internet access. Users should be notified when these services are unavailable.

Maintainability

This application is very easy to maintain.

Portability

This software is designed to work with Android OS version 11.0 and above.

7. My SQL DATABASE

USERS DATABASE

All the data we gave in signup page is stored in MySQL data base table ‘LOGIN’. This data is used to match the credentials of the users they pass at the time of login. And also this data is used to do certain calculations to find the outcome of our model.

TABLE LOGIN

```
mysql> desc login;
+-------------------------------------+-------------+------+-----+---------+-------+
| Field                               | Type        | Null | Key | Default | Extra |
+-------------------------------------+-------------+------+-----+---------+-------+
| name                                | varchar(45) | YES  |     | NULL    |       |
| email                               | varchar(45) | YES  |     | NULL    |       |
| age                                 | int         | YES  |     | NULL    |       |
| sex                                 | char(1)     | YES  |     | NULL    |       |
| bps                                 | int         | YES  |     | NULL    |       |
| sugar_level                         | int         | YES  |     | NULL    |       |
| chest_pain                          | tinyint(1)  | YES  |     | NULL    |       |
| chest_pain_while_resting            | tinyint(1)  | YES  |     | NULL    |       |
| chest_pain_during_after_heavy_work  | tinyint(1)  | YES  |     | NULL    |       |
| password                            | varchar(45) | YES  |     | NULL    |       |
+-------------------------------------+-------------+------+-----+---------+-------+
10 rows in set (0.04 sec)
```

```
mysql> select * from login;
+-------+----------------------+------+------+------+------------+-----------+-----------------------+-----------------------------------+----------+
| name  | email                | age  | sex  | bps  | sugar_level | chest_pain | chest_pain_while_resting | chest_pain_during_after_heavy_work | password |
+-------+----------------------+------+------+------+------------+-----------+-----------------------+-----------------------------------+----------+
| ARYAN | aryanjain722@gmail.com |   21 | M    |   80 |         99 |         0 |                     0 |                                 0 | 123456789 |
+-------+----------------------+------+------+------+------------+-----------+-----------------------+-----------------------------------+----------+
1 row in set (0.00 sec)

mysql>
```

PATIENT DATABASE

303 patient details with 13 fields. Data to be used with AI model for its calculations.

TABLE PATIENT_DATA

```
mysql> desc patient_data
    -> ;
+----------+------+------+-----+---------+-------+
| Field    | Type | Null | Key | Default | Extra |
+----------+------+------+-----+---------+-------+
| age      | int  | YES  |     | NULL    |       |
| sex      | int  | YES  |     | NULL    |       |
| cp       | int  | YES  |     | NULL    |       |
| trtbps   | int  | YES  |     | NULL    |       |
| chol     | int  | YES  |     | NULL    |       |
| fbs      | int  | YES  |     | NULL    |       |
| restecg  | int  | YES  |     | NULL    |       |
| thalachh | int  | YES  |     | NULL    |       |
| exng     | int  | YES  |     | NULL    |       |
| oldpeak  | int  | YES  |     | NULL    |       |
| slp      | int  | YES  |     | NULL    |       |
| caa      | int  | YES  |     | NULL    |       |
| thall    | int  | YES  |     | NULL    |       |
| output   | int  | YES  |     | NULL    |       |
+----------+------+------+-----+---------+-------+
14 rows in set (0.01 sec)
```

Data starting with row 1 →

```
mysql> select * from patient_data;
+------+------+------+--------+------+------+---------+----------+------+---------+------+------+-------+--------+
| age  | sex  | cp   | trtbps | chol | fbs  | restecg | thalachh | exng | oldpeak | slp  | caa  | thall | output |
+------+------+------+--------+------+------+---------+----------+------+---------+------+------+-------+--------+
|   63 |    1 |    3 |    145 |  233 |    1 |       0 |      150 |    0 |       2 |    0 |    0 |     1 |      1 |
|   37 |    1 |    2 |    130 |  250 |    0 |       1 |      187 |    0 |       4 |    0 |    0 |     2 |      1 |
|   41 |    0 |    1 |    130 |  204 |    0 |       0 |      172 |    0 |       1 |    2 |    0 |     2 |      1 |
|   56 |    1 |    1 |    120 |  236 |    0 |       1 |      178 |    0 |       1 |    2 |    0 |     2 |      1 |
|   57 |    0 |    0 |    120 |  354 |    0 |       1 |      163 |    1 |       1 |    2 |    0 |     2 |      1 |
|   57 |    1 |    0 |    140 |  192 |    0 |       1 |      148 |    0 |       0 |    1 |    0 |     1 |      1 |
|   56 |    0 |    1 |    140 |  294 |    0 |       0 |      153 |    0 |       1 |    1 |    0 |     2 |      1 |
|   44 |    1 |    1 |    120 |  263 |    0 |       1 |      173 |    0 |       0 |    2 |    0 |     3 |      1 |
|   52 |    1 |    2 |    172 |  199 |    1 |       1 |      162 |    0 |       1 |    2 |    0 |     3 |      1 |
|   57 |    1 |    2 |    150 |  168 |    0 |       1 |      174 |    0 |       2 |    2 |    0 |     2 |      1 |
|   54 |    1 |    0 |    140 |  239 |    0 |       1 |      160 |    0 |       1 |    2 |    0 |     2 |      1 |
|   48 |    0 |    2 |    130 |  275 |    0 |       1 |      139 |    0 |       0 |    2 |    0 |     2 |      1 |
|   49 |    1 |    1 |    130 |  266 |    0 |       1 |      171 |    0 |       1 |    2 |    0 |     2 |      1 |
|   64 |    1 |    3 |    110 |  211 |    0 |       0 |      144 |    1 |       2 |    1 |    0 |     2 |      1 |
|   58 |    0 |    3 |    150 |  283 |    1 |       0 |      162 |    0 |       1 |    2 |    0 |     2 |      1 |
|   50 |    0 |    2 |    120 |  219 |    0 |       1 |      158 |    0 |       2 |    1 |    0 |     2 |      1 |
|   58 |    0 |    2 |    120 |  340 |    0 |       1 |      172 |    0 |       0 |    2 |    0 |     2 |      1 |
|   66 |    0 |    3 |    150 |  226 |    0 |       1 |      114 |    0 |       3 |    0 |    0 |     2 |      1 |
|   43 |    1 |    0 |    150 |  247 |    0 |       1 |      171 |    0 |       2 |    2 |    0 |     2 |      1 |
|   69 |    0 |    3 |    140 |  239 |    0 |       1 |      151 |    0 |       2 |    2 |    2 |     2 |      1 |
|   59 |    1 |    0 |    135 |  234 |    0 |       1 |      161 |    0 |       1 |    1 |    0 |     3 |      1 |
|   44 |    1 |    2 |    130 |  233 |    0 |       1 |      179 |    1 |       0 |    2 |    0 |     2 |      1 |
|   42 |    1 |    0 |    140 |  226 |    0 |       1 |      178 |    0 |       0 |    2 |    0 |     2 |      1 |
|   61 |    1 |    2 |    150 |  243 |    1 |       1 |      137 |    1 |       1 |    1 |    0 |     2 |      1 |
|   40 |    1 |    3 |    140 |  199 |    0 |       1 |      178 |    1 |       1 |    2 |    0 |     3 |      1 |
|   71 |    0 |    1 |    160 |  302 |    0 |       1 |      162 |    0 |       0 |    2 |    2 |     2 |      1 |
|   59 |    1 |    2 |    150 |  212 |    1 |       1 |      157 |    0 |       2 |    2 |    0 |     2 |      1 |
|   51 |    1 |    2 |    110 |  175 |    0 |       1 |      123 |    0 |       1 |    2 |    0 |     2 |      1 |
|   65 |    0 |    2 |    140 |  417 |    1 |       0 |      157 |    0 |       1 |    2 |    1 |     2 |      1 |
|   53 |    1 |    2 |    130 |  197 |    1 |       0 |      152 |    0 |       1 |    0 |    0 |     2 |      1 |
|   41 |    0 |    1 |    105 |  198 |    0 |       1 |      168 |    0 |       0 |    2 |    1 |     2 |      1 |
|   65 |    1 |    0 |    120 |  177 |    0 |       1 |      140 |    0 |       0 |    2 |    0 |     3 |      1 |
|   44 |    1 |    1 |    130 |  219 |    0 |       0 |      188 |    0 |       0 |    2 |    0 |     2 |      1 |
|   54 |    1 |    2 |    125 |  273 |    0 |       0 |      152 |    0 |       1 |    0 |    1 |     2 |      1 |
|   51 |    1 |    3 |    125 |  213 |    0 |       0 |      125 |    1 |       1 |    2 |    1 |     2 |      1 |
|   46 |    0 |    2 |    142 |  177 |    0 |       0 |      160 |    1 |       1 |    0 |    0 |     2 |      1 |
|   54 |    0 |    2 |    135 |  304 |    1 |       1 |      170 |    0 |       0 |    2 |    0 |     2 |      1 |
|   54 |    1 |    2 |    150 |  232 |    0 |       0 |      165 |    0 |       2 |    2 |    0 |     3 |      1 |
|   65 |    0 |    2 |    155 |  269 |    0 |       1 |      148 |    0 |       1 |    2 |    0 |     2 |      1 |
|   65 |    0 |    2 |    160 |  360 |    0 |       0 |      151 |    0 |       1 |    2 |    0 |     2 |      1 |
|   51 |    0 |    2 |    140 |  308 |    0 |       0 |      142 |    0 |       2 |    2 |    1 |     2 |      1 |
|   48 |    1 |    1 |    130 |  245 |    0 |       0 |      180 |    0 |       0 |    1 |    0 |     2 |      1 |
|   45 |    1 |    0 |    104 |  208 |    0 |       0 |      148 |    1 |       3 |    1 |    0 |     2 |      1 |
|   53 |    0 |    0 |    130 |  264 |    0 |       0 |      143 |    0 |       0 |    1 |    0 |     2 |      1 |
|   39 |    1 |    2 |    140 |  321 |    0 |       0 |      182 |    0 |       0 |    2 |    0 |     2 |      1 |
|   52 |    1 |    1 |    120 |  325 |    0 |       1 |      172 |    0 |       0 |    2 |    0 |     2 |      1 |
|   44 |    1 |    2 |    140 |  235 |    0 |       0 |      180 |    0 |       0 |    2 |    0 |     2 |      1 |
|   47 |    1 |    2 |    138 |  257 |    0 |       0 |      156 |    0 |       0 |    2 |    0 |     2 |      1 |
|   53 |    0 |    2 |    128 |  216 |    0 |       0 |      115 |    0 |       0 |    2 |    0 |     0 |      1 |
|   53 |    0 |    0 |    138 |  234 |    0 |       0 |      160 |    0 |       0 |    2 |    0 |     2 |      1 |
```

DATA ending with 303 rows →

51	1	0	140	298	0	1	122	1	4	1	3	3	0
43	1	0	132	247	1	0	143	1	0	1	4	3	0
62	0	0	138	294	1	1	106	0	2	1	3	2	0
67	1	0	100	299	0	0	125	1	1	1	2	2	0
59	1	3	160	273	0	0	125	0	0	2	0	2	0
45	1	0	142	309	0	0	147	1	0	1	3	3	0
58	1	0	128	259	0	0	130	1	3	1	2	3	0
50	1	0	144	200	0	0	126	1	1	1	0	3	0
62	0	0	150	244	0	1	154	1	1	1	0	2	0
38	1	3	120	231	0	1	182	1	4	1	0	3	0
66	0	0	178	228	1	1	165	1	1	1	2	3	0
52	1	0	112	230	0	1	160	0	0	2	1	2	0
53	1	0	123	282	0	1	95	1	2	1	2	3	0
63	0	0	108	269	0	1	169	1	2	1	2	2	0
54	1	0	110	206	0	0	108	1	0	1	1	2	0
66	1	0	112	212	0	0	132	1	0	2	1	2	0
55	0	0	180	327	0	2	117	1	3	1	0	2	0
49	1	2	118	149	0	0	126	0	1	2	3	2	0
54	1	0	122	286	0	0	116	1	3	1	2	2	0
56	1	0	130	283	1	0	103	1	2	0	0	3	0
46	1	0	120	249	0	0	144	0	1	2	0	3	0
61	1	3	134	234	0	1	145	0	3	1	2	2	0
67	1	0	120	237	0	1	71	0	1	1	0	2	0
58	1	0	100	234	0	1	156	0	0	2	1	3	0
47	1	0	110	275	0	0	118	1	1	1	1	2	0
52	1	0	125	212	0	1	168	0	1	2	2	3	0
58	1	0	146	218	0	1	105	0	2	1	1	3	0
57	1	1	124	261	0	1	141	0	0	2	0	3	0
58	0	1	136	319	1	0	152	0	0	2	2	2	0
61	1	0	138	166	0	0	125	1	4	1	1	2	0
42	1	0	136	315	0	1	125	1	2	1	0	1	0
52	1	0	128	204	1	1	156	1	1	1	0	0	0
59	1	2	126	218	1	1	134	0	2	1	1	1	0
40	1	0	152	223	0	1	181	0	0	2	0	3	0
61	1	0	140	207	0	0	138	1	2	2	1	3	0
46	1	0	140	311	0	1	120	1	2	1	2	3	0
59	1	3	134	204	0	1	162	0	1	2	2	2	0
57	1	1	154	232	0	0	164	0	0	2	1	2	0
57	1	0	110	335	0	1	143	1	3	1	1	3	0
55	0	0	128	205	0	2	130	1	2	1	1	3	0
61	1	0	148	203	0	1	161	0	0	2	1	3	0
58	1	0	114	318	0	2	140	0	4	0	3	1	0
58	0	0	170	225	1	0	146	1	3	1	2	1	0
67	1	2	152	212	0	0	150	0	1	1	0	3	0
44	1	0	120	169	0	1	144	1	3	0	0	1	0
63	1	0	140	187	0	0	144	1	4	2	2	3	0
63	0	0	124	197	0	1	136	1	0	1	0	2	0
59	1	0	164	176	1	0	90	0	1	1	2	1	0
57	0	0	140	241	0	1	123	1	0	1	0	3	0
45	1	3	110	264	0	1	132	0	1	1	0	3	0
68	1	0	144	193	1	1	141	0	3	1	2	3	0
57	1	0	130	131	0	1	115	1	1	1	1	3	0
57	0	1	130	236	0	0	174	0	0	1	1	2	0

303 rows in set (0.01 sec)

mysql>

CONCLUSION

The idea for the Human Healthcare Monitoring System project is in our minds as it is essential to achieve the goal of "developing a project that helps to effectively serve the communities around us." It came to me. So we thought our idea shouldn't be

Usefulness is limited to residents of a particular category

As a community, our main goal was to develop ideas that would be useful to all types of people living around us, whether in rural or urban areas.

This project (final development product) uses software and hardware as a whole (integrated with each other) to achieve the desired goals. The main functions are the "volunteer function" (performed by the software application independently) and the "monitoring function" (performed by the software application making a very important contribution).

CONTRIBUTIONS

Software	• Pushpal Bandhopadhyay • Aryan Jain • Pranav Sen • Aman Kaushik
Hardware	• Sreyashi Das • Suvarna Sarkar • Shubhangi Tiwari
Hardware Coding	• Shikha Saraswat • Pushpal Bandopadhyay
DATABASE	• Aryan Jain

INDIVIDUAL CONTRIBUTION

CONTRIBUTION MADE BY **ARYAN JAIN (19BCE10152)**

- Helped with the research part, project and functional Ideas.
  Read many of the research papers for the biomarker and the sensors for the functionality.
- Created the database
  To store the data of the patients that is required by the AI model to find the accurate results.
  Store the data of the user of the Android application, their all details and their input for the AI model to fetch the result on the android apk.
  Store the login credentials of the user of android application.
  Android app Connectivity to the Database.
- Manage database connections.
  All encryption (query) for MySQL database.
- Build a "GOFREE" Android App with all the features described above.
  Android app works with user feedback and stores database.
  All coding for Android apps.
- Provide Presentation and Editing of Reports.

REFERENCES

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- http://www.jcreview.com/fulltext/197-1585663661.pdf
- :https://core.ac.uk/download/pdf/132492107.pdf
- https://bit.ly/3vDVtIw

PLAGIARISM CHECK REPORT

Sentence

Introduction The technology of cell era opens the home windows to the android app. The web sites are vanishing and the cell telephones are emerging. It`s the time to extrade from traditional web sites to apps, which has come to be the a part of our day by day routine. We are introducing, `GoFree.apk` the android software software program which could be Enabling rapid and faraway healthcare monitoring. Our software is thinking about the person as both a affected person or physician. challenge offers a complete approach to anybody primarily based totally at the input. It offers us extra consolation and a higher person interface. It acts as a top level view approximately the fitness & skilled doctors. It acts as a fitness assistant for anybody. Individual account may be created for patients. Patients can proportion the primary statistics approximately their fitness condition. Discuss with the physician suitable. The software gathers your statistics and byskip them to the AI Model and evaluate with the statistics then suggests the output to the person. 6.2 Software requirements specification Purpose The purpose of this document is to provide a detailed description of the Android application GoFree.apk. Describes the importance and characteristics of an application, the interface of the application, the tasks of the application, and the constraints that the application must function. Product Perspective The GoFree.apk app is a new online app based on Android. It is deployed with Android Studio. Product Functions The product should have an easy-to-use main menu from which the remaining features or functions can be accessed. The main features listed are: account registration, account login and project website. Operating Environment This application is only available on the Android operating system. This application can only be used on compatible Android devices. Users must use this application on Android OS 11.0 (R) (API 32) and later versions of Android OS. Design and Implementation Constraints Implementation language restrictions The programming language for the main application is Java. The programming language is SQL for cloud target databases. Resource limits The user's device requires a valid data plan or WiFi connection. The user's device needs enough storage space to install&runn the apk. The user's device must have sufficient battery life to run the application. Assumptions and Dependencies Dependencies The software will be used with the idea that the Android API and licensing settlement stays the same. Software Component Dependencies The software will be used with the idea that the Android OS is 11.0(R) or Higher and The API Level is identical to 30 or Higher and the Screen Resolution is 1080 x 2280. The software will be used with the idea that the device`s community interface card and motive force are working correctly. 6.3 External interface requirements User Interfaces The interface meets the following requirements to meet the needs of the user: It will be simple and easy to understand. The controls that allow the user to interact with the application are clear and represent functionality within the application. The interface contains user input. Hardware Interfaces This application is intended for stand-alone single-user systems. This application runs on an Android mobile device or Android emulator. Requires a hardware device (sensor and biomarker) or interface. Software Interfaces This software works on Android operating systems, especially version 11.0 (Red Velvet Cake) and above. Communications Interfaces Applications need to communicate with various databases and software services via API function calls. Since the application is written in Java, Java functions make these calls to the API. The exact format and protocol of incoming and outgoing messages needs to be abstracted from the API. 6.4 SYSTEM FEATURES After installing Apk on your Android device, it will appear in the All Apps section. Click the apk with the title "Go Free" to launch it. The apk will open and the main screen will be displayed with three options to choose from: Login, Sign Up and Web Page. Fist we check the web-Page that is connected to our android page…by clicking on it you will be redirected to the website of our project 'MediPlus' on the google chrome. LOGIN PAGE - When user is already existing user of the APK then they can directly login through their login credentials, but these login credentials have to be verified by our database (i.e. MySql database). After the whole verification process done by the database user can login into the website. SIGNUP PAGE - As a New User They need to Register their credentials first. This is the page where users need to Fill their details like-NAME, EMAIL, AGE, SEX, BPS, SUGAR LEVEL, Output for CHEST PAIN, Output for CHEST PAIN WHILE RESTING, output for CHEST PAIN DURING/AFTER HEAVY WORK, Select the STRESS LEVEL and password(Which must be of at least 8 letters), then all these details get Registered in Our data . HOME PAGE – after submitting the all required details you will be sent to next activity page which is home page and you can reach home page via login activity page too after login in with the credentials you already have. Home page consists of 4 buttons – 'Find Doctors', 'Body', 'Add Device' and 'Suggestion'. Find Doctors – by clicking on this you will be sent to the next activity page which consists of list of all doctors category wise with all the details of doctors and their contact information to get any consultation from them. ADD DEVICE – This button is used to pair our android app to the smart watches and our built hardware(sensors and biomarkers) and to the AI model to fetch the data from the device and then show the result. SUGGESTION – This button shows the response related to Health from the device connected. If everything is okay then on clicking this button you get a toast message saying "ALL FINE". BODY – This button takes you to the next activity

page where you can find a BODY GRAPH WITH SEVERAL checkbox on it and 3 buttons ‘all doctors’, ‘others’ and ‘search’. when you don’t know about the categories of doctor and you have any health problem, this graph can help you to get a doctor related to your search option, simply you have to mark a body part that you are having problem with and click the search button so it will give you a list of doctors which are specialized for that problem. All doctor button will send you to the all doctor list where you can find all types of doctors available. Others button is required when your problem doesn’t match in the body graph. 6.5 OTHER NONFUNCTIONAL REQUIREMENTS 6.5.1 Performance Requirements 6.1.1.1 Real-time applications provide current information. You should always see the latest results and notify the user if you are late. 6.1.1.2 System resource consumption The resource consumption of this application must not reach the amount that renders the mobile device unusable. The application must be able to run in the background in case the user wants to use another application. 6.5.2 Safety Requirements ● User needs to sign in with their account to prove their identity before using. ● User shall not use our application while driving or biking. 6.5.3 Security Requirements The security system has a login for all users to access all the features of the application. Credentials are also used in the system. Therefore, the chances of an application being compromised are very low. 1. Registration requirements. 2. 6.6 Software Quality Attributes Reliability The application meets all functional requirements without unexpected behavior. The output of the meter should not display erroneous or outdated information without alerting the user to possible errors. Availability The application will always be available on the user's Android device as long as the device is working properly. The functionality of the application depends on all required external services such as internet access. Users should be notified when these services are unavailable. Maintainability This application is very easy to maintain. Portability This software is designed to work with Android OS version 11.0 and above. 7. My SQL DATABASE USERS DATABASE All the data we gave in signup page is stored in MySQL data base table ‘LOGIN’. This data is used to match the credentials of the users they pass at the time of login. And also this data is used to do certain calculations to find the outcome of our model. TABLE LOGIN PATIENT DATABASE 303 patient details with 13 fields. Data to be used with AI model for its calculations. TABLE PATIENT_DATA Data starting with row 1 → DATA ending with 303 rows → CONCLUSION The idea for the Human Healthcare Monitoring System project is in our minds as it is essential to achieve the goal of "developing a project that helps to effectively serve the communities around us." It came to me. So we thought our idea shouldn't be Usefulness is limited to residents of a particular category As a community, our main goal was to develop ideas that would be useful to all types of people living around us, whether in rural or urban. This project (final development product) uses software and hardware as a whole (integrated with each other) to achieve the desired goals. The main functions are the "volunteer function" (performed by the software application independently) and the "monitoring function" (performed by the software application making a very important contribution). CONTRIBUTIONS Software Pushpal BandhopadhyayAryan Jain Pranav Sen Aman Kaushik Hardware Sreyashi Das Suvarna Sarkar Shubhangi Tiwari Hardware Coding Shikha Saraswat Pushpal BandopadhyayDATABASE Aryan Jain INDIVIDUAL CONTRIBUTION CONTRIBUTION MADE BY ARYAN JAIN (19BCE10152) Helped with the research part, project and functional Ideas. Read many of the research papers for the biomarker and the sensors for the functionality. Created the database To store the data of the patients that is required by the AI model to find the accurate results. Store the data of the user of the Android application, their all details and their input for the AI model to fetch the result on the android apk. Store the login credentials of the user of android application. Android app Connectivity to the Database. Manage database connections. All encryption (query) for MySQL database. Android app works with user feedback and stores database. Provide Presentation and Editing of Reports. REFERENCES /fulltext/197-1585663661.pdf :https://core.ac.uk/download/pdf/132492107.pdfhttps://bit.ly/3vDVtIw

Report Title:	Plagiarism Check Report
Report Link: (Use this link to send report to anyone)	https://www.check-plagiarism.com/plag-report/73056f8d2d5ff8fd8f9bb704663eeb06a557f1650877434
Report Generated Date:	25 April, 2022
Total Words:	1703
Total Characters:	10649
Keywords/Total Words Ratio:	0%
Excluded URL:	No
Unique:	**97%**
Matched:	**3%**

Sentence wise detail:

Introduction The technology of cell era opens the home windows to the android app.

The web sites are vanishing and the cell telephones are emerging.

It`s the time to extrade from traditional web sites to apps, which has come to be the a part of our day by day routine.We are introducing, `GoFree.

apk` the android software software program which could be Enabling rapid and faraway healthcare monitoring.

Our software is thinking about the person as both a affected person or physician.

challenge offers a complete approach to anybody primarily based totally at the

input.It offers us extra consolation and a higher person interface.

It acts as a top level view approximately the fitness & skilled

doctors.It acts as a fitness assistant for anybody.

The main features listed are: account registration, account login and project website.

Operating Environment This application is only available on the Android operating system.

This application can only be used on compatible Android devices.

Users must use this application on Android

OS 11.0 (R) (API 32) and later versions of

Android OS.

Design and Implementation Constraints Implementation language restrictions The programming language for the main application is Java.

The programming language is SQL for cloud target databases.

Resource limits The users device requires a valid data plan or WiFi connection. The users device needs enough storage space to install&runn the apk. (0)

The user's device must have sufficient battery life to run the application.

Assumptions and Dependencies Dependencies The software will be used with the idea that the Android API and licensing settlement stays the same.

Software Component Dependencies The software will be used with the idea that the Android OS is 11.

0(R) or Higher and The API Level is identical to 30 or Higher and the Screen Resolution is 1080 x 2280.

The software will be used with the idea that the device`s community interface card and motive force are workingcorrectly. 6.

3 External interface requirements User Interfaces The interface meets the following requirements to meet the needs ofthe user: It will be simple and easy to understand.

The controls that allow the user to interact with the application are clear and represent functionality within theapplication.

The interface contains user input.

Hardware Interfaces This application is intended for stand-alone single-user

systems.This application runs on an Android mobile device or Android emulator.

Requires a hardware device (sensor and biomarker) or interface.

Software Interfaces This software works on Android operating systems, especially version

11. 0 (Red Velvet Cake) and above.

Communications Interfaces Applications need to communicate with various databases and software services via API function calls.

Since the application is written in Java, Java functions make these calls to the API.

The exact format and protocol of incoming and outgoing messages needs to be abstracted from the API. 6.

4 SYSTEM FEATURES After installing Apk on your Android device, it will appear in the All Apps section.

Click the apk with the title Go Free" to launch it.

The apk will open and the main screen will be displayed with three options to choose from: Login, Sign Up and Web Page.

Fist we check the web-Page that is connected to our android page…by clicking on it

you will be redirected to the website of our project ‘MediPlus’ on the google chrome.

LOGIN PAGE - When user is already existing user of the APK then they can directly

login

through their login credentials, but these login credentials have to be verified by our database (i. e. MySql database).(1)
After the whole verification process done by the database user can login into the website.
SIGNUP PAGE - As a New User They need to Register their credentials first.
This is the page where users need to Fill their details like-NAME, EMAIL, AGE, SEX, BPS, SUGAR LEVEL,
Output for CHEST PAIN, Output for CHEST PAIN WHILE RESTING, output for CHEST PAIN DURING/AFTER HEAVY WORK, Select the
STRESS LEVEL and password(Which must be of at least 8 letters), then all these details get Registered in Our data .
HOME PAGE – after submitting the all required details you will be sent to next activity page which is home page and you can reach home page via login activity page too after login in with the credentials you already have.
Home page consists of 4 buttons – 'Find Doctors', 'Body', 'Add Device' and 'Suggestion'.
Find Doctors – by clicking on this you will be sent to the next activity page which consists of list of all doctors category wise with all the details of doctors and their contact information to get any consultationfrom them.
ADD DEVICE – This button is used to pair our android app to the smart watches and our built hardware(sensors and biomarkers) and to the AI model to fetch the data from the device and then show the result.
SUGGESTION – This button shows the response related to Health from the device connected.
If everything is okay then on clicking this button you get a toast message saying "ALL FINE".
BODY – This button takes you to the next activity page where you can find a BODY GRAPH WITH SEVERAL checkbox on it and 3 buttons 'all doctors', 'others'and 'search'.
when you don't know about the categories of doctor and you have any health problem, this graph can help you to get a doctor related to your search option, simply you have to mark a body part that you are having problem with and click the search button so it will give you a list of doctors which are specialized for that problem.
All doctor button will send you to the all doctor list where you can find all types of doctors available.
Others button is required when your problem doesn't match in the body graph. 6.
5 OTHER NONFUNCTIONAL REQUIREMENTS 6.5.
1 Performance Requirements 6.1.1.
1 Real-time applications provide current information.
You should always see the latest results and notify the user if you are late. 6.1.1.
2 System resource consumption The resource consumption of this application must not reach the amount that rendersthe mobile device unusable.
The application must be able to run in the background in case the user wants to use another application. 6.5.
2 Safety Requirements ● User needs to sign in with their account to prove their identity before using.
● User shall not use our application while driving or biking. 6.5.
3 Security Requirements The security system has a login for all users to access all the features of the application. Credentials are also used in the system.
Therefore, the chances of an application being compromised are very low. 1. Registration requirements. 2. 6. (2)
6 Software Quality Attributes Reliability The application meets all functional requirements without unexpected behavior.
The output of the meter should not display erroneous or outdated information without alerting the user to possible errors.
Availability The application will always be available on the users Android device as long as the device is working properly.
The functionality of the application depends on all required external services such as internet access.
Users should be notified when these services are unavailable.
Maintainability This application is very easy to maintain.

Portability This software is designed to work with Android OS version 11.0 and above. 7.

My SQL DATABASE USERS DATABASE All the data we gave in signup page is stored in MySQL data base table

'LOGIN'.This data is used to match the credentials of the users they pass at the time of login.

And also this data is used to do certain calculations to find the outcome of

our model. TABLE LOGIN PATIENT DATABASE 303 patient details with 13

fields.

Data to be used with AI model for its calculations.

TABLE PATIENT_DATA Data starting with row 1 → DATA ending with 303 rows → CONCLUSION The idea for the HumanHealthcare Monitoring System project

is in our minds as it is essential to achieve the goal of developing a project that helps to effectively serve the communities around us." It came to me. (3)

So we thought our idea shouldnt be Usefulness is limited to residents of a particular category As a

community, our maingoal was to develop ideas that would be useful to all types of people living around us,

whether in rural or urban.

This project (final development product) uses software and hardware as a whole (integrated with each other) to achieve the desired goals.

The main functions are the "volunteer function" (performed by the software application independently)

and the "monitoring function" (performed by the software application making a very important contribution).

CONTRIBUTIONS Software Pushpal BandhopadhyayAryan Jain Pranav Sen Aman Kaushik Hardware Sreyashi Das Suvarna Sarkar Shubhangi Tiwari Hardware Coding Shikha Saraswat

Pushpal BandopadhyayDATABASE Aryan Jain INDIVIDUAL CONTRIBUTION CONTRIBUTION MADE BY ARYAN JAIN (19BCE10152) Helped with the research part, project and functional Ideas.

Read many of the research papers for the biomarker and the sensors for the functionality.

Created the database To store the data of the patients that is required by the AI model to find the accurate results.

Store the data of the user of the Android application, their all details and their input for the AI model to fetch the result on the android apk.

Store the login credentials of the user of android

application.Android app Connectivity to the

Database.

Manage database connections.

All encryption (query) for MySQL database.

Android app works with user feedback and stores

database.Provide Presentation and Editing of Reports.

REFERENCES /fulltext/197-1585663661. pdf :https://core.

Match Urls:

0: https://www.youtube.com/watch?v=KbjyKJcHtOM

1: https://www.oracle.com/database/what-is-database/

2: https://www.nbutexas.com/wp-content/uploads/2020/08/3-2-20-Water-Design-Criteria-utility-defender-addition-1.pdf

3: https://www.powerthesaurus.org/it_came_to_me/synonyms

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