A
PROJECT REPORT
ON
"CAREEXPERT"

Submitted by,

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In partial fulfilment of the award of the degree of

B.C.A (Computer Science) (SEM VI)

Of

Sangamner Nagarpalika Arts, D.J. Malpani Commerce & B.N. Sarda Science College (Autonomous) , Sangamner

CERTIFICATE

This is to certify that,

Mr./Miss. _____ has completed the project

on_____ as a partial fulfilment of

B.C.A. **Science) (SEM VI)** laid down by the autonomous college affiliated to Savitribai Phule Pune University, satisfactorily during the academic Year 2022-2023.

Project Guide   *Head of the Department*

Internal Examiner   *External Examiner*

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1. INTRODUCTION

➢ The field of study in medical analysis. Significant efforts have been made in recent years to develop computer application.

➢ Where user entered all vitals sign related to the patient using many pre-defined options.

➢ Application design on for the particular need of the user carry out health examination smooth and effective manner.

➢ This application can use to reduce human error as much possible in the field of medical science.

➢ No formal knowledge is needed for the user to use the system.

➢ Care expert web application is as describe above, can lead to safe, secure, reliable and precise system.

2.SCOPE OF SYSTEM

CareExpert is a web Application which provide complete health care system providing theend-user with a responsive User Interface, wherein the user can enter all the vitals signs related to the patient using many predefined options. Moreover, this application is designedfor the particular need of the user to carry out health examinations in a smooth and effectivemanner. This application can be used to reduce human error as much as possible in the field of medical science. No formal knowledge is needed for the user to use this system.

- The project is basically targeted to provide health related services to remote places and provide better health care and improve national health
- Citizens can be instantly examined using this system which will be available todoctors, sevika, NGO, screeners, etc.
- This will provide proper diagnosis, maintain medical records and will be easily available to all.
- Past medical records and treatment processes will prove helpful in case a citizen migrates orconsult another doctor.
- Digital prescriptions will be generated that will eliminate false prescriptions andirregularities in the pharmaceuticals.
- Thus the national health will be in good hands as CareExpert will provide the besthealth care, provide fast and reliable health services, eliminate irregularities and form a strong foundation for a healthy nation.
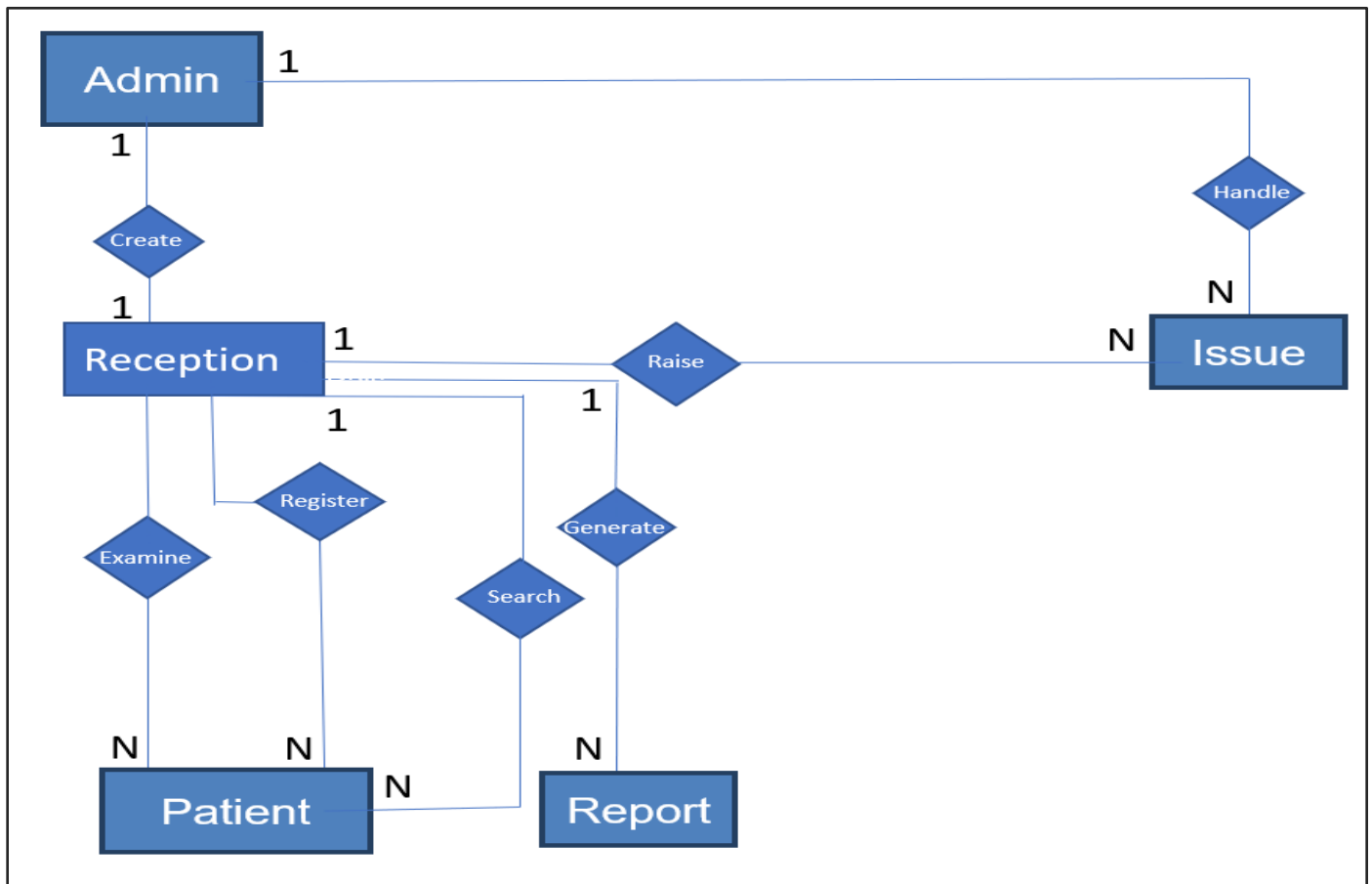
3.ER-DIGRAM

FIG. 2.1 ER DIAGRAM

4.DATABASE

4.1 TABLES

- **User Table**

Field	Type	Description	Constraints
ID	IntegerField	ID of the user.	Primary Key
mobile	IntegerField	mobile of the user.	NOT NULL
specialization	CharField(20)	specialization of the user.	NOT NULL
gender	CharField(20)	gender of the user.	NOT NULL
qualification	CharField(20)	qualification of the user.	NOT NULL
dob	DateField	dob of the user.	NOT NULL
blood_grp	CharField(20)	blood_grp of the user.	NOT NULL
country	CharField(20)	country of the user.	NOT NULL
state	CharField(20)	state of the user.	NOT NULL
district	CharField(20)	district of the user.	NOT NULL
address	CharField(20)	address of the user.	NOT NULL
aadhar	CharField(20)	aadhar of the user.	NOT NULL
pincode	CharField(20)	pincode of the user.	NOT NULL

- **Symptoms Table**

Field	Type	Description	Constraints
symptoms	CharField(20)	symptoms of the user.	NOT NULL
height	CharField(20)	height of the user.	NOT NULL
weight	CharField(20)	weight of the user.	NOT NULL

spo2	CharField(20)	spo2 of the user.	NOT NULL
pulse	CharField(20)	pulse of the user.	NOT NULL
temp	CharField(20)	temp of the user.	NOT NULL
arm	CharField(20)	arm of the user.	NOT NULL

- **Admin Table**

Field	Type	Description	Constraints
Username	CharField(20)	username of the user	NOT NULL
Password	CharField(20)	password of the user	NOT NULL
Email	email	email of the user	NOT NULL

- **Survey Table**

Field	Type	Description	Constraints
Add Family Members	TextField	Add the family members	NOT NULL
No of Family Members	IntegerField	No. of Family members	NOT NULL
Name of head of family	CharField(20)	Name of head of family	NOT NULL
No of other adult males	IntegerField	No of other adult males	NOT NULL
No of other adult Females	IntegerField	No of other adult Females	NOT NULL
No of male children	IntegerField	No of male children	NOT NULL
No of female children	IntegerField	No of female children	NOT NULL
select_family	CharField(50)	Select the family	NOT NULL
water_source	CharField(20)	Drinking water Source of Users	NOT NULL
water_requiring_treatment	CharField(20)	Drinking water requiring treatment	NOT NULL

non_usage_of_toilets	CharField(20)	Non usage of toilets	NOT NULL
distance_of_subcenters	CharField(20)	Distance of Subcenters from users home	NOT NULL
distance_of_primary_health_centers	CharField(20)	Distance of Primary Health Centers from users home	NOT NULL
distance_of_community_health_centers	CharField(20)	Distance of Community Health Centers from users home	NOT NULL
distance_of_district_hospitals	CharField(20)	Distance of District Hospitals from users home	NOT NULL
distance_of_pathology_lab	CharField(20)	Distance of pathology lab from users home	NOT NULL
distance_of_medical_store	CharField(20)	Distance of Medical Store from users	NOT NULL
status_of_delivery_of_children	CharField(50)	Status of delivery of children	NOT NULL
status_of_vaccination_of_children	CharField(20)	Status of vaccination of children	NOT NULL
status_of_female_related_problems	CharField(20)	Status of female related problems	NOT NULL
centrally_issued_health_insurance	CharField(20)	Centrally Issued health insurance	NOT NULL
state_issued_health_insurance	CharField(20)	State Issued health insurance	NOT NULL
personal_health_insurance	CharField(20)	Personal health insurance	NOT NULL

5. CODE

1. LOGIN PAGE CODE:

```
{% load static %}
<!DOCTYPE html>
<html lang="en">
<head>
 <meta charset="utf-8">
 <meta name="viewport" content="width=device-width, initial-scale=1">
 <title>DiagnoseIndia</title>
 <meta name="description" content="Free Bootstrap Theme by BootstrapMade.com">
 <meta name="keywords" content="free website templates, free bootstrap themes, free
template, free bootstrap, free website template">
 <link rel="stylesheet" type="text/css"
href="https://fonts.googleapis.com/css?family=Open+Sans|Raleway|Candal">
 <link rel="stylesheet" type="text/css" href="{% static 'home/css/font-awesome.min.css' %}">
 <link rel="stylesheet" type="text/css" href="{% static 'home/css/bootstrap.min.css' %}">
 <link rel="stylesheet" type="text/css" href="{% static 'home/css/style.css' %}">
</head>
 </div>
<body id="myPage" data-spy="scroll" data-target=".navbar" data-offset="60">
   <section id="banner" class="banner">
     <div class="bg-color">
      <div class="container">
       <div class="row">
        <div class="banner-info" >
         <section id="cta-2" class="section-padding" style="width: 500px; height:350px;
padding:50px; padding-top:10px; text-align:center;">
           <div class="container" >
```

2. DASHBOARD PAGE CODE:

```
{% extends 'adminbase.html' %}

{% load widget_tweaks %}

{% block content %}

<head>

 <meta charset="utf-8">

 <meta name="viewport" content="width=device-width, initial-scale=1, shrink-to-fit=no">

 <meta name="viewport" content="width=device-width, initial-scale=1">

 <script src="https://ajax.googleapis.com/ajax/libs/jquery/1.10.2/jquery.min.js"></script>

 <link href="http://netdna.bootstrapcdn.com/bootstrap/4.0.0-beta/css/bootstrap.min.css"
rel="stylesheet">

 <link rel="stylesheet"
href="https://maxcdn.bootstrapcdn.com/bootstrap/4.4.1/css/bootstrap.min.css">

 <link href="https://maxcdn.bootstrapcdn.com/font-awesome/4.3.0/css/font-awesome.min.css"
rel="stylesheet">

 <style type="text/css">

  a:link {

   text-decoration: none;

  }

  .order-card {

   color: rgb(255, 255, 255);

  }

  .bg-c-blue {

   background: #04868f;

  }
```

3. REPORT:

```
{% load static %}
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta http-equiv="X-UA-Compatible" content="IE=edge">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>Report</title>
    <!-- CSS only -->
    <link href="https://cdn.jsdelivr.net/npm/bootstrap@5.1.3/dist/css/bootstrap.min.css"
rel="stylesheet" integrity="sha384-
1BmE4kWBq78iYhFldvKuhfTAU6auU8tT94WrHftjDbrCEXSU1oBoqyl2QvZ6jIW3"
crossorigin="anonymous">

    <!-- JavaScript Bundle with Popper -->
    <script src="https://cdn.jsdelivr.net/npm/bootstrap@5.1.3/dist/js/bootstrap.bundle.min.js"
integrity="sha384-
ka7Sk0Gln4gmtz2MlQnikT1wXgYsOg+OMhuP+IlRH9sENBO0LRn5q+8nbTov4+1p"
crossorigin="anonymous"></script>

    <link rel="stylesheet" href="{% static 'instant_exam/style1.css' %}">
</head>
<body>
    <div class="container bootdey">
        <div class="row invoice row-printable">
            <div class="col-md-10">
                <!-- col-lg-12 start here -->
                <div class="panel panel-default plain" id="dash_0">
                    <!-- Start .panel -->
                    <div class="panel-body p30">
                        <div class="row">
                            <!-- Start .row -->
```
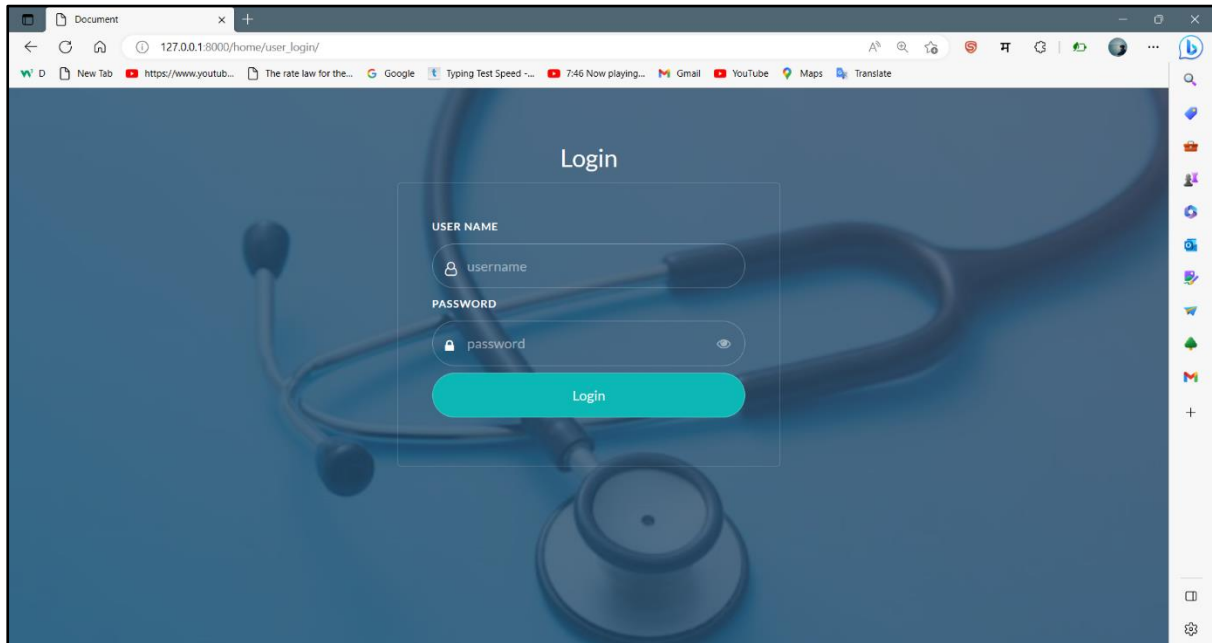
4. Register:

```
<body >
 <section class="img" onload="resetSelection()" style="background-image: url({% static
'register/images/health1.jpg'%}); width:100%;">
  <div  class="bg-color p-t-180 p-b-100 font-robo ftco-section" >
  <div class="">
  <div class="container">
   <!--form method="POST">
    {% csrf_token %--}
   <--body onload="resetSelection()"-->
    <div class="row justify-content-center">
     <div class="col-md-4 text-center mb-4">
      <h2 class="heading-section">Registration form</h2>
     </div>
    </div>
    <div class="row justify-content-center">
     <div class="col-md-3 col-lg-6">
      <div class="login-wrap">
       <h3 class="text-center mb-4">Create Your Account</h3>
       <form action="" method="POST" class="signup-form"  enctype="multipart/form-data">
        {% csrf_token %}
        <div class="form-group mb-2">
         <label class="first_name" for="first_name">first Name</label>
         <input type="text" id="first_name" name="first_name" class="form-control"
placeholder="Enter first name" required=""
         <span class="icon fa fa-user-o"></span>
        </div>
        <div class="form-group mb-2">
         <label class="last_name" for="last_name">last name</label>
```

5. PROFILE:

```
{% load static %}

<html lang="en">

<head>

    <meta charset="UTF-8">

    <meta name="viewport" content="width=device-width, initial-scale=1, shrink-to-fit=no">

    <meta name="description" content="Colorlib Templates">

    <meta http-equiv="X-UA-Compatible" content="IE=edge">

    <meta name="author" content="Colorlib">

    <meta name="keywords" content="Colorlib Templates">


    <!-- CSS only -->

<link href="https://cdn.jsdelivr.net/npm/bootstrap@5.1.3/dist/css/bootstrap.min.css"
rel="stylesheet" integrity="sha384-
1BmE4kWBq78iYhFldvKuhfTAU6auU8tT94WrHftjDbrCEXSU1oBoqyl2QvZ6jIW3"
crossorigin="anonymous">

<!-- JavaScript Bundle with Popper -->

<script src="https://cdn.jsdelivr.net/npm/bootstrap@5.1.3/dist/js/bootstrap.bundle.min.js"
integrity="sha384-
ka7Sk0Gln4gmtz2MlQnikT1wXgYsOg+OMhuP+IlRH9sENBO0LRn5q+8nbTov4+1p"
crossorigin="anonymous"></script>


    <!-- Icons font CSS-->

    <link href="{% static 'instant_exam/vendor/mdi-font/css/material-design-iconic-font.min.css'
%}" rel="stylesheet" media="all">

    <link href="{% static 'instant_exam/vendor/font-awesome-4.7/css/font-awesome.min.css' %}"
rel="stylesheet" media="all">

    <!-- Font special for pages-->

    <link
href="https://fonts.googleapis.com/css?family=Roboto:100,100i,300,300i,400,400i,500,500i,700
,700i,900,900i" rel="stylesheet">
```
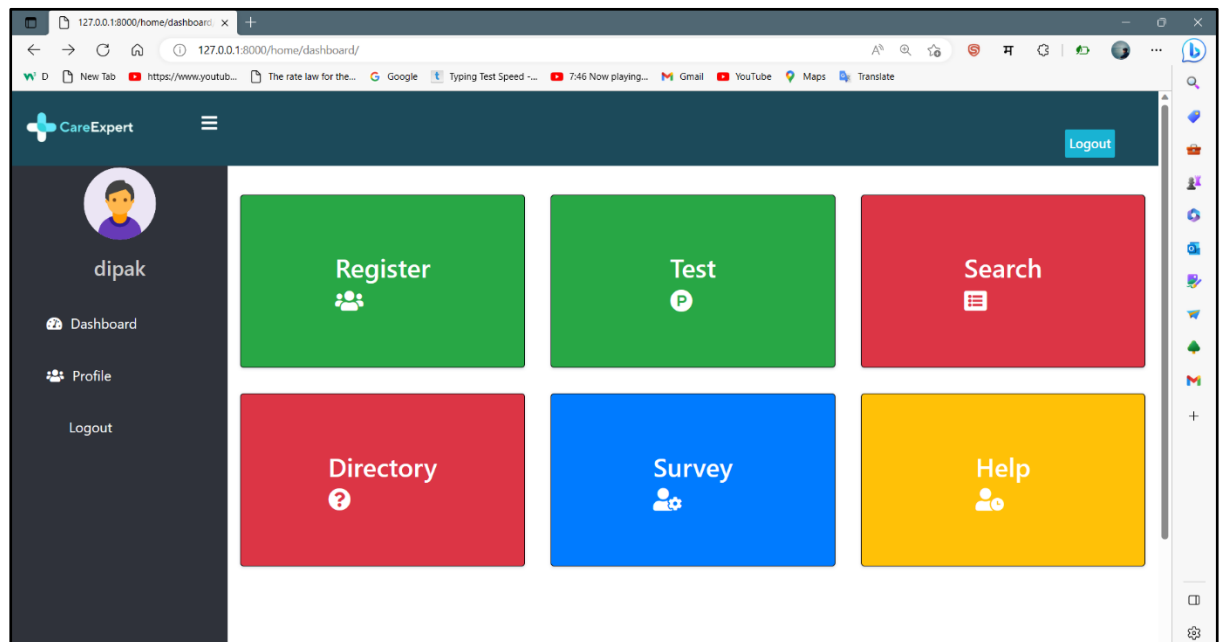
6. Views:

```python
import numpy as np

import pandas as pd

from scipy.stats import mode

# import matplotlib.pyplot as plt

# import seaborn as sns

from sklearn.preprocessing import LabelEncoder

from sklearn.model_selection import train_test_split, cross_val_score

from sklearn.svm import SVC

from sklearn.naive_bayes import GaussianNB

from sklearn.ensemble import RandomForestClassifier

from sklearn.metrics import accuracy_score, confusion_matrix

from datetime import date

today=date.today()

d1=today.strftime("%A, %B %d, %Y")

# Create your views here.

def index(request):

    return render(request,'index.html')

def dashboard(request):

        return render(request,'admin_dashboard.html')

def sendEmail(to, content):

    server = smtplib.SMTP('smtp.gmail.com', 587)

    server.ehlo()

    server.starttls()

    server.login('dipakgaikwadmg@gmail.com', 'uhbfgvgbyvmadnvk')

    server.sendmail('dipakgaikwadmg@gmail.com', 'dipakgaikwadmg@gmail.com')

    server.close()

def user_login(request):

    if request.method=='POST':

        username=request.POST['username']
```

6. INPUT SCREEN

1. LOGIN PAGE :

2. DASHBOARD :

PATIENT REGISTRATION :

3. PATIENT INFORMATION :

4. VITALS :

5. SYMPTOMS :

7. OUTPUT SCREEN

1. SEARCH PATIENT :

2. REPORT

3. PREDICTION :

Date of Birth: April 1, 2023
Blood: A+

Vitals Signs	Figures
Blood Pressure	5
Pulse Rate	7
SPO^2	6
Temperature	9
Height	145
Weight	56
Arm Circumference	7

Symptoms Information

Itching

Result: Fungal infection

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4. AFTER REGISTRATION :

CareExpert

Logout

dipak

- Dashboard
- Profile

Logout

Registration successful ×

Register

Test

Search

Directory

Survey

Help

REPORTS

Report No : 1

CareExpert

Patient Information

Name: Dipak
Mobile: 9359809574
Address: Vani Nashik
ADHAAR No: 346147506808

Extra Information

Gender: Male
Date of Birth: April 1, 2023
Blood:O+

Vitals Signs	Figures
Blood Pressure	6
Pulse Rate	4
SPO^2	6
Temperature	54
Height	172
Weight	56kg
Arm Circumference	5

Symptoms Information

Itching,Skin Rash

Result: Fungal infection

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CareExpert

Patient Information

Name: Prathamesh
Mobile: 9389465465
Address: Sangmner
ADHAAR No: 444444444444

Extra Information

Gender: Male
Date of Birth: April 1, 2023
Blood:AB-

Vitals Signs	Figures
Blood Pressure	34
Pulse Rate	54
SPO^2	54
Temperature	45
Height	172
Weight	66
Arm Circumference	87

Symptoms Information

Shivering,Chills

Result: Allergy

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Report No: 3

CareExpert

Patient Information

Name: Amol
Mobile: 7020288965
Address: Sangmner
ADHAAR No: 111111111111

Extra Information

Gender: Male
Date of Birth: April 1, 2023
Blood:A+

Vitals Signs	Figures
Blood Pressure	5
Pulse Rate	7
SPO^2	6
Temperature	9
Height	145
Weight	56
Arm Circumference	7

Symptoms Information

Chills,Joint Pain

Result: Allergy

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Report No: 4

Patient Information

Name: abhishek
Mobile: 2656468546
Address: sangmner
ADHAAR No: 123456789101

Extra Information

Gender: Male
Date of Birth: April 1, 2023
Blood:A-

Vitals Signs	Figures
Blood Pressure	54
Pulse Rate	54
SPO^2	57
Temperature	79
Height	145
Weight	56
Arm Circumference	78

Symptoms Information

Skin Rash,Shivering,Chills,Joint Pain,High Fever,Sunken Eyes

Result: Allergy

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Report No: 5

Patient Information

Name: omkar
Mobile: 7676867984
Address: sangmner
ADHAAR No: 864646464646

Extra Information

Gender: Male
Date of Birth: April 1, 2023
Blood: A-

Vitals Signs	Figures
Blood Pressure	234
Pulse Rate	434
SPO^2	4
Temperature	344
Height	23
Weight	23
Arm Circumference	656

Symptoms Information

Itching,Nodal Skin Eruptions

Result: Fungal infection

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Report No: 6

CareExpert

Patient Information

Name: Christina
Mobile: 7030018703
Address: Sangmner
ADHAAR No: 786486468468

Extra Information

Gender: Female
Date of Birth: April 1, 2023
Blood:O-

Vitals Signs	Figures
Blood Pressure	23
Pulse Rate	56
SPO^2	86
Temperature	67
Height	343
Weight	43
Arm Circumference	67

Symptoms Information

Weakness Of One Body Side

Result: Paralysis (brain hemorrhage)

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Report No: 6

CareExpert

Patient Information

Name: Shruti
Mobile: 9359868457
Address: Sangmner
ADHAAR No: 546486486456

Extra Information

Gender: Female
Date of Birth: April 1, 2023
Blood:A-

Vitals Signs	Figures
Blood Pressure	54
Pulse Rate	78
SPO^2	787
Temperature	787
Height	454
Weight	545
Arm Circumference	7878

Symptoms Information

Itching,Skin Rash,Nodal Skin Eruptions

Result: Fungal infection

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FUTURE ENHANCEMENT

CareExpert is a complete healthcare and disease prediction system making heath care and diagnostics simple.

So far now CareExpert is capable of detecting diseases based on the symptoms. The Future Update in CareExpert might include Vitals collection through IOT devices for treating different diseases that will eliminate human error and also be time efficient.

Example, Eko is EMR device that can take EMR and generate reports simultaneously makingtreatment of heart diseases simpler. Thus data from many more devices can be brought into observation and health diseases prediction and treatment can have drastic change. With thisData Precise prediction of the disease can be made using the vitals and the another critical data collected from the various IOT devices.

This Data Can be Stored into remote servers and can be used when required by using API. This Data would be then processed through the software for the prediction of the disease.
Based on the predicted disease the software would also suggest the best suitable treatment procedure or changes from the steps that were followed before. Based on the predicted diseasethe software would also suggest the required lab tests and also medications to be done by thepatients.

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