SOURCE CODE

DETAILS.HTML:

```
<!DOCTYPE html>
<html lang="en">
<head>
    <title>Intracranial Hemorrhage Detection in CT Scans using Deep Learning</title>
    <meta charset="UTF-8">
    <style>
        * {
            box-sizing: :border-box;
        }
        body {
            margin: 0;
            font-family: Arial, Helvetica, sans-serif;
        }
        .header {
            overflow: hidden;
            background-color: rgb(202, 40, 40);
            padding: 20px 10px;
        }
        .header a {
   float: left;
            color: black;
            text-align: center;
            padding: 12px;
            text-decoration: none;
            font-size: 18px;
            line-height: 25px;
            border-radius: 4px;
```

```
}
.header a.logo {
    font-size: 25px;
    font-weight: bold;
}
.header a:hover {
    background-color: #ddd;
    color: black;
}
.header a.active {
    background-color: dodgerblue;
    color: white;
}
.header-center {
    float: right;
}
img {
    display: block;
    margin-left: auto;
    margin-right: auto;

}
div {
    padding: auto;
}
h1 {
    text-align: center;
}
input {
    align: center;
}
```

```
        #one {
            align: center;
        }
    </style>
</head>
<body>

    <div class="header">
        <a href="/" class="logo">Hemorrhage Detection in CT Scans using Deep Learning</a>
        <div class="header-center">
            <a class="active" href="/">Home</a>
            <a href="/project_details">Project Details</a>
        </div>
    </div>
    <div id="one">

        <div style="background-color:rgb(216, 152, 129);">
            <table align="center">
                <tr>
                    <td>
                        <h1>ABSTRACT :</h1>
                    </td>
                </tr>
                <tr>
                    <td>
        <p>In intracranial hemorrhage treatment patient mortality depends on prompt diagnosis based on  radiologist’s assessment of CT scans.
                        In this paper, We are developing the web application using the python django and deep
                        learning
                        concepts which can able to take image
```

```
                of the brain the CT scan and do image analysis on the CT scan and our trained deep
learning
                model
                can able to predict wheather the
                person has contain the intracranial hemorrhage diseases or not.We think it is verry
helpfull
                for
                the
                people who don’t have ablity to
                accesses the high professional doctors which can able to dtect the hemorrhage
diseases</p>
            </td>
        </tr>
    </table>
</div>
</div>
<div style="background-color:rgb(251, 253, 252);">
    <h1>Flow of the Project</h1>
    <img src="/static/flow.png" alt="flow">
</div>
<div style="background-color:rgb(251, 253, 252);">
    <h1>Analysis of outputs</h1>
    <img src="/static/pie.png" alt="flow">
</div>
</body>
</html>
```

INDEX HTML:

```
<!DOCTYPE html>
<html lang="en">
<head>
    <title>Intracranial Hemorrhage Detection in CT Scans using Deep Learning</title>
    <meta charset="UTF-8">
    <style>
        * {
            box-sizing: :border-box;
        }

        body {
            margin: 0;
            font-family: Arial, Helvetica, sans-serif;
        }
        .header {
            overflow: hidden;
            background-color: rgb(202, 40, 40);
            padding: 20px 10px;
        }
        .header a {
            float: left;
            color: black;
            text-align: center;
            padding: 12px;
            text-decoration: none;
            font-size: 18px;
            line-height: 25px;
```

```
    border-radius: 4px;
}
.header a.logo {
    font-size: 25px;
    font-weight: bold;
}
.header a:hover {
    background-color: #ddd;
    color: black;
}
.header a.active {
    background-color: dodgerblue;
    color: white;
}
.header-center {
    float: right;
}
img {
        display : block;
        margin-left: auto;
        margin-right: auto;
}
div {
    padding : auto;
}
h1 {
    text-align: center;
}
input {
```

```
            align: center;


        }
        </style>


</head>
<body>
    <div class="header">
        <a href="/" class="logo">Hemorrhage Detection in CT Scans using Deep Learning</a>
        <div class="header-center">
            <a class="active" href="/">Home</a>
            <a href="project_details">Project Details</a>
        </div>
    </div>
    <h1>Hemorrhage Detection in CT Scans using Deep Learning</h1>
    <div>
        <form method="POST" align = "center" action="{{url_for('home')}}"
enctype="multipart/form-data">
            <tabel>
                <tr><input type="file" name='image' class='btn'></tr>
                <tr><input type="submit" class='btn'></tr>
            </tabel>
        </form>
    </div>
</body>
</html>
```

prediction.html:

```
<!DOCTYPE html>
<html lang="en">
<head>
    <title>Result...</title>
    <meta charset="UTF-8">
    <style>
        * {
            box-sizing: :border-box;
        }
        body {
            margin: 0;
            font-family: Arial, Helvetica, sans-serif;
        }
        .header {
            overflow: hidden;
            background-color: rgb(202, 40, 40);
            padding: 20px 10px;
        }
        .header a {
            float: left;
            color: black;
            text-align: center;
            padding: 12px;
            text-decoration: none;
            font-size: 18px;
            line-height: 25px;
            border-radius: 4px;
        }
```

```
.header a.logo {
    font-size: 25px;
    font-weight: bold;
}
.header a:hover {
    background-color: #ddd;
    color: black;
}
.header a.active {
    background-color: dodgerblue;
    color: white;
}
.header-center {
    float: right;
}
img {
    display: block;
    margin-left: auto;
    margin-right: auto;
}
div {

    padding: auto;
}
h1 {
    text-align: center;
}
input {
    align: center;
}
img {
```

```
            display: block;
            margin-left: auto;
            margin-right: auto;
            width: 50%;
        }
    </style>
</head>
<body>
    <div class="header">
        <a href="/" class="logo">Hemorrhage Detection in CT Scans using Deep Learning</a>
        <div class="header-center">
            <a class="active" href="/">Home</a>
            <a href="/project_details">Project Details</a>
        </div>
    </div>
    {% if data == "problem" %}
      <h1>You have chances of geeting Hemorrhage</h1><br>
      <a href="/project_details"><h1>click Here to know the Details of project</h1></a>
  {% else %}
  <h1>You Free from Hemorrhage</h1>
  <h1>please maintain the saftey measures and consult Doctor if you have problem</h1>
   {% endif %}
       <h1>{{data}}</h1>
    <img src="{{url_for('load_img')}}" alt='img'>
    <br><a href="/" class='btn'>go back</a>
</body>
</html>
```

APP.PY:

```
from flask import Flask, render_template, request, send_from_directory
import cv2
from tensorflow.keras.models import Sequential,load_model
import numpy as np
import pickle
import pandas as pd
model1 = load_model('keras_model.h5',compile=True)
labels_dict={0:'problem',1:'normal'}
COUNT = 0




app = Flask(name)
app.config["SEND_FILE_MAX_AGE_DEFAULT"] = 1
@app.route('/')
def man():
    return render_template('index.html')\
@app.route('/project_details')
def details():
    return render_template('details.html')
app.route('/home', methods=['POST'])
def home():
    global COUNT
    img = request.files['image']
    img.save('static/{}.jpg'.format(COUNT))
    img_arr = cv2.imread('static/{}.jpg'.format(COUNT))
    img_arr = cv2.resize(img_arr, (224,224))
```

```
    img_arr = img_arr / 255.0
    img_arr = img_arr.reshape(1, 224,224,3)#(1, 224,224,3)
    result = model1.predict(img_arr)
        label=np.argmax(result,axis=1)[0]
    prediction = labels_dict[label]
      if prediction=="problem":
            print("problem")
    elif prediction== "normal":
           print("normal")
              COUNT +=1;
    return render_template('prediction.html', data=prediction)
@app.route('/load_img')
def load_img():
    global COUNT
    return send_from_directory('static', "{}.jpg".format(COUNT-1))
if name == 'main':
    app.run(debug=True)
```