

## SPRINT 3

Date : 16 Nov 2022

Project Name : Early Detection Of Chronic Kidney Disease  
Using Machine Learning

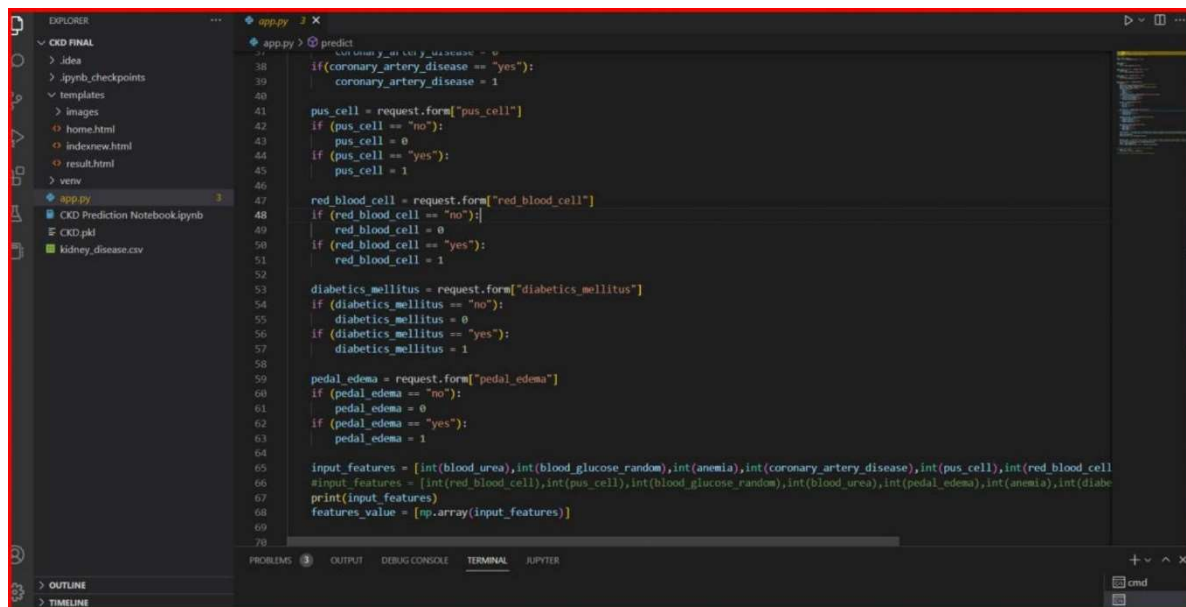
Team ID : PNT2022TMID15929

Team Lead : RAGHUL V

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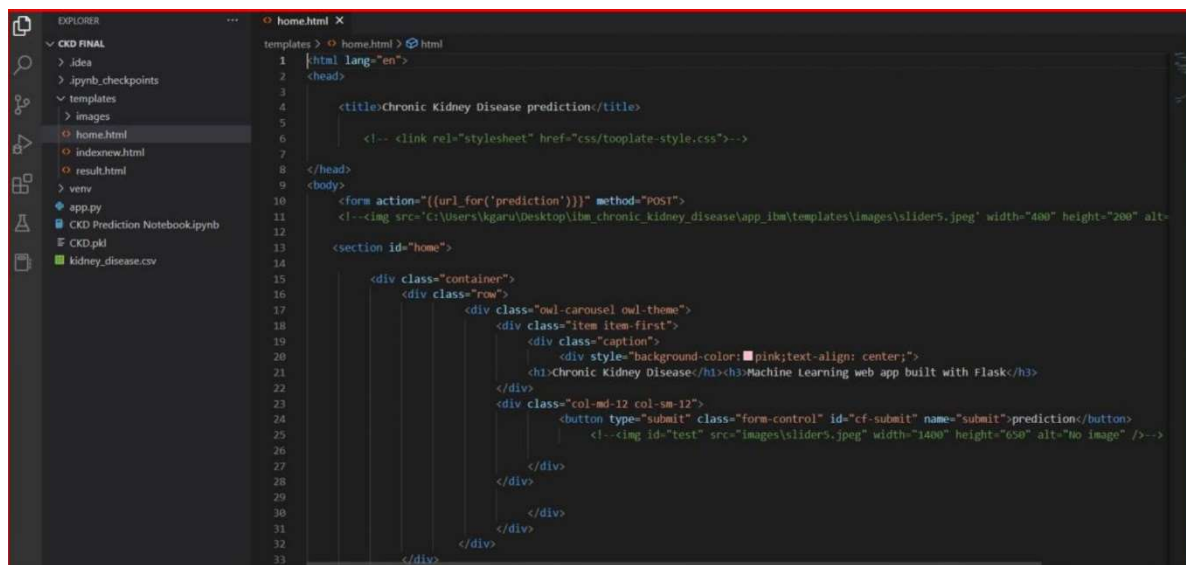
**In this sprint we are doing local deployment**

### App.py code screen



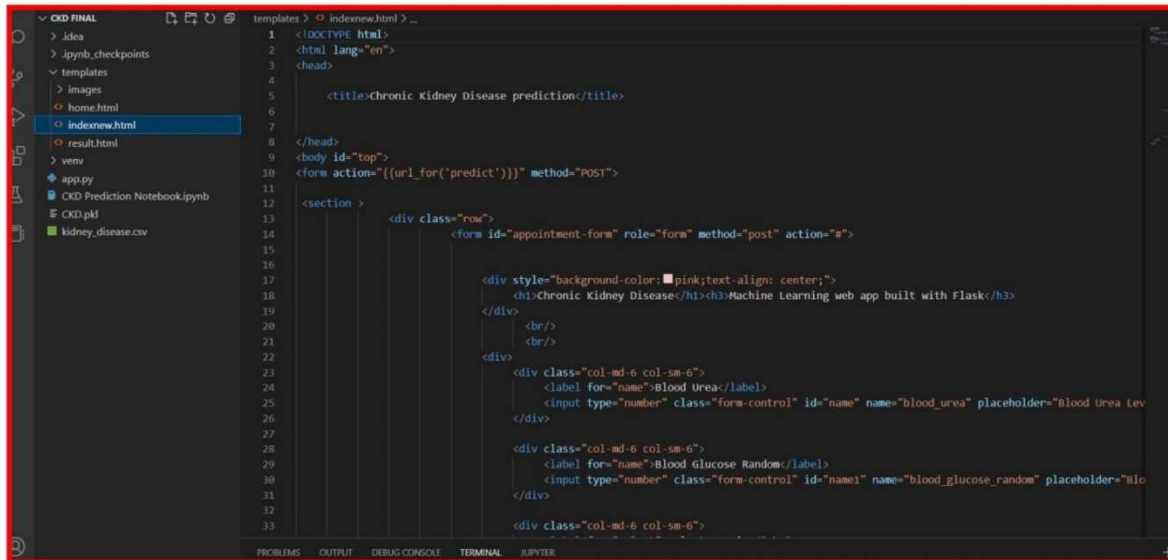
```
37 from flask import Flask, request, jsonify, render_template
38
39 if __name__ == '__main__':
40     app = Flask(__name__)
41
42     pus_cell = request.form["pus_cell"]
43     if (pus_cell == "no"):
44         pus_cell = 0
45     if (pus_cell == "yes"):
46         pus_cell = 1
47
48     red_blood_cell = request.form["red_blood_cell"]
49     if (red_blood_cell == "no"):
50         red_blood_cell = 0
51     if (red_blood_cell == "yes"):
52         red_blood_cell = 1
53
54     diabetics_mellitus = request.form["diabetics_mellitus"]
55     if (diabetics_mellitus == "no"):
56         diabetics_mellitus = 0
57     if (diabetics_mellitus == "yes"):
58         diabetics_mellitus = 1
59
60     pedal_edema = request.form["pedal_edema"]
61     if (pedal_edema == "no"):
62         pedal_edema = 0
63     if (pedal_edema == "yes"):
64         pedal_edema = 1
65
66     input_features = [int(blood_urea),int(blood_glucose_random),int(anemia),int(coronary_artery_disease),int(pus_cell),int(red_blood_cell),int(diabetics_mellitus),int(pedal_edema)]
67     input_features = [int(red_blood_cell),int(pus_cell),int(blood_glucose_random),int(blood_urea),int(pedal_edema),int(anemia),int(diabetics_mellitus)]
68     print(input_features)
69     features_value = np.array(input_features)
70
71     # Predict the result
72     prediction = model.predict(features_value)
73     result = prediction[0]
74     if (result == 0):
75         result = "No Chronic Kidney Disease"
76     else:
77         result = "Chronic Kidney Disease"
```

### HOME.HTML CODE SCRE



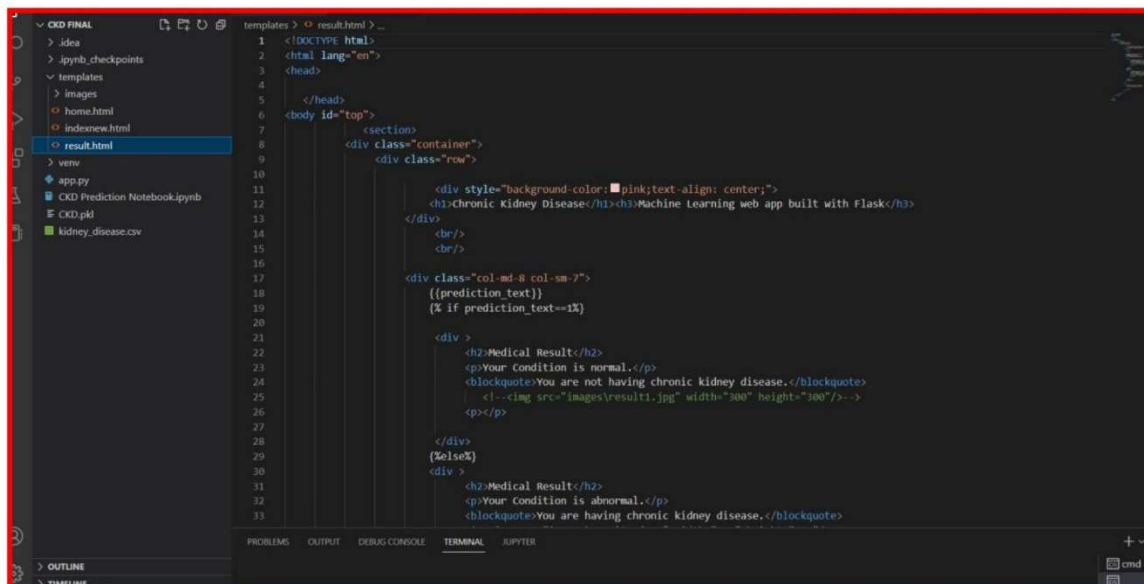
```
1 <html lang="en">
2 <head>
3
4 <title>Chronic Kidney Disease prediction</title>
5
6 <!-- <link rel="stylesheet" href="css/tooplate-style.css"> -->
7
8 </head>
9 <body>
10
11 <form action="{url_for('prediction')}}" method="POST">
12
13 <!---->
14
15 <section id="home">
16
17 <div class="container">
18 <div class="row">
19 <div class="col-md-12 col-sm-12">
20 <div class="owl-carousel owl-theme">
21 <div class="item item-first">
22 <div class="caption">
23 <div style="background-color: #f0f0f0; padding: 5px; text-align: center;>
24 <h1>Chronic Kidney Disease</h1><h3>Machine Learning web app built with Flask</h3>
25 </div>
26 <div class="col-md-12 col-sm-12">
27 <button type="submit" class="form-control" id="cf-submit" name="submit">prediction</button>
28 <!---->
29 </div>
30 </div>
31 </div>
32 </div>
33 </div>
```

## INDEXNEW.HTML CODE SCREEN



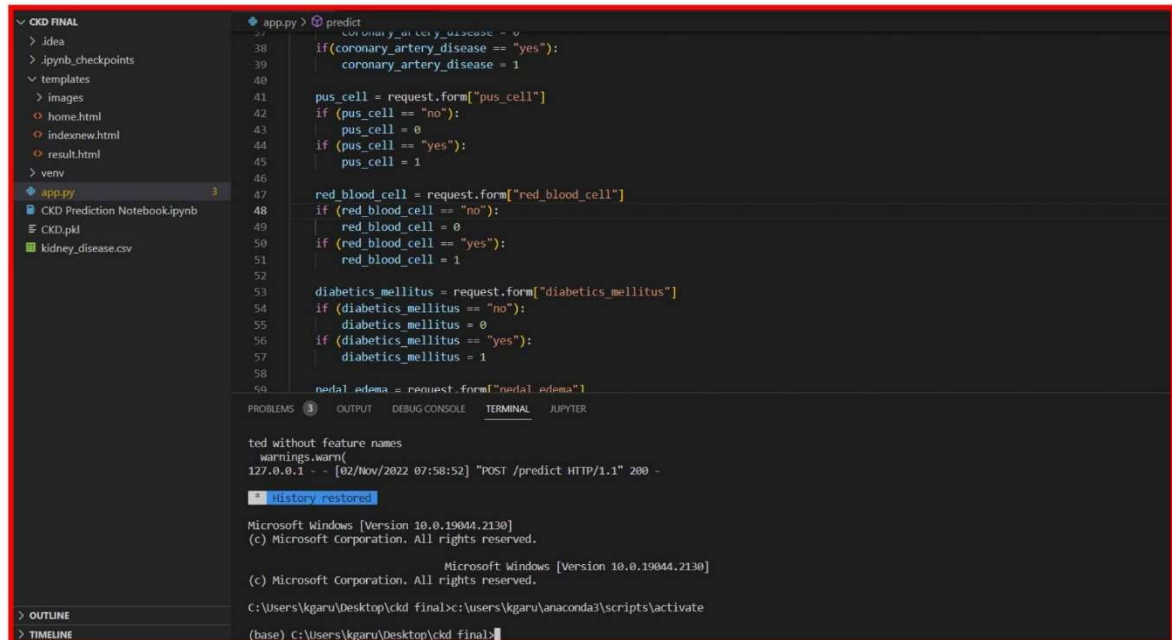
```
1 <!DOCTYPE html>
2 <html lang="en">
3 <head>
4
5     <title>Chronic Kidney Disease prediction</title>
6
7
8 </head>
9 <body id="top">
10 <form action="{{url_for('predict')}}" method="POST">
11
12 <section>
13     <div class="row">
14         <div class="col-md-6 col-sm-6">
15             <form id="appointment-form" role="form" method="post" action="#">
16
17                 <div style="background-color: #pink;text-align: center;">
18                     <h1>Chronic Kidney Disease</h1><h3>Machine learning web app built with Flask</h3>
19                 </div>
20                 <br/>
21                 <br/>
22                 <div>
23                     <div class="col-md-6 col-sm-6">
24                         <label for="name">Blood Urea</label>
25                         <input type="number" class="form-control" id="name" name="blood_urea" placeholder="Blood Urea Lev">
26                     </div>
27                     <div class="col-md-6 col-sm-6">
28                         <label for="name">Blood Glucose Random</label>
29                         <input type="number" class="form-control" id="name1" name="blood_glucose_random" placeholder="Blo">
30                     </div>
31                 </div>
32                 <div class="col-md-6 col-sm-6">
33
```

## RESULT.HTML CODE SCREEN



```
1 <!DOCTYPE html>
2 <html lang="en">
3 <head>
4
5     </head>
6 <body id="top">
7     <section>
8         <div class="container">
9             <div class="row">
10
11                 <div style="background-color: #pink;text-align: center;">
12                     <h1>Chronic Kidney Disease</h1><h3>Machine Learning web app built with Flask</h3>
13                 </div>
14                 <br/>
15                 <br/>
16                 <div class="col-md-8 col-sm-7">
17                     {{prediction_text}}
18                     {% if prediction_text==1%}
19
20                     <div>
21                         <h2>Medical Result</h2>
22                         <p>Your Condition is normal.</p>
23                         <blockquote>You are not having chronic kidney disease.</blockquote>
24                         <!---->
25                         <p></p>
26                     </div>
27                     {%else%}
28                     <div>
29                         <h2>Medical Result</h2>
30                         <p>Your Condition is abnormal.</p>
31                         <blockquote>You are having chronic kidney disease.</blockquote>
32                     </div>
33
```

# LOCAL DEPLOYMENT CODE SCREEN



```
app.py > predict
38     if(coronary_artery_disease == "yes"):
39         coronary_artery_disease = 1
40
41     pus_cell = request.form["pus_cell"]
42     if (pus_cell == "no"):
43         pus_cell = 0
44     if (pus_cell == "yes"):
45         pus_cell = 1
46
47     red_blood_cell = request.form["red_blood_cell"]
48     if (red_blood_cell == "no"):
49         red_blood_cell = 0
50     if (red_blood_cell == "yes"):
51         red_blood_cell = 1
52
53     diabetics_mellitus = request.form["diabetics_mellitus"]
54     if (diabetics_mellitus == "no"):
55         diabetics_mellitus = 0
56     if (diabetics_mellitus == "yes"):
57         diabetics_mellitus = 1
58
59     pedal_edema = request.form["pedal_edema"]
60     if (pedal_edema == "no"):
61         pedal_edema = 0
62     if (pedal_edema == "yes"):
63         pedal_edema = 1
64
65     # Predict the result
66     prediction = model.predict([coronary_artery_disease, pus_cell, red_blood_cell, diabetics_mellitus, pedal_edema])
67
68     return render_template("index.html", prediction=prediction)
69
70 if __name__ == '__main__':
71     app.run(debug=True)
```

PROBLEMS 3 OUTPUT DEBUG CONSOLE TERMINAL JUPYTER

```
ted without feature names
warnings.warn(
127.0.0.1 - - [02/Nov/2022 07:58:52] "POST /predict HTTP/1.1" 200 -
* History restored
Microsoft Windows [Version 10.0.19044.2130]
(c) Microsoft Corporation. All rights reserved.
Microsoft Windows [Version 10.0.19044.2130]
(c) Microsoft Corporation. All rights reserved.
C:\Users\kgaru\Desktop\ckd final>c:\users\kgaru\anaconda3\scripts\activate
(base) C:\Users\kgaru\Desktop\ckd final>conda activate deployment
(deployment) C:\Users\kgaru\Desktop\ckd final>
```

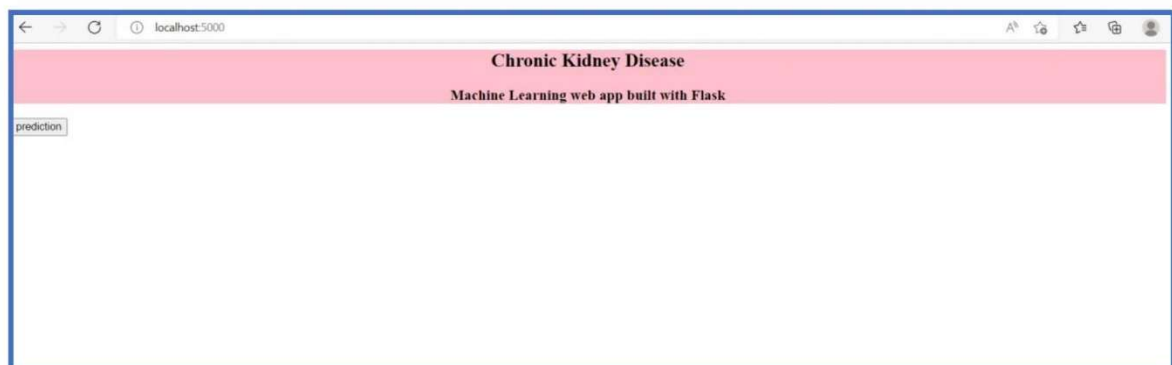
```
Microsoft Windows [Version 10.0.19044.2130]
(c) Microsoft Corporation. All rights reserved.

C:\Users\kgaru\Desktop\ckd final>c:\users\kgaru\anaconda3\scripts\activate

(base) C:\Users\kgaru\Desktop\ckd final>conda activate deployment

(deployment) C:\Users\kgaru\Desktop\ckd final>
```

```
WARNING: This is a development server. Do not use it in a production deployment. Use a production WSGI server instead.
* Running on http://localhost:5000
Press CTRL+C to quit
* Restarting with stat
c:\Users\kgaru\anaconda3\envs\deployment\lib\site-packages\sklearn\base.py:329: UserWarning: Trying to unpickle estimator DecisionTreeClassifier from
version 1.0.2 when using version 1.1.2. This might lead to breaking code or invalid results. Use at your own risk. For more info please refer to:
https://scikit-learn.org/stable/model_persistence.html#security-maintainability-limitations
warnings.warn(
c:\Users\kgaru\anaconda3\envs\deployment\lib\site-packages\sklearn\base.py:329: UserWarning: Trying to unpickle estimator RandomForestClassifier from
version 1.0.2 when using version 1.1.2. This might lead to breaking code or invalid results. Use at your own risk. For more info please refer to:
https://scikit-learn.org/stable/model_persistence.html#security-maintainability-limitations
warnings.warn(
* Debugger is active!
* Debugger PIN: 847-133-482
```



# TEST CASE 1: CKD

Chronic Kidney Disease

Machine Learning web app built with Flask

prediction

Chronic Kidney Disease

Machine Learning web app built with Flask

Blood Urea

90

Blood Glucose Random

157

Select Anemia

no

Select Coronary Artery Disease

yes

Select Pns Cell

yes

Select Red Blood Cell

no

Select Diabetes Mellitus

yes

Select Pedal Edema

yes

predict

Chronic Kidney Disease

Machine Learning web app built with Flask

[0]

**Medical Result**

Your Condition is abnormal.

You are having chronic kidney disease.

# TEST CASE 2: NO CKD

Chronic Kidney Disease

Machine Learning web app built with Flask

prediction

Chronic Kidney Disease

Machine Learning web app built with Flask

Blood Urea

Blood Glucose Random

Select Anemia

Select Coronary Artery Disease

Select Pus Cell

Select Red Blood Cell

Select Diabetes Mellitus

Select Pedal Edema

predict

Chronic Kidney Disease

Machine Learning web app built with Flask

[1]

Medical Result

Your Condition is normal.

You are not having chronic kidney disease.

# TEST CASE 3: CKD

Chronic Kidney Disease

Machine Learning web app built with Flask

prediction

Chronic Kidney Disease

Machine Learning web app built with Flask

Blood Urea 148

Blood Glucose Random 173

Select Anemia yes

Select Coronary Artery Disease yes

Select Pus Cell no

Select Red Blood Cell no

Select Diabetes Mellitus yes

Select Pedal Edema yes

predict

Chronic Kidney Disease

Machine Learning web app built with Flask

[0]

Medical Result

Your Condition is abnormal.

You are having chronic kidney disease.

# TEST CASE 4: NO CKD

Chronic Kidney Disease

Machine Learning web app built with Flask

prediction

Chronic Kidney Disease

Machine Learning web app built with Flask

Blood Urea

Blood Glucose Random

Select Anemia

Select Coronary Artery Disease

Select Pus Cell

Select Red Blood Cell

Select Diabetes Mellitus

Select Pedal Edema

predict

Chronic Kidney Disease

Machine Learning web app built with Flask

[1]

**Medical Result**

Your Condition is normal.

You are not having chronic kidney disease.

# TEST CASE 5: NO CKD

Chronic Kidney Disease

Machine Learning web app built with Flask

prediction

Chronic Kidney Disease

Machine Learning web app built with Flask

Blood Urea

Blood Glucose Random

Select Anemia

Select Coronary Artery Disease

Select Pus Cell

Select Red Blood Cell

Select Diabetes Mellitus

Select Pedal Edema

predict

Chronic Kidney Disease

Machine Learning web app built with Flask

[1]

Medical Result

Your Condition is normal.

You are not having chronic kidney disease.