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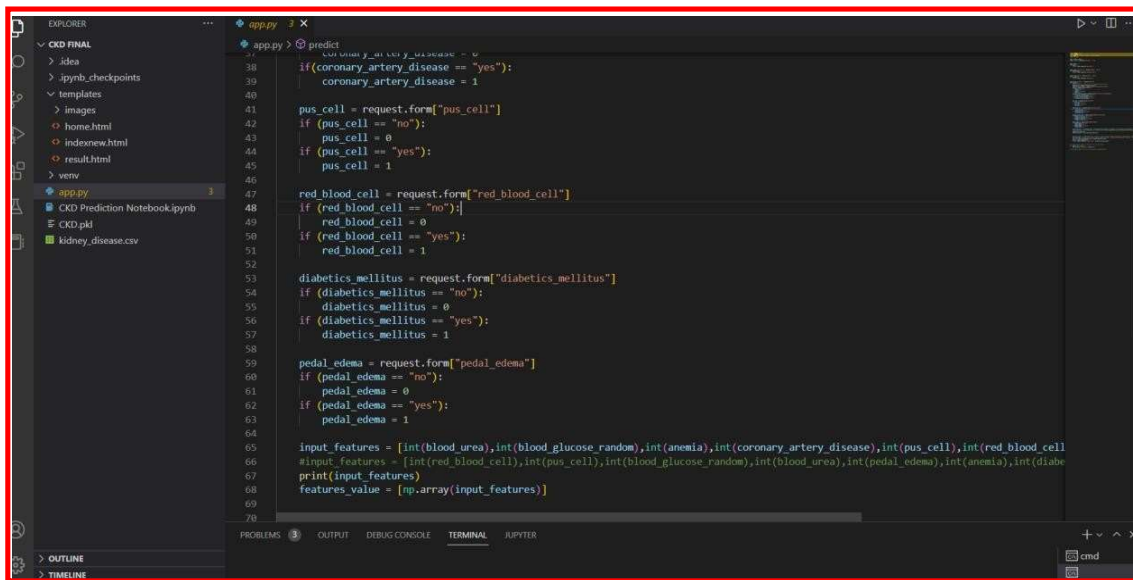
DATE: 25.11.2022

# EARLY DETECTION OF CHRONIC KIDNEY DISEASE

## SPRINT 3

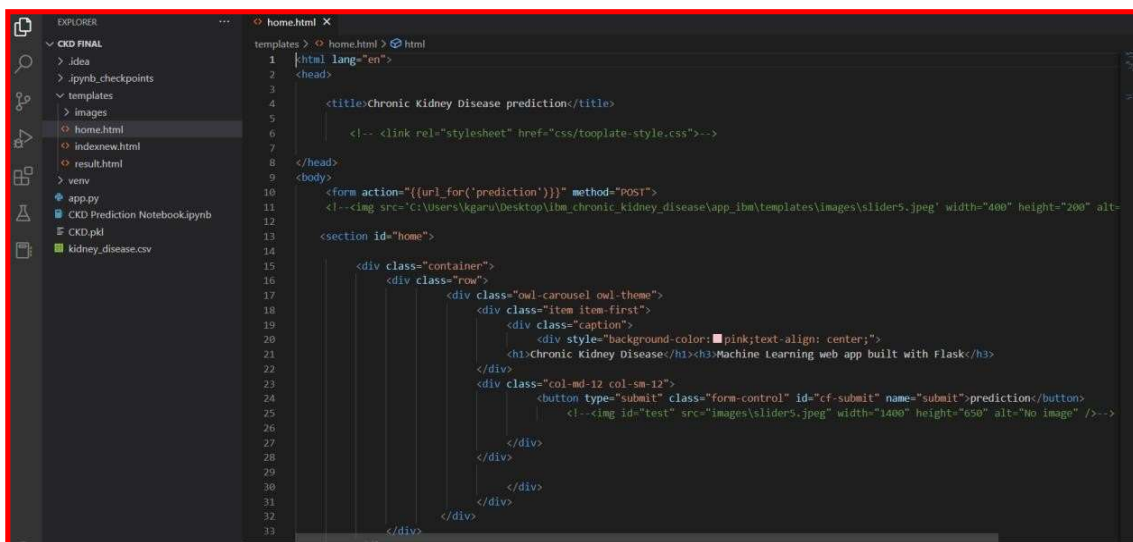
**In this sprint we are doing local deployment**

### App.py code screen

A screenshot of a code editor showing the app.py file. The left sidebar shows a file explorer with a project structure including 'CKD FINAL', 'templates', 'images', 'home.html', 'indexnew.html', 'result.html', 'venv', 'app.py', 'CKD Prediction Notebook.ipynb', 'CKD.pkl', and 'kidney\_disease.csv'. The main editor area shows the Python code for the app, which includes logic for handling form submissions for 'coronary\_artery\_disease', 'pus\_cell', 'red\_blood\_cell', 'diabetics\_mellitus', and 'pedal\_edema'. It also shows the preparation of input features for a machine learning model and the printing of the input features.

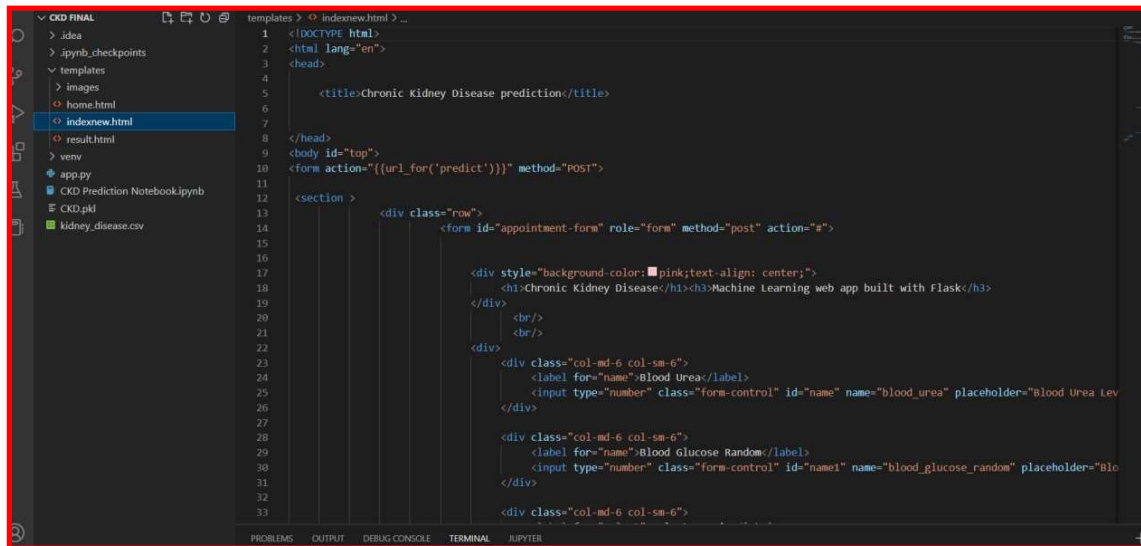
```
38 if(coronary_artery_disease == "yes"):
39     coronary_artery_disease = 1
40
41 pus_cell = request.form["pus_cell"]
42 if (pus_cell == "no"):
43     pus_cell = 0
44 if (pus_cell == "yes"):
45     pus_cell = 1
46
47 red_blood_cell = request.form["red_blood_cell"]
48 if (red_blood_cell == "no"):
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 input_features = [int(blood_urea),int(blood_glucose_random),int(anemia),int(coronary_artery_disease),int(pus_cell),int(red_blood_cell)
66 #input_features = [int(red_blood_cell),int(pus_cell),int(blood_glucose_random),int(blood_urea),int(pedal_edema),int(anemia),int(diabe
67 print(input_features)
68 features_value = np.array(input_features)
69
70
```

### HOME.HTML CODE SCREEN

A screenshot of a code editor showing the home.html file. The left sidebar shows the same file explorer as the previous screenshot. The main editor area shows the HTML code for the home page, which includes a form for predicting chronic kidney disease. The form has input fields for 'pus\_cell', 'red\_blood\_cell', 'diabetics\_mellitus', and 'pedal\_edema', and a 'submit' button. The code also includes a link to a stylesheet and a comment about the machine learning web app built with Flask.

```
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 <!--<img src='C:\Users\kgaru\Desktop\libm_chronic_kidney_disease\app\iba\templates\images\slider5.jpeg' width="400" height="200" alt=
13
14 <section id="home">
15
16 <div class="container">
17 <div class="row">
18 <div class="owl-carousel owl-theme">
19 <div class="item item-first">
20 <div class="caption">
21 <div style="background-color: #pink;text-align: center;">
22 <h1>Chronic Kidney Disease</h1><h3>Machine Learning web app built with Flask</h3>
23 </div>
24 <div class="col-md-12 col-sm-12">
25 <button type="submit" class="form-control" id="cf-submit" name="submit">prediction</button>
26 <!---->
27 </div>
28 </div>
29 </div>
30 </div>
31 </div>
32 </div>
33 </div>
```

## INDEXNEW.HTML CODE SCREEN



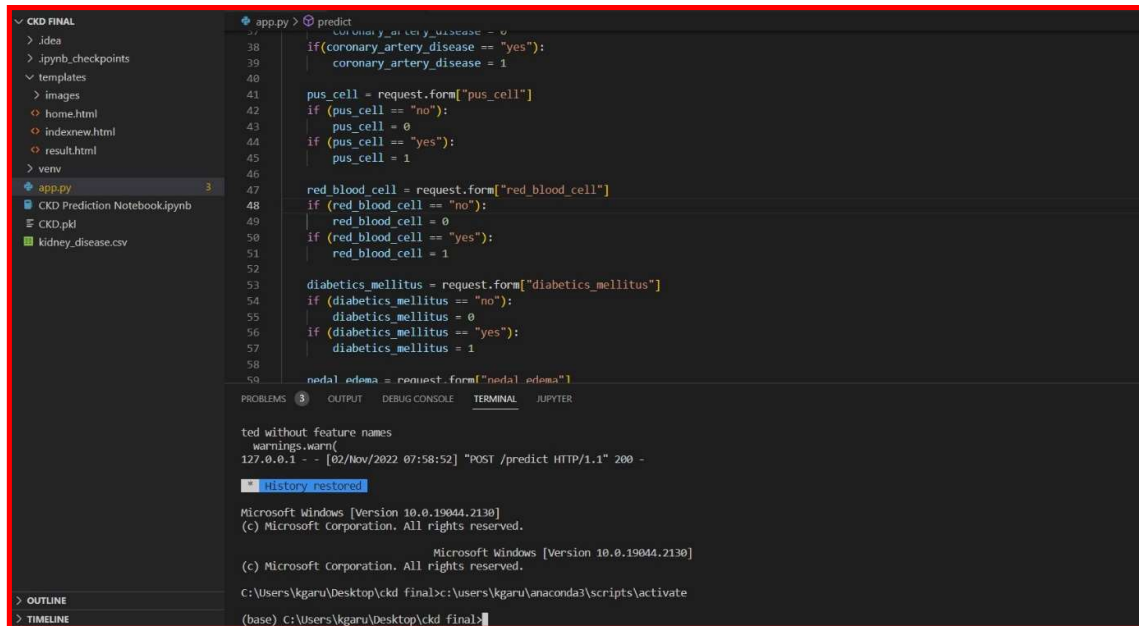
```
1 <!DOCTYPE html>
2 <html lang="en">
3 <head>
4
5     <title>Chronic Kidney Disease prediction</title>
6
7 </head>
8 <body id="top">
9     <form action="{{url_for('predict')}}" method="POST">
10
11     <section>
12
13         <div class="row">
14             <div class="col-md-6 col-sm-6">
15                 <div class="col-md-6 col-sm-6">
16                     <div class="col-md-6 col-sm-6">
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                         <div class="col-md-6 col-sm-6">
25                             <label for="name">Blood Urea</label>
26                             <input type="number" class="form-control" id="name" name="blood_urea" placeholder="Blood Urea Lev">
27                         </div>
28                         <div class="col-md-6 col-sm-6">
29                             <label for="name">Blood Glucose Random</label>
30                             <input type="number" class="form-control" id="name1" name="blood_glucose_random" placeholder="Blood Glucose Random">
31                         </div>
32                     </div>
33                 </div>
34             </div>
35         </div>
36     </section>
37 </body>
38 </html>
```

## 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                 <div class="col-md-8 col-sm-7">
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                         <div class="col-md-8 col-sm-7">
18                             <div class="col-md-8 col-sm-7">
19                                 <div style="background-color: #pink; text-align: center;">
20                                     <h2>Medical Result</h2>
21                                     <p>Your Condition is normal.</p>
22                                     <blockquote>You are not having chronic kidney disease.</blockquote>
23                                     
24                                 </div>
25                             </div>
26                         </div>
27                     </div>
28                 </div>
29             </div>
30         </div>
31     </section>
32 </body>
33 </html>
```

# LOCAL DEPLOYMENT CODE SCREEN



```
CKD FINAL
├── .idea
├── .ipynb_checkpoints
├── templates
│   ├── images
│   ├── home.html
│   ├── indexnew.html
│   ├── result.html
│   └── venv
├── app.py
├── CKD Prediction Notebook.ipynb
├── CKD.pkl
└── kidney_disease.csv

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PROBLEMS
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>
```

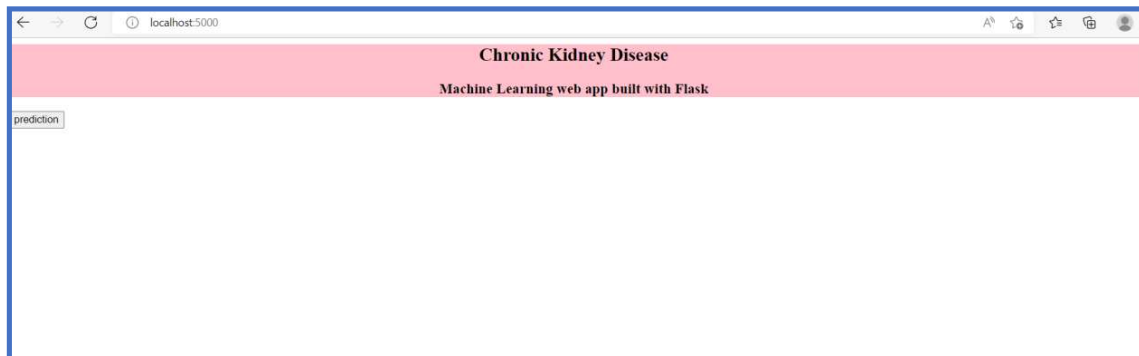
```
Microsoft Windows [Version 10.0.19044.2130]
(c) Microsoft Corporation. All rights reserved.

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 Pus 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 Urea46

Blood Glucose Random117

Select Anemia (no)

Select Coronary Artery Disease (no)

Select Pus Cell (no)

Select Red Blood Cell (no)

Select Diabetes Mellitus (no)

Select Pedal Edema (no)

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 Pts 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 

no

Select Coronary Artery Disease 

no

Select Pus Cell 

no

Select Red Blood Cell 

no

Select Diabetes Mellitus 

no

Select Pedal Edema 

no

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 Urea129

Blood Glucose Random99

Select Anemia

no

Select Coronary Artery Disease

no

Select Pus Cell

no

Select Red Blood Cell

no

Select Diabetes Mellitus

no

Select Pedal Edema

no

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.