

PNT2022TMID27011

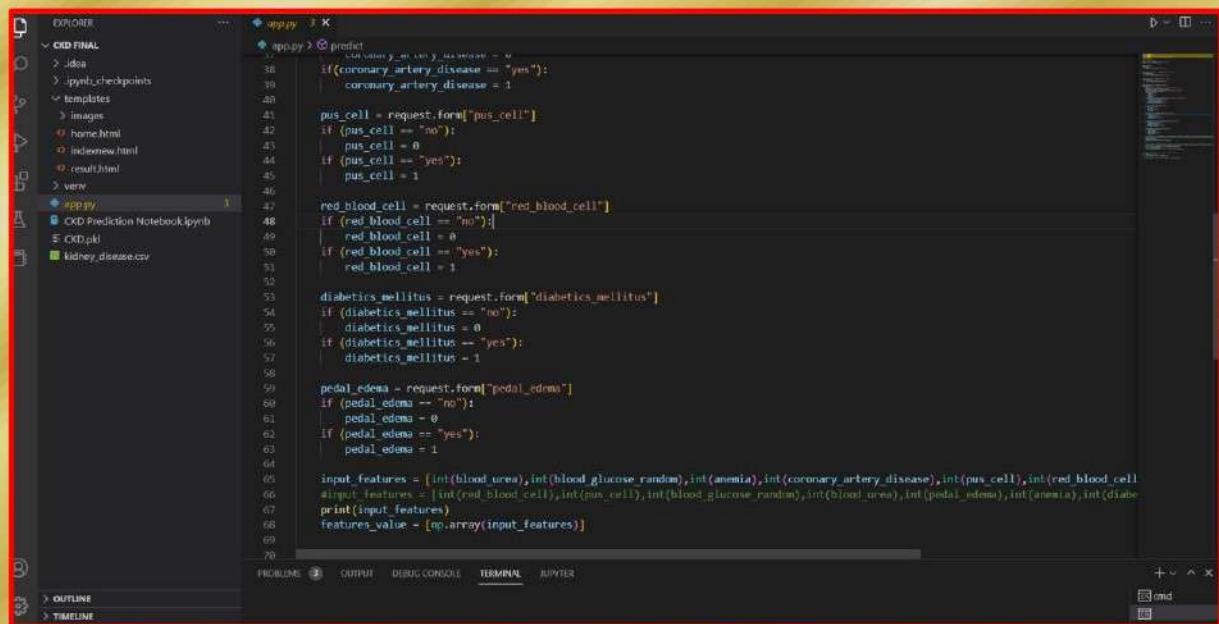
DATE: 12.11.2022

EARLY DETECTION OF CHRONIC KIDNEY DISEASE

SPRINT 3

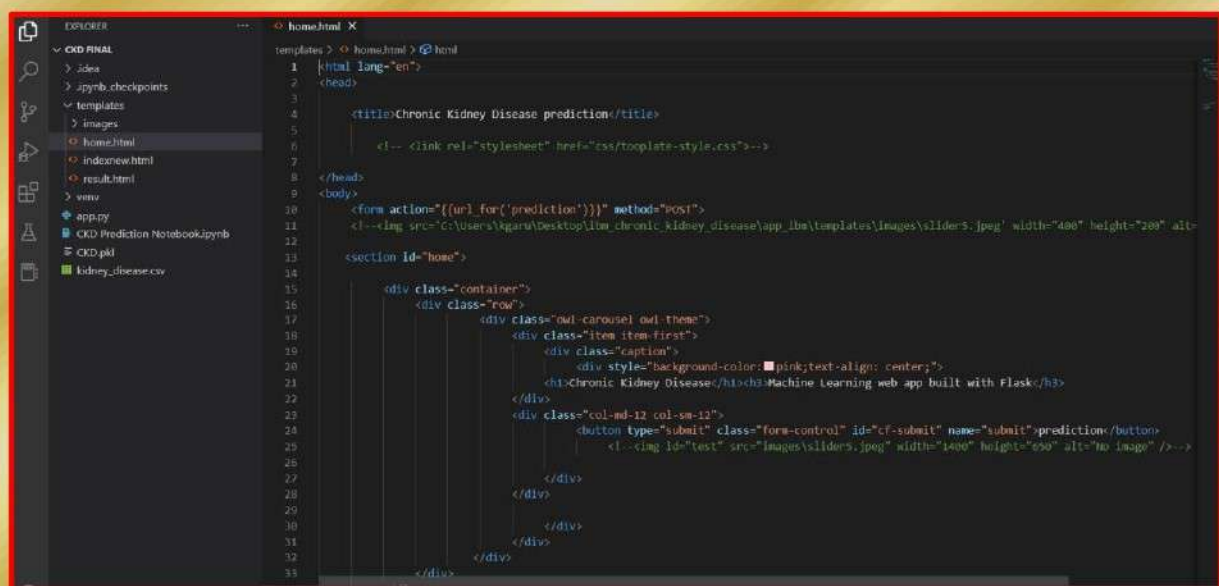
In this sprint we are doing local deployment

App.py code screen



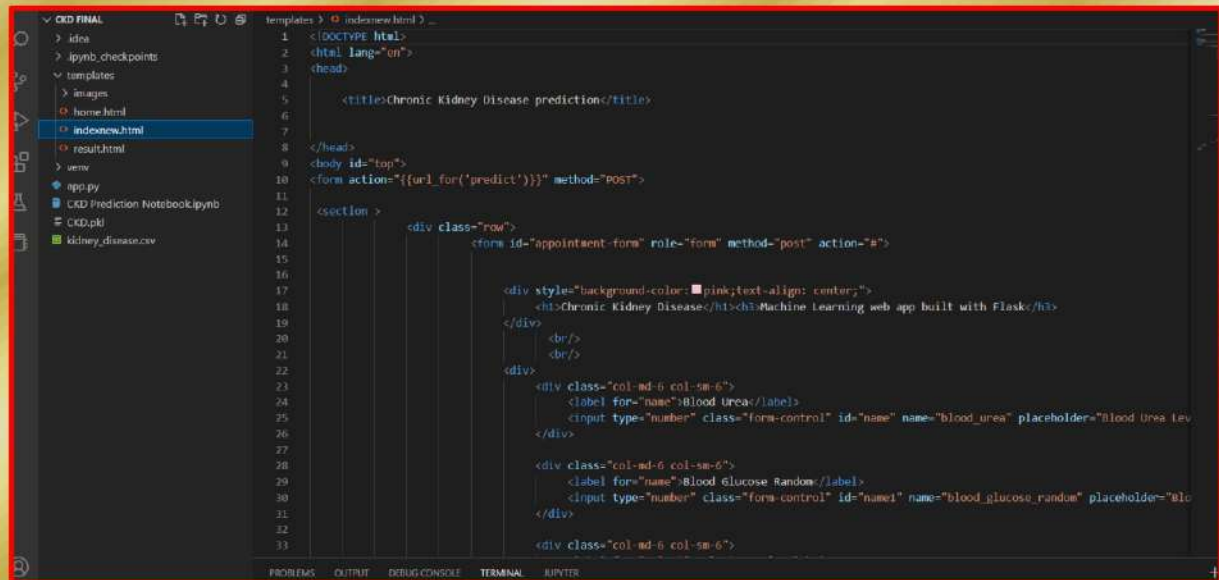
```
1 from flask import Flask, request, jsonify, render_template
2 app = Flask(__name__)
3
4 # Predict function
5 def predict(request):
6     if (request.json.get('coronary_artery_disease') == "yes"):
7         coronary_artery_disease = 1
8     else:
9         coronary_artery_disease = 0
10
11     pus_cell = request.json.get('pus_cell')
12     if (pus_cell == "no"):
13         pus_cell = 0
14     if (pus_cell == "yes"):
15         pus_cell = 1
16
17     red_blood_cell = request.json.get('red_blood_cell')
18     if (red_blood_cell == "no"):
19         red_blood_cell = 0
20     if (red_blood_cell == "yes"):
21         red_blood_cell = 1
22
23     diabetics_mellitus = request.json.get('diabetics_mellitus')
24     if (diabetics_mellitus == "no"):
25         diabetics_mellitus = 0
26     if (diabetics_mellitus == "yes"):
27         diabetics_mellitus = 1
28
29     pedal_edema = request.json.get('pedal_edema')
30     if (pedal_edema == "no"):
31         pedal_edema = 0
32     if (pedal_edema == "yes"):
33         pedal_edema = 1
34
35     input_features = [int(blood_urea), int(blood_glucose_random), int(anemia), int(coronary_artery_disease), int(pus_cell), int(red_blood_cell)]
36     input_features = [int(red_blood_cell), int(pus_cell), int(blood_glucose_random), int(blood_urea), int(pedal_edema), int(anemia), int(diabetics_mellitus)]
37     print(input_features)
38     features_value = np.array(input_features)
```

HOME.HTML CODE SCREEN



```
1 <html lang="en">
2 <head>
3
4 <title>Chronic Kidney Disease prediction</title>
5
6 <!-- <link rel="stylesheet" href="css/template-style.css"> -->
7
8 </head>
9 <body>
10
11 <form action="{{url_for('prediction')}}" method="POST">
12 <!---->
13
14 <section id="home">
15
16 <div class="container">
17 <div class="row">
18 <div class="col-md-12 col-sm-12">
19 <div class="owl-carousel owl-theme">
20 <div class="item item-first">
21 <div class="caption">
22 <div style="background-color: #f0f0f0; text-align: center; padding: 5px;>
23 <h1>Chronic Kidney Disease</h1><h2>Machine Learning web app built with Flask</h2>
24 </div>
25 <div class="col-md-12 col-sm-12">
26 <button type="submit" class="form-control" id="cf-submit" name="submit">prediction</button>
27 <!---->
28 </div>
29 </div>
30 </div>
31 </div>
32 </div>
33 </div>
```

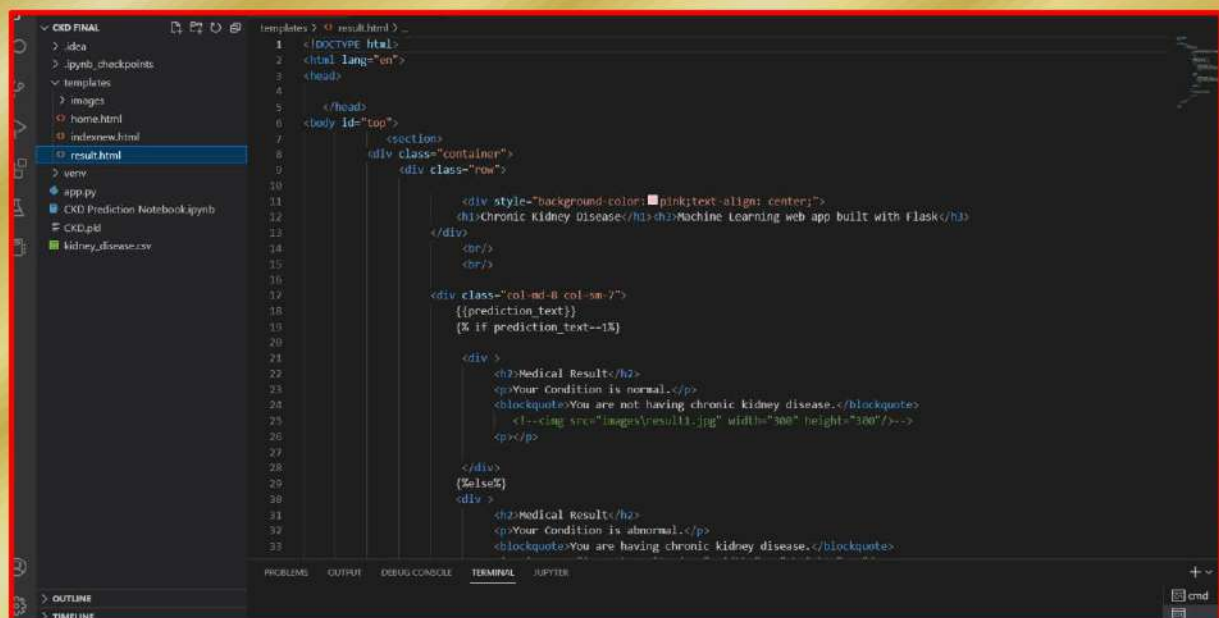

INDEXNEW.HTML CODE SCREEN



The screenshot shows the code for indexnew.html in a web editor. The file explorer on the left shows a project named 'CKD FINAL' with files like idna, .ipynb_checkpoints, templates, images, home.html, indexnew.html, result.html, and venv. The code in the editor is as follows:

```
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
14     <div class="row">
15
16         <form id="appointment-form" role="form" method="post" action="#">
17
18             <div style="background-color: #pink;text-align: center;">
19                 <h1>Chronic Kidney Disease</h1><h3>Machine Learning web app built with Flask</h3>
20             </div>
21             <br/>
22             <br/>
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
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="Blo
31             </div>
32
33             <div class="col-md-6 col-sm-6">
```

RESULT.HTML CODE SCREEN



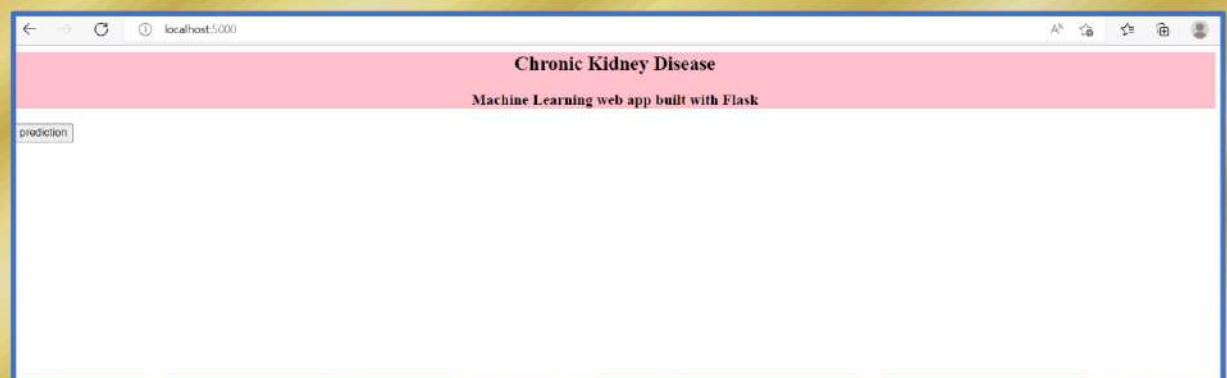
The screenshot shows the code for result.html in a web editor. The file explorer on the left shows the same project structure as the previous screenshot. The code in the editor is as follows:

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


The screenshot displays a Jupyter Notebook environment with a file explorer on the left showing a project named 'CKD FINAL'. The main area contains a Python script in a cell named 'app.py' that defines a Flask application for predicting kidney disease. The script uses `request.get_json()` to receive input and `request.json()` to access it. It predicts outcomes for `coronary_artery_disease`, `pus_cell`, `red_blood_cell`, `diabetes_mellitus`, and `nodal_adema` based on binary inputs. The terminal at the bottom shows the command `curl -X POST http://127.0.0.1:2000/predict` and the output `ted without feature names\nwarnings.warn(\n127.0.0.1 - - [02/08/2022 07:58:52] \"POST /predict HTTP/1.1\" 200 -\n`.

```
(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 Pectal 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 | no ▾
Select Coronary Artery Disease | no ▾
Select Pus Cell | no ▾
Select Red Blood Cell | no ▾
Select Diabetes Mellitus | no ▾
Select Pedal Edema | no ▾

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
Blood Glucose Random
Select Anemia
Select Coronary Artery Disease
Select Pos Cell
Select Red Blood Cell
Select Diabetics Mellitus
Select Pedal Edema

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 Anaemia
Select Coronary Artery Disease
Select Pus Cell
Select Red Blood Cell
Select Diabetes Mellitus
Select Pedal Edema

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 Anaemia

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.