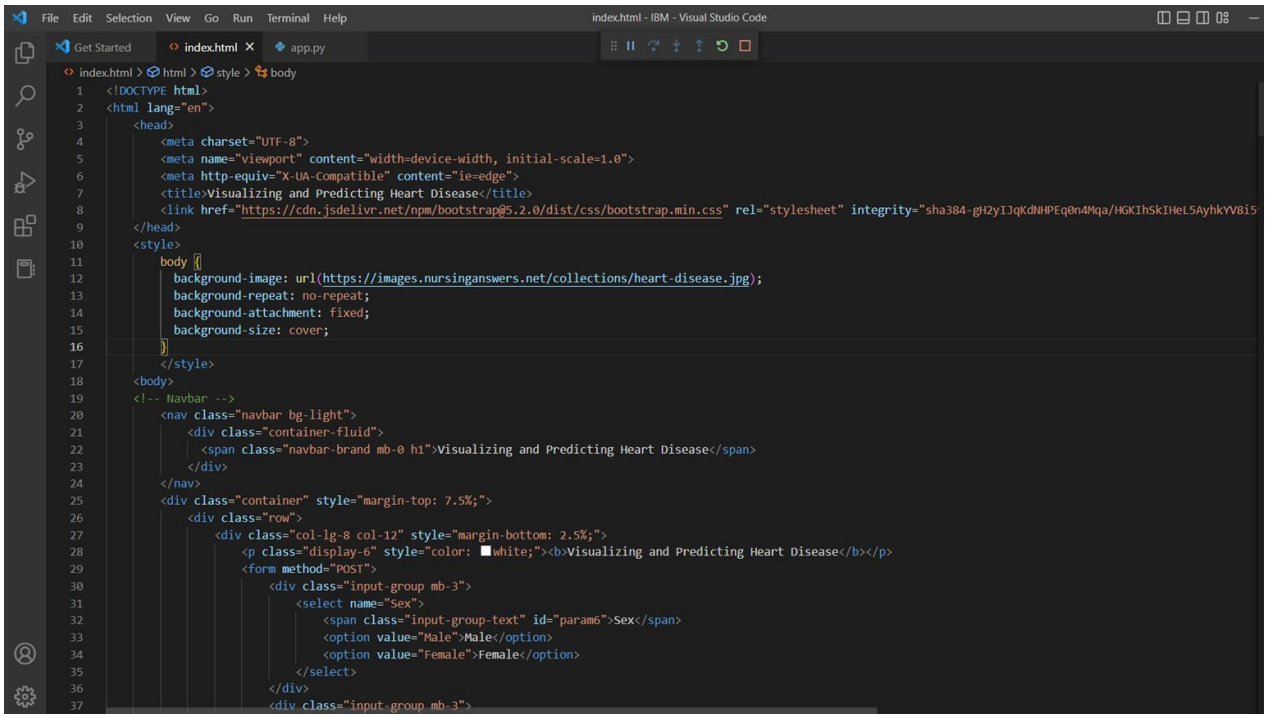
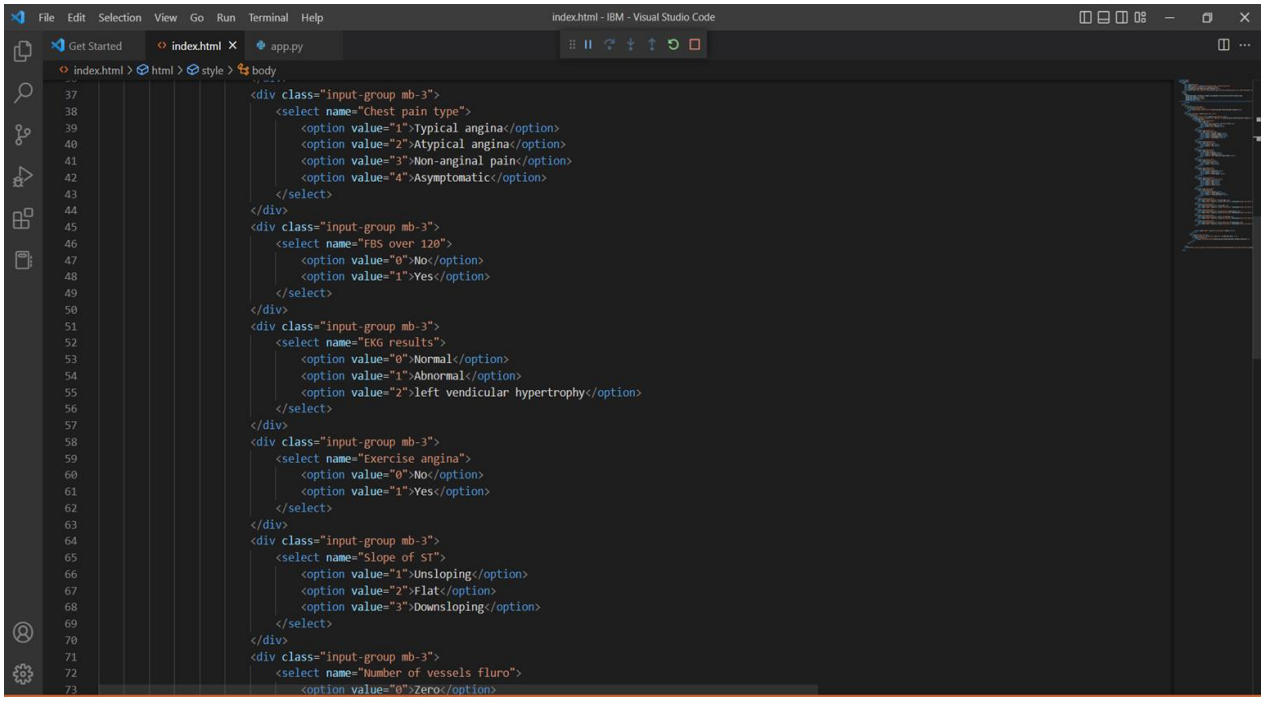
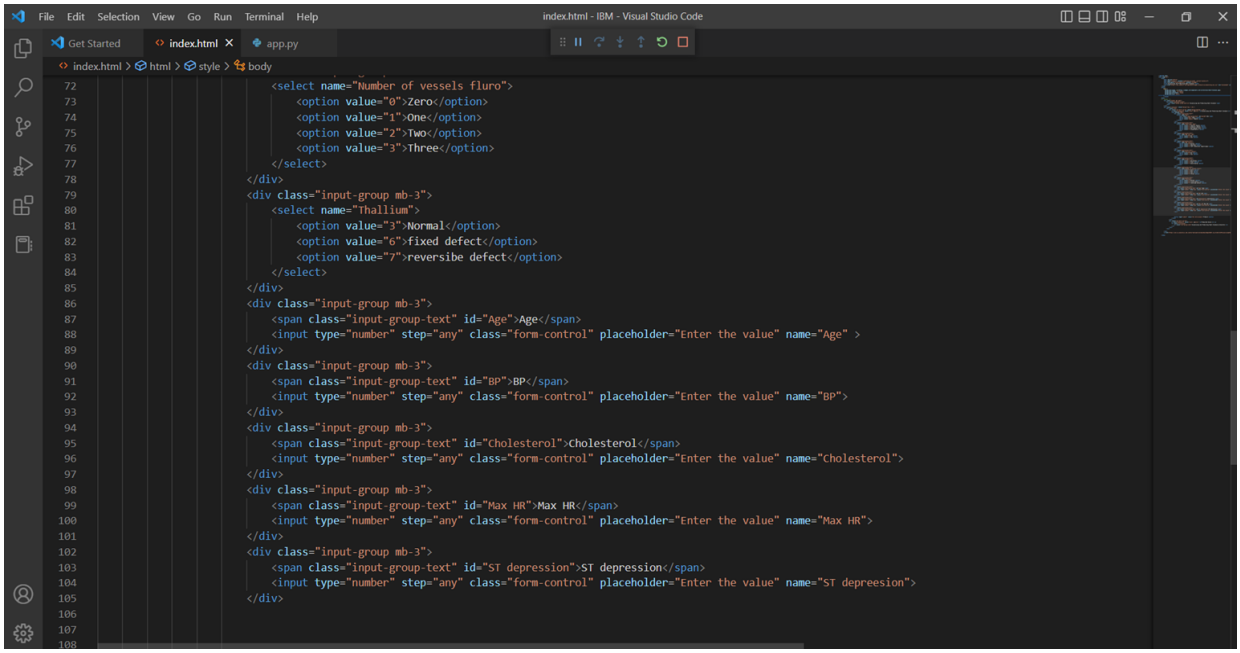
Sprint 4

Date	18 November 2022
Team ID	PNT2022TMID52957
Project Name	Visualizing and Predicting Heart Diseases with an Interactive Dashboard

Source Code for HTML






File Edit Selection View Go Run Terminal Help
index.html - IBM - Visual Studio Code
Get Started
index.html
app.py
index.html > html > style > body
<select name="Number of vessels fluro">
<option value="0">Zero</option>
<option value="1">One</option>
<option value="2">Two</option>
<option value="3">Three</option>
</select>

<select name="Thallium">
<option value="3">Normal</option>
<option value="6">fixed defect</option>
<option value="7">reversibe defect</option>
</select>

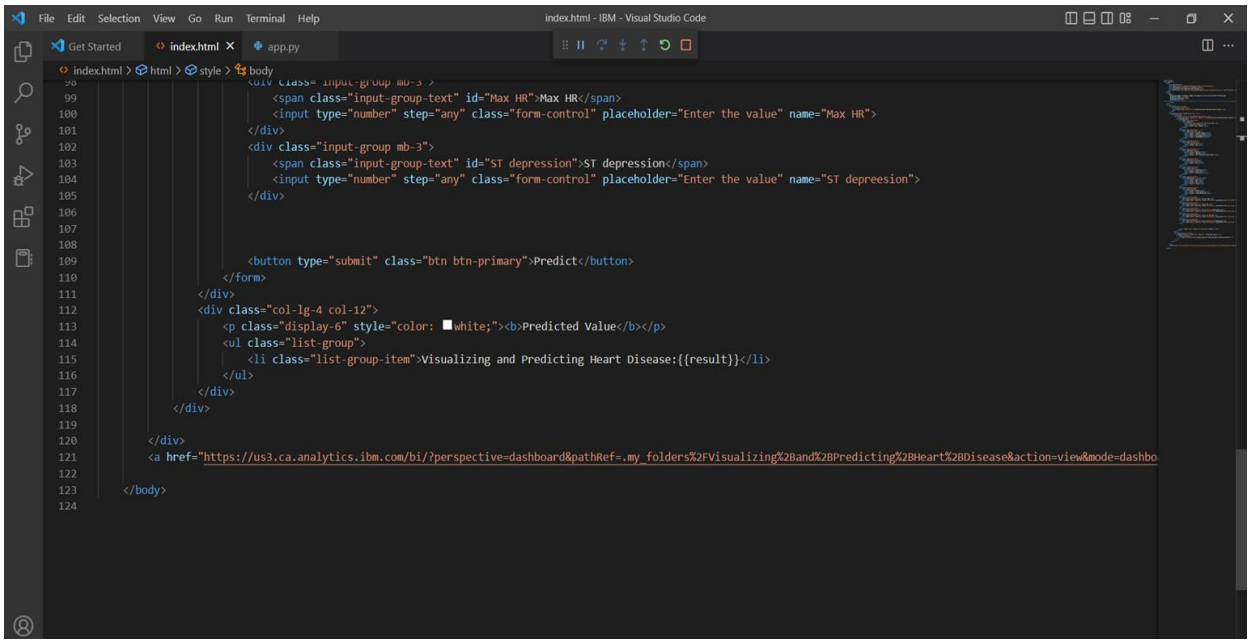
Age
<input type="number" step="any" class="form-control" placeholder="Enter the value" name="Age" >

BP
<input type="number" step="any" class="form-control" placeholder="Enter the value" name="BP">

Cholesterol
<input type="number" step="any" class="form-control" placeholder="Enter the value" name="Cholesterol">

Max HR
<input type="number" step="any" class="form-control" placeholder="Enter the value" name="Max HR">

ST depression
<input type="number" step="any" class="form-control" placeholder="Enter the value" name="ST depreesion">


File Edit Selection View Go Run Terminal Help
index.html - IBM - Visual Studio Code
Get Started
index.html
app.py
index.html > html > style > body
Max HR
<input type="number" step="any" class="form-control" placeholder="Enter the value" name="Max HR">

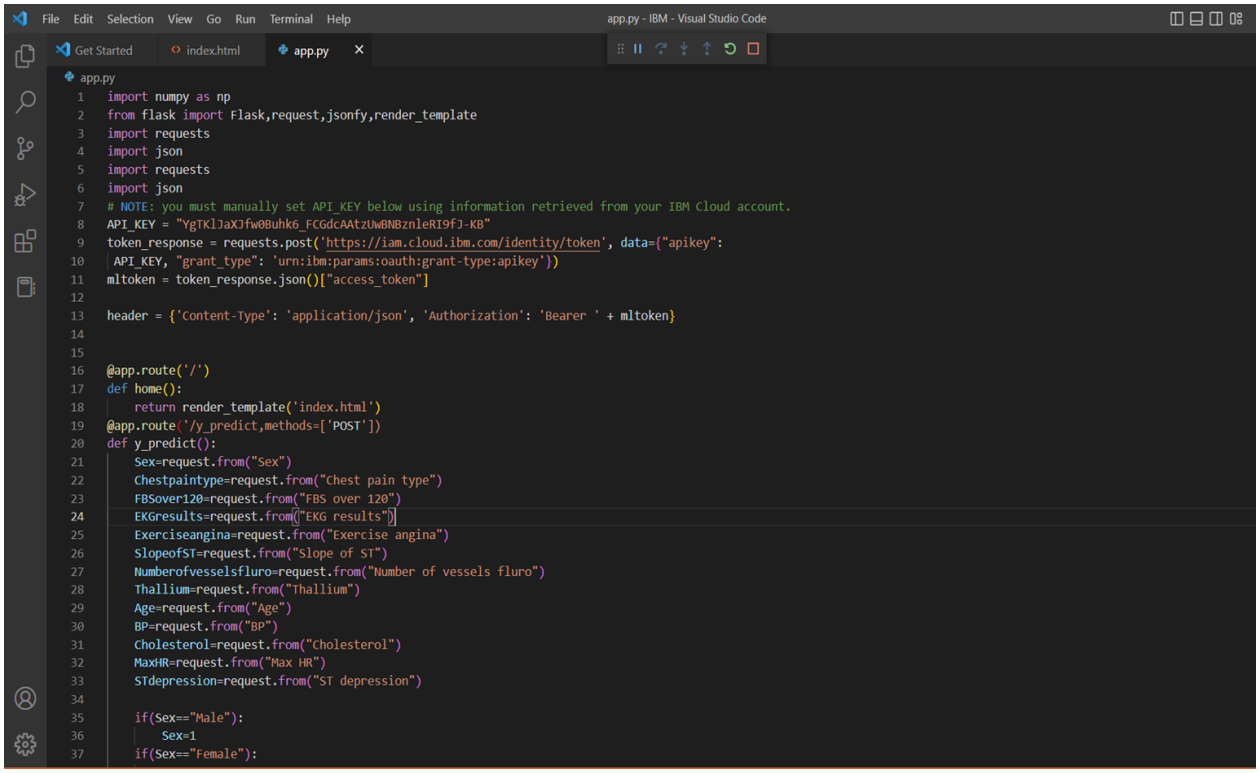
ST depression
<input type="number" step="any" class="form-control" placeholder="Enter the value" name="ST depreesion">

<button type="submit" class="btn btn-primary">Predict</button>
</form>

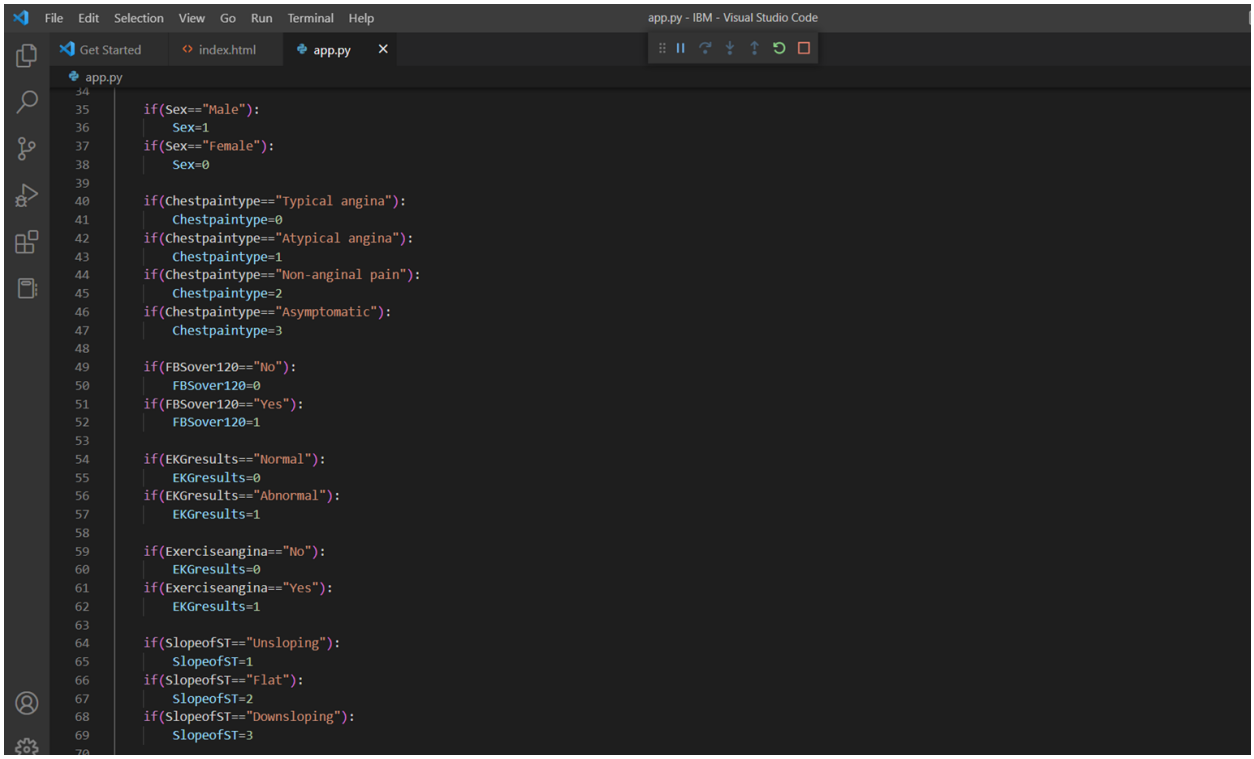
Predicted Value
<ul class="list-group">
<li class="list-group-item">Visualizing and Predicting Heart Disease:{{result}}

<a href="https://us3.ca.analytics.ibm.com/bi/?perspective=dashboard&pathRef=.my_folders%2FVisualizing%2Band%2BPredicting%2BHeart%2BDisease&action=view&mode=dashbo
</body>

Source code for APP.py



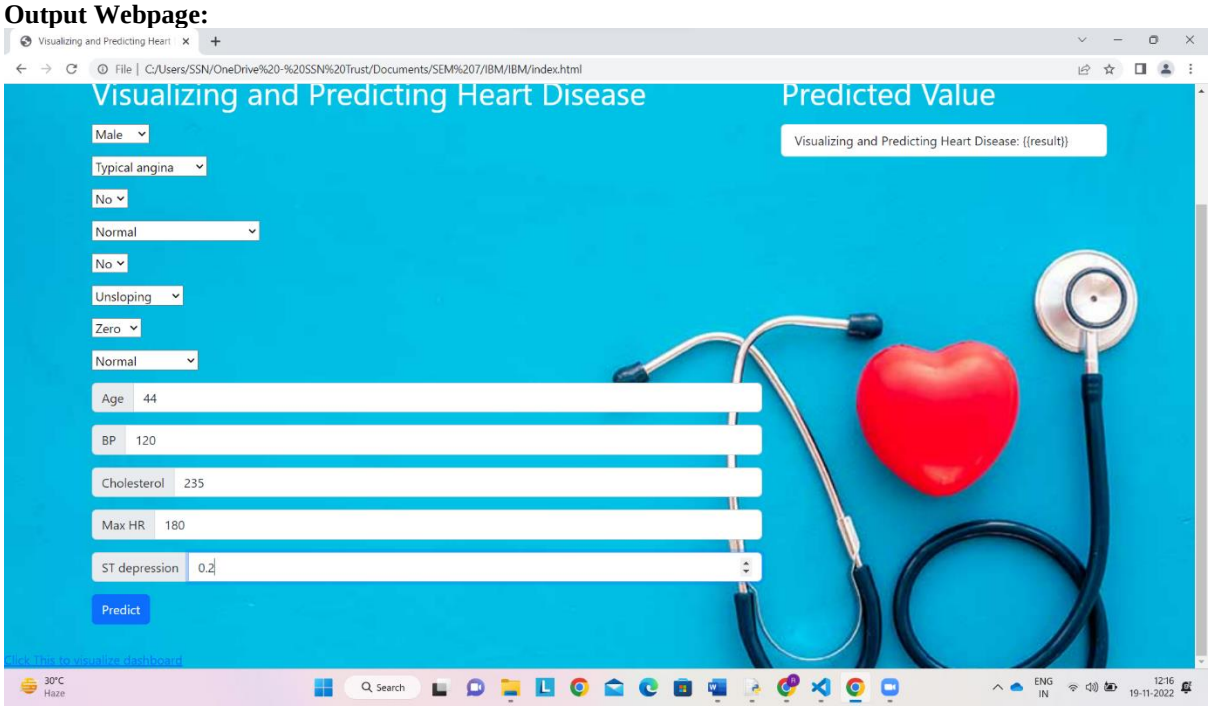
```python
import numpy as np
from flask import Flask,request,jsonfy,render_template
import requests
import json
import requests
import json
# NOTE: you must manually set API_KEY below using information retrieved from your IBM Cloud account.
API_KEY = "YgTKlJaXJfw0Buhk6_FCGdcAAtzUwBNBznleRI9fJ-KB"
token_response = requests.post('https://iam.cloud.ibm.com/identity/token', data={"apikey":
 API_KEY, "grant_type": 'urn:ibm:params:oauth:grant-type:apikey'})
mltoken = token_response.json()["access_token"]

header = {'Content-Type': 'application/json', 'Authorization': 'Bearer ' + mltoken}


@app.route('/')
def home():
    return render_template('index.html')
@app.route('/y_predict,methods=['POST'])
def y_predict():
    Sex=request.from("Sex")
    Chestpaintype=request.from("Chest pain type")
    FBSover120=request.from("FBS over 120")
    EKGresults=request.from("EKG results")
    Exerciseangina=request.from("Exercise angina")
    SlopeofST=request.from("Slope of ST")
    Numberofvesselsfluro=request.from("Number of vessels fluro")
    Thallium=request.from("Thallium")
    Age=request.from("Age")
    BP=request.from("BP")
    Cholesterol=request.from("Cholesterol")
    MaxHR=request.from("Max HR")
    STdepression=request.from("ST depression")

    if(Sex=="Male"):
        Sex=1
    if(Sex=="Female"):
```



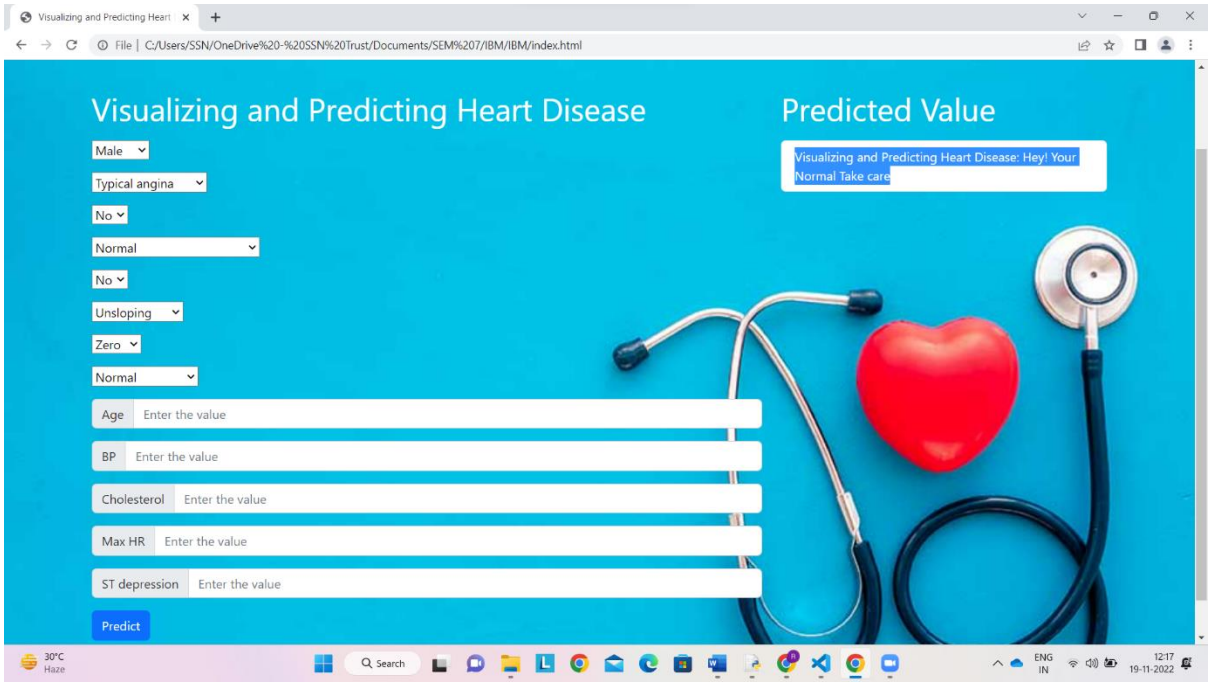
```python
    if(Sex=="Male"):
        Sex=1
    if(Sex=="Female"):
        Sex=0

    if(Chestpaintype=="Typical angina"):
        Chestpaintype=0
    if(Chestpaintype=="Atypical angina"):
        Chestpaintype=1
    if(Chestpaintype=="Non-anginal pain"):
        Chestpaintype=2
    if(Chestpaintype=="Asymptomatic"):
        Chestpaintype=3

    if(FBSover120=="No"):
        FBSover120=0
    if(FBSover120=="Yes"):
        FBSover120=1

    if(EKGresults=="Normal"):
        EKGresults=0
    if(EKGresults=="Abnormal"):
        EKGresults=1

    if(Exerciseangina=="No"):
        EKGresults=0
    if(Exerciseangina=="Yes"):
        EKGresults=1

    if(SlopeofST=="Unsloping"):
        SlopeofST=1
    if(SlopeofST=="Flat"):
        SlopeofST=2
    if(SlopeofST=="Downsloping"):
        SlopeofST=3
```

```
    if(Numberofvesselsfluro="Zero"):
        Numberofvesselsfluro=0
    if(Numberofvesselsfluro="One"):
        Numberofvesselsfluro=1
    if(Numberofvesselsfluro="Two"):
        Numberofvesselsfluro=2
    if(Numberofvesselsfluro="Three"):
        Numberofvesselsfluro=3

    if(Thallium=="Normal"):
        Tallium=3
    if(Thallium=="fixed defect"):
        Tallium=6
    if(Thallium=="reversibe defect"):
        Tallium=7

    t=[[int(Sex),int(Chestpaintype),int(FBSover120),
    int(EKGresults),int(Exerciseangina)
    ,int(SlopeofST),int(Numberofvesselsfluro),
    int(Tallium),int(Age),int(BP)
    ,int(Cholesterol),int(MaxHR),int(STdepression)]]
    print(t)
    payload_scoring={"input_data":[{"field":[["Sex","Chestpaintype","FBSover120","EKGresults","Exerciseangina","SlopeofST","Numberofvesselsfluro"
    ,"Tallium","Age","BP","Cholesterol","MaxHR","STdepression"],values:t]}]}

    response_scoring = requests.post('https://us-south.ml.cloud.ibm.com/ml/v4/deployments/2102715e-0bc9-42dd-9036-6a7eaf97aed5/predictions?version=2022-11-18', json=paylo
    headers={'Authorization': 'Bearer ' + mltoken})
    print("Scoring response")
    predictions=response_scoring.json()
    pred=predictions['predictions'][0]['values'][0][0]
    if(pred =='Presence'):
        print("You have high probability to heart Disease Kindly approach a Doctor Take care")
    else:
        print("Hey! Your Normal Take care")
    return render_template('index.html',prediction_text=output)
if __name__=="__main__":
```

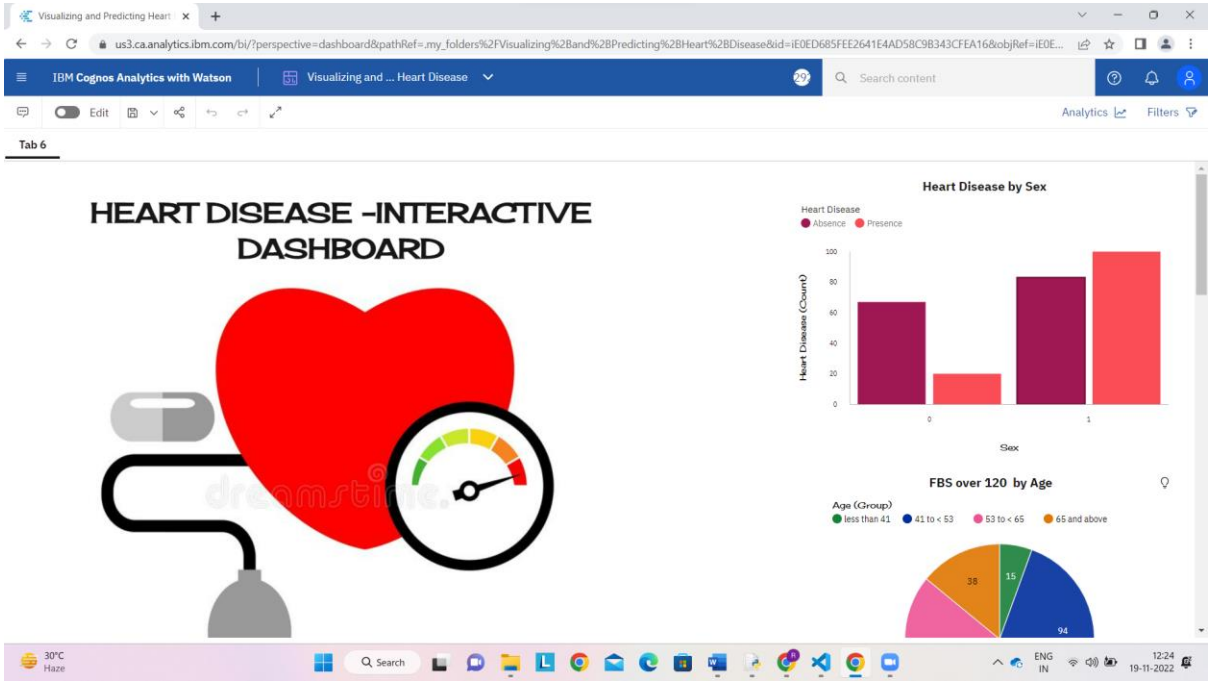
Output Webpage:

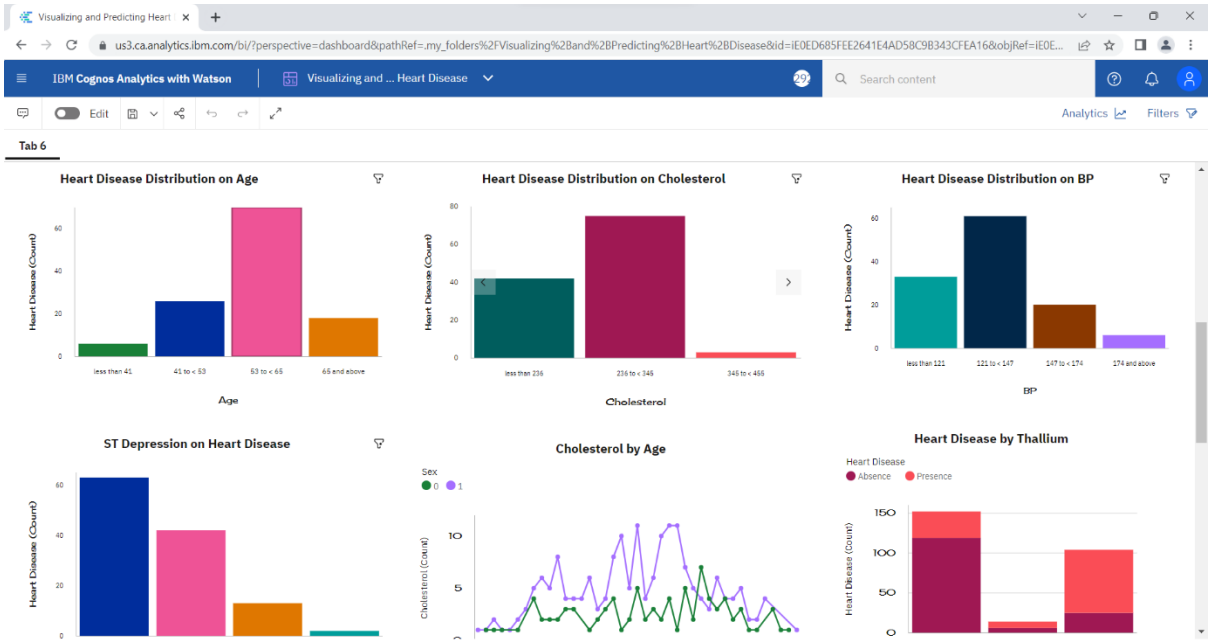


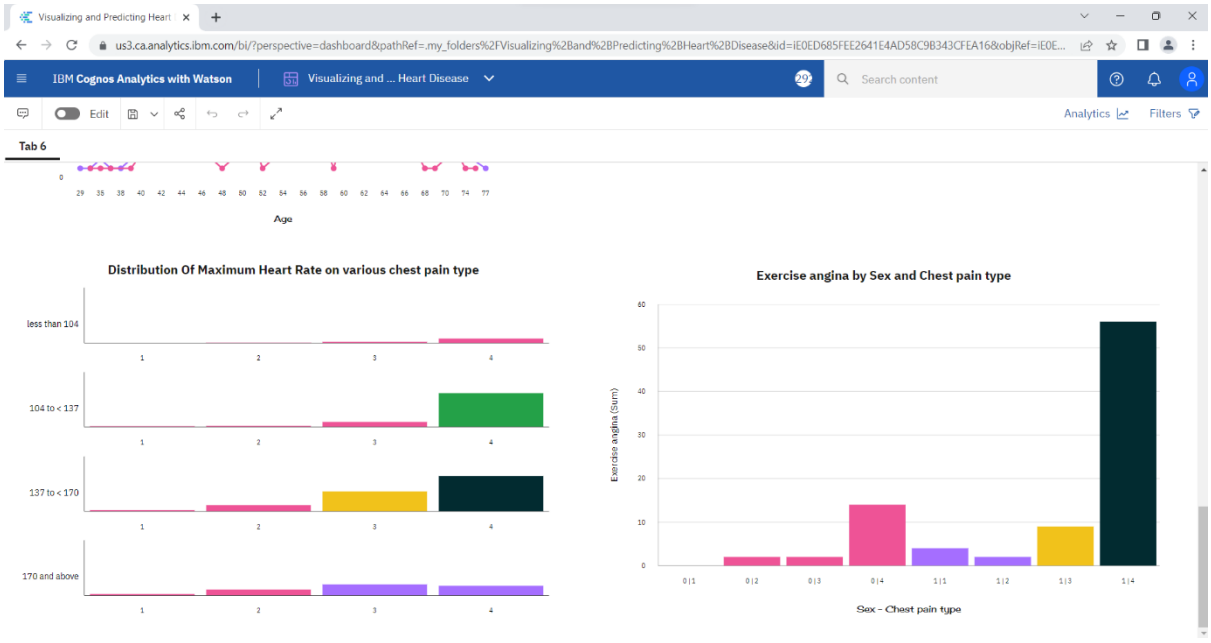
Sample Result for prediction By clicking Predict Button



Sample Result for Dashboard By click the link click this to visualize Dashboard




Visualizing and Predicting Heart
IBM Cognos Analytics with Watson
Visualizing and ... Heart Disease
Search content
Edit
Analytics
Filters
Tab 6
Heart Disease Distribution on Age
Heart Disease (Count)
less than 41
41 to < 53
53 to < 65
65 and above
Age
Heart Disease Distribution on Cholesterol
less than 236
236 to < 346
346 to < 456
Cholesterol
Heart Disease Distribution on BP
less than 121
121 to < 147
147 to < 174
174 and above
BP
ST Depression on Heart Disease
Cholesterol by Age
Sex
Cholesterol (Count)
Heart Disease by Thallium
Heart Disease
Absence
Presence


Visualizing and Predicting Heart
IBM Cognos Analytics with Watson
Visualizing and ... Heart Disease
Search content
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Tab 6
Age
Distribution Of Maximum Heart Rate on various chest pain type
less than 104
104 to < 137
137 to < 170
170 and above
Exercise angina by Sex and Chest pain type
Exercise angina (Sum)
Sex - Chest pain type