Predict Heart Failure

Project Description:

Cardiovascular diseases (CVDs) are the number 1 cause of death globally, taking an estimated 17.9 million lives each year, which accounts for 31% of all deaths worldwide. Heart failure is a common event caused by CVDs and this dataset contains 9 features that can be used to predict mortality by heart failure.

In this project, I have built a model using Auto AI and built a web application for predicting the heart failure. The model has been deployed in the IBM cloud to get scoring endpoint which can be used as API in web app building. The model prediction has showcased on User Interface using Node-Red as web app.

1. Services Used:

1. IBM Watson Studio
2. Auto AI
3. IBM Watson Machine Learning
4. Node-RED
5. IBM Cloud Object Storage

2. Download the patient dataset from Kaggle Web site.

Data set details:

1. Average heart beats per minute
2. Palpitations per day
3. Cholesterol
4. Body Mass Index
5. Age
6. Sex
7. Family history
8. Smoker last 5 years
9. Exercise min per week

Based on the 9 features, we need to predict the HEARTFAILURE of Y or N.

Y – Heart Failure (Yes)

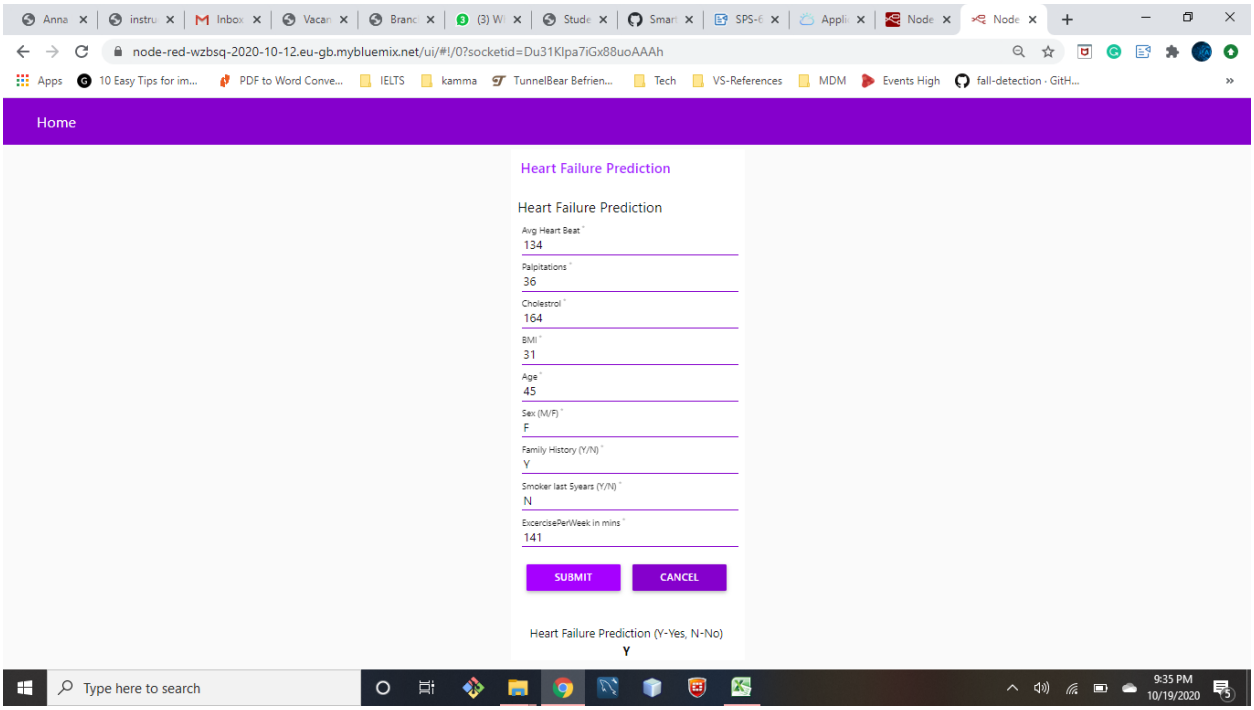
N – No Heart Failure (No)

3. Project Description:

In this project, our machine learning model predicted Heart failure of Yes or No, based on the 9 parameters given in the dataset. Here we have used 3 folds cross validation method to split training and test data. We have split the data set in to Training data - 90% and Test data - 10%.

The machine learning model has chosen Binary Classification as Prediction type and Accuracy as Optimized metric based on the output parameter. Once the Experiment Results completed we saved the high accuracy model. Then we deployed our model using the 'online' deployment type and test our predicted data.

Futhermore, we started Node-Red service and imported the Json file as New flow. We have installed Node-Red dashboard for unavailable nodes. Here we have designed the form for User Interface and changed the API key and variables in the pre-token node. We have given Endpoint in the http request node. Then, we deployed our flow, checked the debug messages. Finally, we have tested our data in User Interface and predicted the heart failure successfully.


node-red-wzbsq-2020-10-12.eu-gb.mybluemix.net/ui/#!/0?socketid=Du31KIpa7iGx88uoAAAh
Home
Heart Failure Prediction
Heart Failure Prediction
Avg Heart Beat *
134
Palpitations *
36
Cholestrol *
164
BMI *
31
Age *
45
Sex (M/F) *
F
Family History (Y/N) *
Y
Smoker last 5years (Y/N) *
N
ExcercisePerWeek in mins *
141
SUBMIT
CANCEL
Heart Failure Prediction (Y-Yes, N-No)
Y
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