Predict Heart Failure using IBM Auto AI Service

Project Introduction:

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 .

In this project, we will build a model using Auto AI and build a web application where we can get the prediction of heart failure.

Architecture Used:
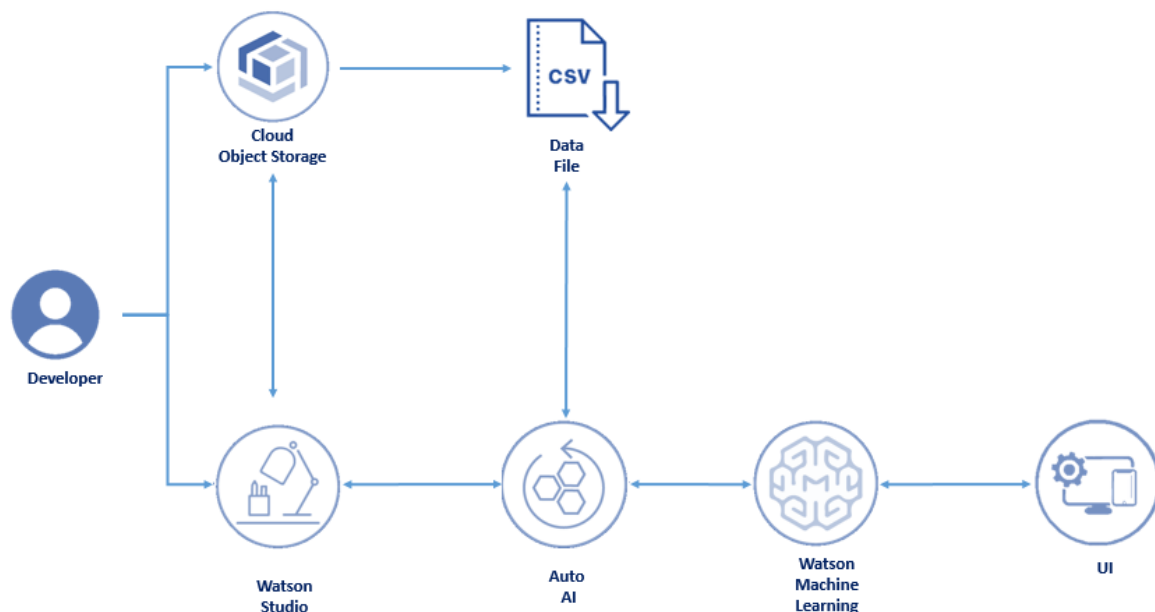
Services Required:

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

Procedure used for creating and deploying the project

1. Building model using Auto AI

Data Collection- Data Collection was done in form of dataset in .csv extension from the GitHub Repository. The dataset consist of 9 parameters based on which prediction will be made.

Login in to IBM account- Then an IBM cloud account was created and we are login into that account for further activities.

Create Watson Studio Service- A Watson studio service was created.

Create project in Watson studio- Then a project was created in the Watson studio service.

Adding Auto AI to project- Then a Auto AI service was added to the project already created.

Creating Watson Machine Learning instance- Then a Watson Machine Learning Instance was created and then we associated this instance to the project.

Adding Dataset- Then we loaded the dataset to the cloud object storage.

Running the Experiment- We selected the prediction parameter which was HEARTFAILURE according to the dataset and ran the experiment. Once the model was built, we saved the model that got high accuracy score.

Deploying the Model- We deployed and tested the model in Watson studio by creating a deployment space. We got a API link which would be used in the App integration. The value of API link was
https://eu-gb.ml.cloud.ibm.com/ml/v4/deployments/5d6feb96-9642-43b6-96aa-b0606146ebdd/predictions

2. Application Building

Creating Node Red Service- Inorder to use node-red we created node-red service by going to the catalog. Then we went to node-red from our dashboard by going to cloud foundry apps. Then a workflow was created keeping in mind the parameters in the dataset.

Integrate Node-RED to model- We integrated node-red to the model by calling the API of the model. Then we installed the dashboard nodes from the manage pallete and created UI accordingly by making use of form nodes, function nodes, debugg nodes and text nodes.Then we used the HTTP request nodes to request the model API which was generated when the model was built.

3. Conclusion

Then we deployed the workflow and then ran the popup in the dashboard to verify the result by providing the 9 input parameters mentioned in the dataset.

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