1.INTRODUCTION:

Automation and artificial intelligence (AI) are transforming businesses and will contribute to economic growth via contributions to productivity. They will also help address challenges in areas of healthcare, technology & other areas. At the same time, these technologies will transform the nature of work and the workplace itself. In this code pattern, we will focus on building state of the art systems for churning out predictions which can be used in different scenarios. We will try to predict fraudulent transactions which we know can reduce monetary loss and risk mitigation. The same approach can be used for predicting customer churn, demand and supply forecast and others. Building predictive models require time, effort and good knowledge of algorithms to create effective systems which can predict the outcome accurately. With that being said, IBM has introduced Auto AI which will automate all the tasks involved in building predictive models for different requirements. We will get to see how Auto AI can churn out great models quickly which will save time and effort and aid in faster decision making process.

When the reader has completed this code pattern, they will understand how to :

- Quickly set up the services on cloud for model building.
- Ingest the data and initiate the Auto AI process.
- Build different models using Auto AI and evaluate the performance.
- Choose the best model and complete the deployment.
- Generate predictions using the deployed model by making ReST calls.
- Compare the process of using Auto AI and building the model manually.

2.LITERATURE SURVEY

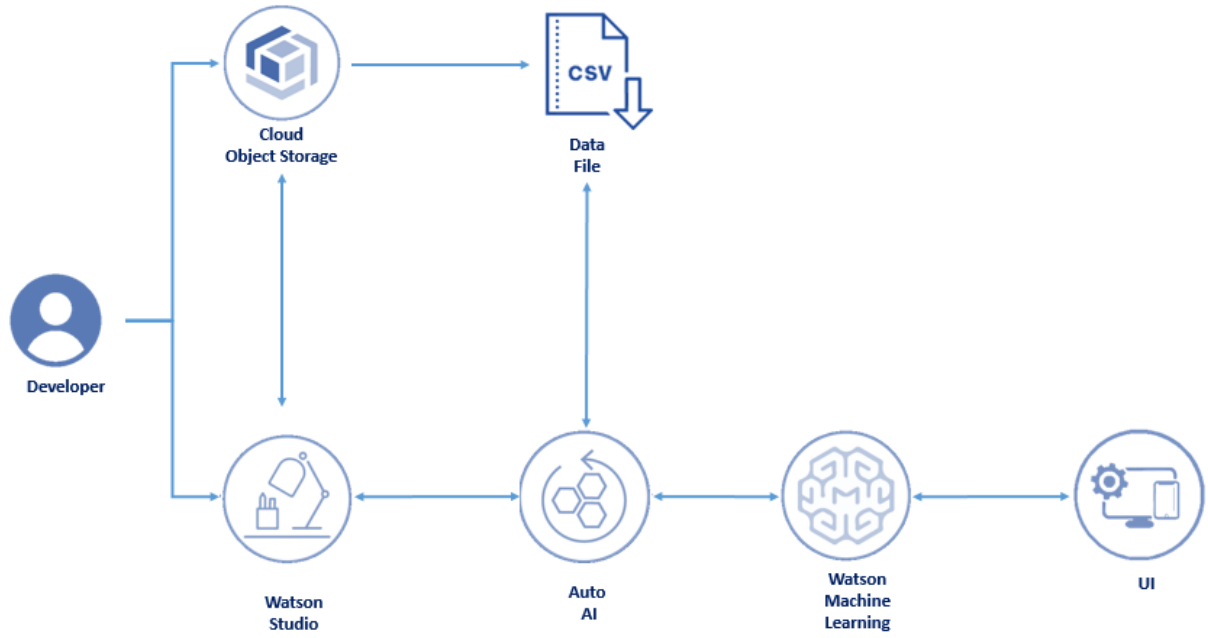
We need to create the Necessary IBM services. The following are the services that you have to create.

- Watson studio
- Node-RED
- Cloud Object Storage service (COS)
- Machine Learning service (ML)

COS and ML services will e created while creating a Watson Studio Project

3.THEORITICAL ANALYSIS:

BLOCK DIAGRAM:



Services Used:

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

4.EXPERIMENTAL INVESTIGATIONS :

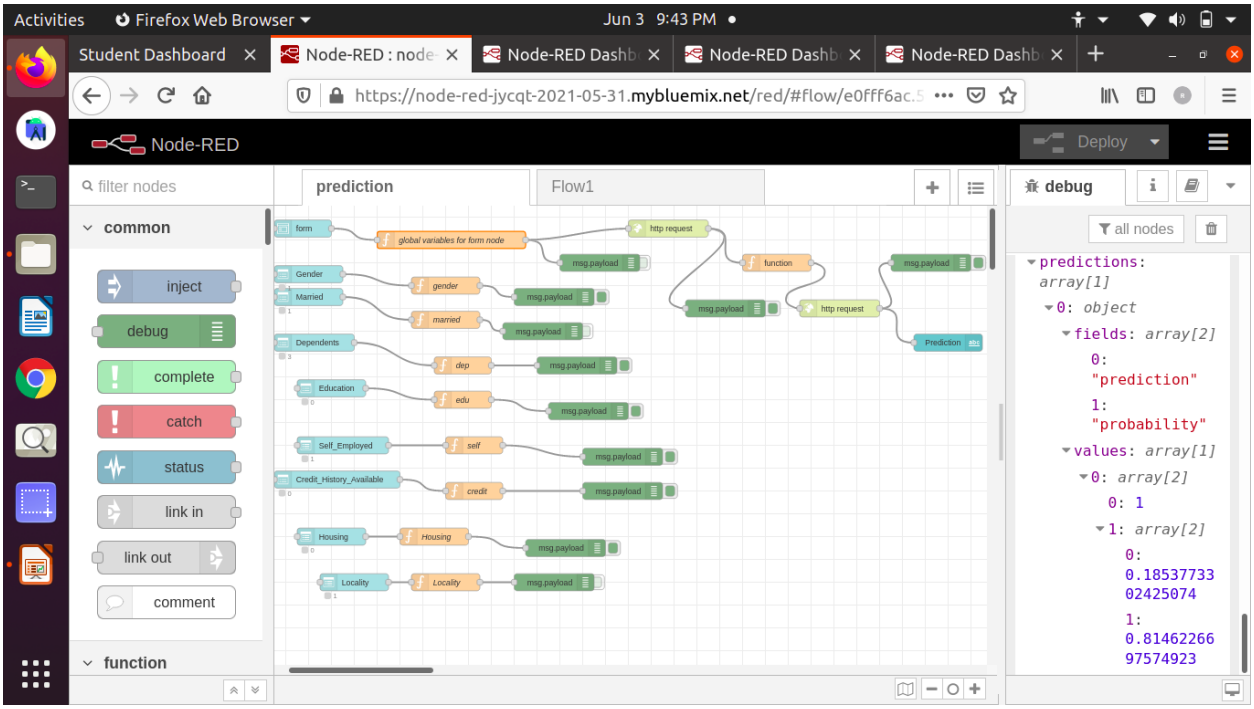
The AutoAI experiment has been completed in 97 seconds to generate four pipelines. `The duration of experiment depends completly on the size of the dataset.` AutoAI selects the appropriate machine learning algorithm (in the fifth stage of the process under `Model Selection`) which is best suited for the dataset.

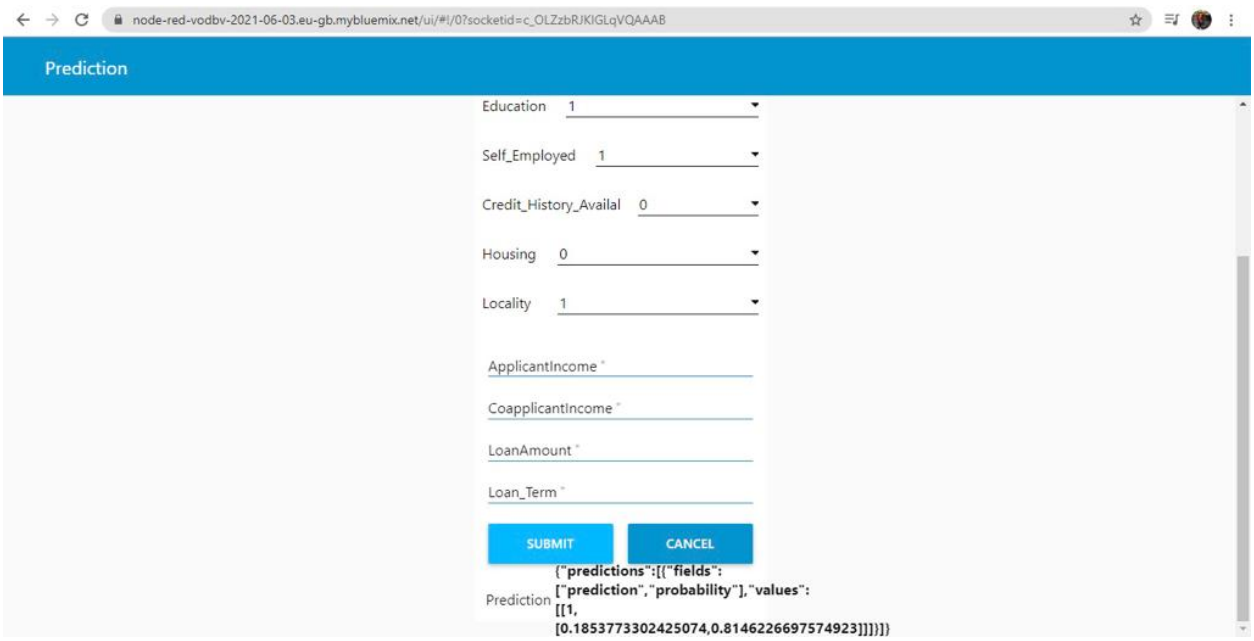
Each pipeline is run with different parameters, pipeline 3 is run on a sequence of HPO (hyper parameters optimization) & FE (feature engineering) where as pipeline 4 includes HPO (hyper parameters optimization), FE (feature engineering) and a combination of both. All these are done on the fly! Isn't it amazing that we just have to sit and watch while AutoAI takes care of things for us and generates awesome machine learning models!! There's very minimal intervention required to get things going and in no time we have the generated pipelines to choose from.

5.FLOWCHART:

6.RESULT:

We are Building an Application using Node-RED which takes inputs from the user and showcases the predicUI.





7.ADVANTAGES & DISADVANTAGES:

ADVANTAGES:-

- Processes unstructured data.
- Fills human limitations.
- Acts as a decision support system, doesn't replace humans.
- Improves performance + abilities by giving best available data.
- Improve and transform customer service.
- Handle enormous quantities of data.
- Sustainable Competitive Advantage.

DISADVANTAGES:

- Only in English (Limits areas of use)
- Seen as disruptive technology
- Maintenance
- Doesn't process structured data directly
- Increasing rate of data, with limited resources

8. APPLICATIONS:

* Google's AI-Powered Predictions. ...
* Ridesharing Apps Like Uber and Lyft. ...
* Commercial Flights Use an AI Autopilot.
* Spam Filters.
* Smart Email Categorization.
* Plagiarism Checkers. ...
* Robo-readers. ...
* Mobile Check Deposits.

9.CONCLUSION:

The conclusion of our project to discusses building a system for creating predictions that can be used in different scenarios. It focuses on predicting fraudulent transactions, which can reduce monetary loss and risk mitigation by building a web application.
Using IBM AutoAI, we automate all of the tasks involved in building predictive models for different requirements. You create a model from a data set that includes the gender, married, dependents, education, self-employed, applicant income, co-applicant income, loan amount, loan term, credit history, housing, and locality.

10.FUTURE SCOPE:

The fusion of cloud and Artificial Intelligence (AI) can be a source of innovation as well a means to accelerate change. The correlation between AI and the cloud could become a symbiotic relationship, where one technology helps better the other.

11.BIBILOGRAPHY:

We use References of previous works in githup.

https://github.com/IBM/predict-fraud-using-auto-ai

We used saw some Reference videos in You Tube.

https://www.youtube.com/watch?v=29qvSy7evgY